In Medicine. "An Examination in the theoretical branches to which all may be admitted who have passed the entrance examination in Arts, and have been engaged in Medical Studies for two years in a recognized School.

An examination for the Degree of Licentiate in Medicine (L. M.,) to which all may be admitted who have passed the first examination, and who have been since engaged in Medical Studies for three years in a recognized School.

An examination for Honors in Medical Science, to be held immediately after the examination for the Degree of Licentiate.

An examination for the Degree of Doctor in Medicine (M. D.,) to which those only may be admitted who have taken the Degree of B. A., and been engaged for two years in the study or practice of Medicine after taking the Degree of Licentiate."

In Law. "An examination for the B. L. Degree to which all may be admitted after one year from the date of obtaining a Degree in Arts, provided they have attended Lectures in a recognized School of Law for three years.

An examination for Honors, to be held at a convenient time after the preceding examination."

In Civil Engineering. "An examination for the Degree of Master of Civil Engineering (M. C. E.,) to which all may be admitted who have obtained the Degree of B. A., and have since passed four years in the study and practice of the profession.

An examination for Honors to be held shortly after the preceding examination."

The standard for the proposed entrance examination differs little from that of the London University; that for the B. A. Degree differs rather in kind than in difficulty. It has been objected to the standard that it is too high, but apart from placing before students an object worthy of their best exertions, in no other way can a fair advantage be given to a student who prefers one peculiar branch of study. Suppose that the maximum number of marks on each of the five subjects is 100 and that the minimum of competence in each is 25, making in all the subjects 125; it is clear that the student who has but an average knowledge of all the subjects will have the advantage over the student who has reached perfection in one or two. In a word a low standard encourages mediocrity, a high standard genius. A separate examination is not proposed for the M. A. Degree but only those can receive it who have passed the Honor Examination. In the course for medical studies two years are to be given to theoretical and three to practical subjects. Every institution affiliated by one University will be recognized

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by all; so that the students may be permitted to take their degree at that University they may prefer. "The great difficulty, however, which the Sub-Committee have had, is in fixing the test of admission in Languages.

As respects the entrance examination, the plan which is the one least liable to objection, is to require each candidate to pass in two of the languages, of which English must be one. Under this rule, it is supposed that the students of the Schools at the Presidency towns and hill sanitary stations, where the western classics are taught, will usually pass in English and Latin, or in English and Greek, or possibly in English and one of the Indian Vernaculars; ordinary Hindoo students in English and Bengalee or Hindee; Hindoo students of the Pundit class in English and Sanscrit; ordinary Mahomedan students in English and Persian or Urdoo (a variety of Hindee;) Mahomedans of the Moulavy class in English and Arabic; and students from the Burmese Provinces in English and Burmese. For a B. A. Degree in India the students of the Anglo-Indian Schools, it is expected by the Sub-Committee, will generally pass in English and Latin; Mahomedan students in English and Persian or Oordoo; and Hindoo students in English and Bengalee or Hindee. The Sub-Committee strongly recommend, that every candidate should be required to possess a critical knowledge of his own Vernacular language." The Sub-Committees have drawn up regulations for the proceeding to the degree in Arts, Medicine, Law, Civil Engineering, to be discussed and approved.* The Lieutenant Governor in his remarks upon the scheme (not final) drawn up by the Sub-Committees observes. In the Lower Provinces the knowledge of the English language is generally so defective that the student of the Anglo Vernacular Institutions, will not possess that exact and critical knowledge of the English language, which it is hoped will be insisted upon in the University examinations. The reasons given for the establishment of an entrance examination are upon the whole just, the age for admission should be sixteen, however if the student have a certificate affirming that for seven continuous years he with credit attended an affiliated Institution he should be admitted at the age of fourteen. Since Oordoo is the established language of ordinary instruction, this should be left prominently open to the selection of students. A merely elementary knowledge of Sanscrit and Arabic should at the entrance examination be required. The B. A. degree should be attainable after two years from the entrance examination. The tests for the exa-

* These regulations to which the following matter continually alludes are given in the original.

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minations are not of too high a standard. Honors in languages should be granted to those who possess such a knowledge of Sanscrit or Arabic as implies a power of using them for the enrichment of the Vernacular tongues. The Degree in Arts should not be dispensed with, as a preliminary qualification for degrees in the professional branches. The Director of Public Instruction in North Western Provinces animadverting upon the reports of the Sub-Committees observes. The necessity of an entrance examination is obvious, the minimum age, on account of the precocity of native intellect should be fourteen instead of sixteen. The test of admission, in languages, as proposed by the Sub-Committees, is open to many objections. The existence of Oordoo, as a language separate and distinct from Hindee is ignored.* The inexpediency of such a proceeding, founded on the supposition (totally opposed to facts) that either Bengalee or Hindee is the Vernacular language of all Hindoos is, from the Government College Returns, at once perceivable. We find in the three Colleges at Agra, Delhi and Bareilly 552 students reading Oordoo and 12 Hindee.

The Right Hon'ble the Governor of Bombay in his Minute, dated 7th February, 1855, specifies the Senate of the Bombay University, remarks upon the entrance examination, opposes affiliation and proceeds. In addition to English a student before entering should have a thorough knowledge of his own vernacular language and one or other of the following "Greek, Latin, Sanscrit, Arabic, Persian, Murathee, Guzrathee, Canarese, Sindee, Portuguese." There should be two degrees; students should go up for their B. A. degree in not less than two years after they passed the entrance examination, for their M. A. in not less than two years after the B. A. Geology should not be omitted from the Physical Sciences. Should the titles adopted be the same as those in Great Britain, an Indian graduate and an English graduate, should at least have this in common, that up to a certain point they have appropriated equal proportions of the best knowledge within their reach. The Hon'ble G. G. Lumsden in a Minute, states what he considers to be the distinguishing features of the proposed University. He advises that a small body of University examiners should travel through the Presidency visiting the affiliated Institutions, and generally agrees with the former minute. The Right Hon'ble the Governor of Bombay in a further minute urges the necessity of a high preliminary standard to be exacted without exception of all candidates for University degrees in every profession. It is observed by His Lordship that his views, upon the establishment of Law degrees,

* A revised standard and a list of vernacular test books are given.

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are most entirely in accordance with those of Mr. Howard. On two points the views of Mr. Howard might with advantage be modified. 1st, There is no reason for refusing Honors at the Bachelor's examination. 2nd, That the Doctor's Degree should not be awarded until five years after the inferior degree shall have been taken.

The College Council in their report on a scheme for granting Degrees in Medicine by the Sub-Committee of Medicine propose the following alterations and additions. The term of four years is not sufficient to enable students to acquire an adequate theoretical and practical knowledge of the Medical profession for independent practice. The student should not be allowed to proceed to his M. B. Degree until the age of 21 years. The title B. A. for the lower degree is preferable to G. A. The College Council then suggest various additions in accordance with their view that the candidates for the B. A. Degree should at least be 21 years of age, having studied during the period of five years at some affiliated Institution. Appendix A. contains the views of J. Don. M. D. and John Peet, Acting Principal, Grant Medical College, upon the standard of Medical Education for the Indian Universities. Appendix C. contains the reports of Major General Waddington, C. B. Chief Engineer of the Public Works; of W. Scott, Lieutenant Colonel, Engineers; of H. B. Turner, Lieut. Colonel, Superintending Engineer, Scind; of J. H. G. Crawford, Major, Engineers; of J. J. Berkley, Chief Resident Engineer, G. I. P. Railway Company, upon the qualifications requisite for the proposed Degrees of Master and Doctor of Civil Engineering.

Appendix D. is a report by Mr. Howard. Mr. Howard states that Law is a science and therefore the study of Law should not be commenced except upon a broad previous foundation.

"Mr. Howard is therefore of opinion, that if legal education is to be anything more than a name, or a somewhat dangerous amusement, the first Degree should be a clear test of the student's knowledge of legal principles, and aptitude for legal study.

That there should be no examination for Honors, but graduates should be named in the order of their merit, or, as at Hayleybury, 'Distinguished,' 'Highly Distinguished.'

That a second Degree, not to be taken at an earlier period than three years from the first, should be given, and that high rewards in the shape of judicial employment should be held out to those who graduate.

When it is recollected that Barristers and Attornies cannot be admitted to practise until they have been in a state of pupil-

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age for five years, unless they are graduates of Oxford or Cambridge, in which event the period is reduced to three years, Mr. Howard feels justified in saying that a less period will not be sufficient for the qualification of a native of India for a Degree."

Appendix E. contains the report of R. T. Reid, Perry Professor of Jurisprudence upon the qualifications requisite for the Law Degrees.

Appendix F. contains the substance of an introductory Lecture containing suggestions regarding Law Education by the Perry Professor of Jurisprudence in the Elphinstone College, with a further minute by the Hon'ble J. G. Lumsden, who observes that the basis of a liberal education should be made an indispensable requisite for the stamp of high distinction which the University will confer by the grant of a Superior Degree in any particular profession.

Mr. Lumsden observes. The present provincial schools are notoriously incapable of training up even a boy of the highest talents, so as to qualify him for presentation before a Board of University Examiners, or indeed to do more than we now expect of a common clerk. "There is not a School, in the Mofussil, the Poona College excepted, that could impart an education superior to what is given in Schools of the very lowest class at home. It seems then to be unquestionable that the first step to success in founding a University is the foundation of a sufficient number of really good and efficient Schools, capable of imparting to those who have the capacity and application to profit by their opportunities, at least as good an education as is to be acquired in the public and in the *best of the private Schools at home*. Here we require Schools of a higher order than the average class of English Schools. There a boy leaves his School to enter into a society more advanced in intelligence than that which he has left—a society, in fact, to the standard of which he has been working up. Here on the other hand, the boy with his fresh intelligence returns to the darkness of his home and to the bigoted observances of his domestic circle, where, instead of receiving fresh rays of light, the imperfect lights which he has acquired run the greatest risk of being speedily extinguished."

The Sub-Committee of Arts in their second report, revise their first scheme of examinations, and academical degrees, and Honors for the Universities of India adapting it more completely to the special circumstances under which Indian education is carried on. The Sub-Committee consider that with regard to degrees it is on the whole best to retain the old names indicative of an amount of mental training and knowledge which will at once be recognised. They prefer the term entrance to the term matri-

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culation as the title of the first examination. In regard to the mode by which the various Schools of learning should be connected with the University, the Sub-Committee see no valid reason for departing from the plan adopted at the foundation of the London University. This system of affiliation will they believe be found useful in improving existing institutions and in leading to the establishment of others. The affiliated Schools of one University should be acknowledged by all. The Sub-Committee think that the appointment of an entrance examination will lead the students to prepare themselves at an early age for succeeding at an University examination ; moreover success at the entrance examinations of itself is in the nature of a distinction. The difficulty of bringing students from the interior to the University has been provided for by ruling that examinations for entrance may be held simultaneously at Calcutta (or Madras or Bombay), and at certain specified places in the interior of the Presidency. This plan has been tried in Bengal in awarding the Government Scholarships and that with great success. "The great difficulty which the Sub-Committee have had is in fixing the test of admission in languages. This difficulty arises from the circumstance, that whereas in England English is the only Vernacular, and Latin, Greek and Hebrew the only classical languages, in the Bengal Presidency alone there are four main Vernacular languages, and two classical languages besides the Occidental classics ; while English must be regarded in some cases as a classical, in others as a Vernacular language.

As respects the entrance examination, the Sub-Committee have come to the conclusion, that the plan which is least liable to objection, is to require each candidate to pass in two of the languages, of which English must be one. Under this rule, it is supposed that the students of the Schools at the Presidency towns and hill sanitary stations, where the Western classics are taught, will usually pass in English and Latin, or in English and Greek, or possibly in English and one of the Indian Vernaculars ; ordinary Hindu Students in English and in Bengalee, Urdu or Hindee ; Hindu Students of the Pundit class in English and Sanskrit ; ordinary Mahomedan Students in English and Persian or Urdu ; Mahomedans of the Moulavy class in English and Arabic ; and students from the Burmese Provinces in English and Burmese.

The Sub-Committee are unanimous in thinking, that an Examination for Honors at entrance is quite unnecessary. They are of opinion that the standard of the entrance examination papers should be moderately high, so that the being placed by the Examiners in the First Division should be evidence of considerable academical progress at the age of sixteen, the

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minimum age of admission, but that more than this is not required. And they think that a moderate amount of knowledge in each branch should be sufficient to give candidates a place in the Second Division, and thus enable them to study for the Degrees."

It is proposed to admit to "the examination for the B. A. Degree, at any Indian University, those who have passed the entrance examination at that or any other Indian University, and have prosecuted their studies at any one of the affiliated Institutions for at least three years subsequent to entrance. The Senate might also have the power to admit to this examination, students who, though not belonging to an affiliated School, can satisfy the Senate that they have pursued a regular course of study under qualified tuition at least four years subsequent to entrance, and that they are of good moral character.

The Sub-Committee are further of opinion, that during the first three years of the existence of the Universities, the Senates should admit to the examination for the degree of B. A. any persons who has passed the entrance examination, and can produce certificates of good moral character.

For a B. A. Degree in India, the Sub-Committee think it sufficient, so far as languages are concerned, that the candidates, as at entrance, should be required to pass in at least two of the languages of which English must be one. The Sub-Committee strongly recommend that every candidate should be required to possess a critical knowledge of his own Vernacular language, and that the examination should be so conducted as to put this knowledge strictly and thoroughly to the test. For the Honor Examination, in the branch of Languages, the Sub-Committee would further make it compulsory on every Student to pass in a second classical language; so that, to obtain honors in languages, every Anglo-Indian student, generally speaking, would undergo an examination in Latin and Greek, as well as in his own Vernacular, English; every Hindu student in English and Sanskrit, besides his own language; and every Mahomedan student in English and Arabic, as well as in Persian or Urdu. Thus the smallest number of languages which each candidate is required to know will be less by two for a Degree, and less by one for Honors, than at the London University.

In Mathematics and Natural Philosophy, the standard of the London University has been altered only by introducing the subject of Optics, and slightly modifying the course in Astronomy.

In addition to the usual chief branches of Ancient History, the Sub-Committee have not only added the History of India, but also that of Modern Europe; and have joined with them all the study of the Principles of Historic Evidence.

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In the standard for the Mental and Moral Sciences, Mental Philosophy, is included.

The Physical Sciences include Animal Physiology, Physical Geography, and Chemistry.

The Sub-Committee are of opinion that, in the examination for the B. A. Degree, the standard of the papers should be moderately high, so as to afford, in regard to the candidates placed in the First Division, evidence of considerable academical progress and fitness for the Honor Examination; but that a moderate amount of knowledge in each branch should suffice to secure the candidates a place in the Second Division, and a Degree."

It seems to the Sub-Committee, that there should be five distinct branches of learning in which Honors "may be taken by any person who passes the examination for the B. A. Degree, and is placed by the Examiners in the First Division. These are:—

1. Languages.
2. History.
3. Mathematics and Natural Philosophy.
4. Natural History and the Physical Sciences.
5. The Mental and Moral Sciences.

The branch of LANGUAGES usually connected with History has been rendered complete in itself, by the introduction of Comparative Grammar, the History of English Literature, and the Principles of Composition. Branches 3 and 4 are almost the same as similar branches of Honors in the London University.

From branch 5 the MENTAL AND MORAL SCIENCES, they have removed the subjects of *Political Economy* and *Political Philosophy* now included in History, and have supplied their place by Natural Theology and other important topics. In this branch five subjects are compulsory, *viz. Logic, the Philosophy of Rhetoric, Natural Theology, Moral Philosophy and Mental Philosophy*. A sixth must be selected by each student from the following list:—

a. The Philosophy of the Inductive Sciences.
b. The Elements of Jurisprudence.
c. The Philosophy of Education.
d. The Evidences of Revealed Religion, as contained in Butler's Analogy and Paley's Evidences.

Candidates for Honors must proceed to the Honor Examination immediately after taking the Degree of B. A. in the first class all those who fail to come up for a Degree Examination within five years from their passing the Entrance examination will be excluded.

Every candidate who obtains Honors in any one or more of

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these five branches should, in the opinion of the Sub-Committee, be entitled at once to the higher Degree of M. A. without payment of any fee."

The Sub-Committee propose "to dispense altogether with the examination for the Degree of Master of Arts, and to prescribe in its stead, the examination for Honors at the B. A. Degree. In no case would they confer the M. A. Degree without examination, but they propose this distinction. They would confer the Degree of M. A. immediately and gratuitously on those who in the same year take Honors in any one or more of the prescribed branches of knowledge at the B. A. Degree. They would also confer it on payment of a fee upon any person who has passed the B. A. examination, and who in any subsequent year may pass the Honor Examination in any one of the appointed branches; but they would allow such a student no other honor, however high his position might be on the passed list.

Students intending to prosecute their further studies in Law, Medicine and Civil Engineering may, by special diligence, prepare themselves for the B. A. Degree within three years from their entrance examination. They will be examined, but even though they pass, the Degree itself will not be conferred upon them till the prescribed period of four years has expired."

The rules drawn up by the several Sub-Committees for the examination of Students in Arts, Law, Civil Engineering and Medicine are as follows :—

Arts Entrance Examination.

The entrance examination shall take place once a year and shall commence on the first Monday in March. The chief examination will be held in Calcutta but candidates may be examined at Berhampore, Dacca, Patna, Cuttack, Benares, Agra, Delhi, Ajmere, Lahore. All candidates at or past the age of sixteen, having previously applied to the Registrar or to the Secretary of the Local Committee at one of the above mentioned places, may be admitted to this examination. "The Examination shall be conducted by means of printed papers, which shall be the same for all places in the interior as for *Calcutta*, and which may include a paper of questions to be asked and answered, and of sentences to be read and explained, orally.

Candidates for entrance shall be examined in the following subjects :—

1. Languages.

Two of the following Languages of which English must be one, *viz.*

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English.	Sanskrit.
Greek.	*Bengali.*
Latin.	*Hindi.*
Hebrew.	*Urdu.*
Arabic.	*Burmese.*
Persian.	

Candidates shall be examined in each of the languages in both prose and poetry; the subjects being selected by the Senate *one year and a half* previous to the examination from any approved classical or standard works or authors, such as the following:—

English.

Pope, Cowper, Scott, Campbell, Addison, Johnson, Goldsmith, Southey, DeFoe.

Greek.

Homer, Xenophon.

Latin.

Virgil, Horace, Sallust, Cæsar, Livy, Cicero.

Hebrew.

Arabic.

Alif Laila, Nafhat al Yaman.

Persian.

Gulistan, Bostan, Yusuf-o-Zulaikha, Akhalah-i-Muhsini, Anari Suhaili.

Sanskrit.

Raghuvansa, Kumara Sumbhava.

Bengalee.

Tota Itihas, Life of Raja Krishna Chundra Roy, Arabian Nights, Ramayun.

Hindee.

The Ramayun.

Urdu.

Burmese.

The papers in each language shall include Questions on Grammar and Idiom.

Easy sentences in each of the languages in which the Candidate is examined shall be given for translation into the other language.

II. History and Geography.

The Outlines of General History, as contained in Marshman's Brief Survey, or other similar works; and the Outlines of

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Indian History as contained in Murray's History of India, or other similar works.

A general knowledge of Geography, and a more detailed knowledge of the Geography of India.

III. Mathematics and Natural Philosophy.

Arithmetic and Algebra.

The ordinary Rules of Arithmetic.

Vulgar and Decimal Fractions.

Extraction of the Square-root.

Addition, Subtraction, Multiplication and Division of Algebraical Quantities.

Proportion.

Simple Equations.

Geometry.

The first three books of Euclid.

Mechanics.

Composition and Resolution of Statical Forces.

The simple Mechanical Powers, with the ratio of power to weight in each. Centre of Gravity.

IV. Natural History.

A general knowledge of the habits and characteristics of vertebrated animals, as described in Patterson's "Zoology for the Use of Schools," or in any similar work.

General economy of vegetation and the simple or elementary organs of plants, as contained in the first 46 Sections of "Vegetable Physiology" in Chambers's Course, or in any similar work.

In Branches II. III. and IV. the answers may be given in either of the languages in which the Candidate is examined.

At the close of each day's examination at any places in the interior above-mentioned, the answers of each candidate shall be sealed up by the *Secretary to the Local Committee of Public Instruction*, and forwarded immediately to the Registrar.

On the morning of the *fourth Monday* after the examination, the Examiners shall arrange in two divisions, each in alphabetical order, the passed candidates to each of whom shall be given a certificate of age and class."

Bachelor of Arts.

The examination for the B. A. Degree shall take place once a year and commence on the first Monday in April. Though candidates may be admitted to the examination in three years after

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passing the entrance examination, yet the Degree will not be confirmed until the fourth year. "Every person who has passed the entrance examination at either of the Universities of *Madras* or *Bombay*, shall be admitted to the examination for the Degree of B. A. in the *Calcutta* University, provided he shall first satisfy the Registrar that he is of good moral character, and that he has prosecuted, during the period that has elapsed since his passing the entrance examination, a regular course of study in one of the Institutions affiliated to either of those Universities.

Applications must be made and certificates forwarded to the Registrar at least *fourteen* days before the examination begins. Notice in writing must also be given, by the candidates, of the languages in which they wish to be examined.

The fee for the degree of B. A. shall be twenty-five Rupees. No candidate shall be admitted to the examination, unless he have previously paid this fee to the Registrar. If a candidate fail to pass the examination, the fee shall not be returned to him. He may be admitted to any one or more subsequent examinations on payment of a like fee of twenty-five Rupees on each occasion.

The examination shall be conducted chiefly by means of written or printed papers, but the Examiners may also put *viva voce* questions to any candidate in the subjects in which they are severally appointed to examine.

Candidates for the degree of B. A. shall be examined in the following subjects:—

I. LANGUAGES.

Two of the following Languages, of which English must be one:—

English.	Sanskrit.
Greek.	*Bengalee.*
Latin.	*Hindee.*
Hebrew.	*Urdu.*
Arabic.	*Burmese.*
Persian.	

Candidates shall be examined in each of the languages in both prose and poetry; the subject being selected by the Senate *two years* previous to the Examination from any approved classical or standard works or authors such as the following:—

English.

Milton, Shakespear, Dryden, Pope, Young, Thomson.

Bacon, Swift, Addison, Johnson, Goldsmith, Burke, Southey, Macaulay.

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Greek.

Homer, Sophocles, Euripides, Herodotus, Thucydides, Xenophon, Demosthenes, Plato.

Latin.

Virgil, Horace, Cæsar, Cicero, Livy, Tacitus.

Hebrew.

Arabic.

Alif Lailah, Nafhat al Yaman, Ikhwan al Safa, Soyuti's Tarikh al Kholfa, Tarikh Yamin.

Persian.

Sekandar Nameh, Gulistan, Dewan of Hafiz, Akhlaq-i-Jalali (or Nasiri,) Dewan of Orfi, Abu-al-Fazl's Letters.

Sanskrit.

Rughuvansa, Kumarusumbhava, Kiratarjuniya, Viracharita, Uttaracharita Mudrarakshasa.

Bengalee.

Batrish Singhasan, Purush Parikhya, Betal Panchabingsati, Probodh Chandrika, Mahabharat, Ramayan, Meghaduta, Sakantala, Annada Mangal.

Hindee.

Urdu.

Burmese.

The papers in each language shall include Questions on Gramar and Idiom.

Sentences in each language shall be translated into the other.

II. History.

The principles of historic evidence as treated in Isaac Taylor's two works on the subject, or other similar books.

The History of England, (including that of British India,) to the end of 1815.

Elphinstone's History of India.

Ancient History, with special reference to the History of Greece to the death of Alexander, the History of Rome to the death of Augustus, and the History of the Jews.

The Historical Questions will include the Geography of the countries to which they refer.

III. Mathematics and Natural Philosophy.

Arithmetic and Algebra.

The ordinary Rules of Arithmetic.

Vulgar and Decimal Fractions.

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Extraction of the Square-root.

Addition, Subtraction, Multiplication and Division of Algebraical Quantities.

Simple and Quadratic Equations, and questions producing them.

Algebraical Proportion and Variation.

Permutations and Combinations.

Arithmetical and Geometrical Progression.

Binomial Theorem.

Simple and Compound Interest, Discount, and Annuities for terms of years.

The nature and use of Logarithms.

Geometry.

The first six books of Euclid, and the eleventh book to Prop. XXI, with deductions.

Conic Sections.

Plane Trigonometry.

Solution of all cases of Plane Triangles. The expression for the Area of a Triangle in terms of its sides.

Mechanics.

Composition and Resolution of Forces.

The Mechanical Powers.

The Centre of Gravity.

The general laws of Motion.

The motion of falling bodies in free space and down inclined planes.

Hydrostatics, Hydraulics and Pneumatics.

Pressure of liquids and gases, its equal diffusion and variation as the depth.

Specific Gravity.

Description and explanation of the barometer, siphon, common pump, forcing pump, air-pump, and steam-engine.

Optics.

Laws of Reflection and Refraction.

Formation of images by simple lenses.

Astronomy.

Elementary knowledge of the Solar System, including the phenomena of Eclipses.

IV. PHYSICAL SCIENCES.

Chemistry.

The Atmosphere, its general nature and condition ; its cor-

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ponent parts—Oxygen and Nitrogen; their properties, water and carbonic acid; proportion of these substances in the air.

Chlorine and Iodine, as compared with Oxygen.

Water; its general relation to the atmosphere and earth: its natural estates and relative purity; sea water, river water, spring water, rain water, pure water; effects of heat and cold on it; its compound nature; its elements.

Hydrogen; its nature and proportion in water; its presence in most ordinary fuels; its product when burnt.

Sulphur; phosphorus, and carbon, generally.

Nitric acid, sulphuric acid; carbonic acid; their elements.

Hydrochloric or muriatic acid.

Alkalies, earths, oxydes, generally.

Salts; their nature generally; sulphates; nitrates; carbonates.

Metals generally; iron, copper, lead, tin, zinc, gold, silver, platinum, mercury.

Powers of matter; aggregation; crystallization; chemical affinity; definite equivalents.

Combustion; flame; nature of ordinary fuel; chief results of combustion, *i. e.*, the bodies produced.

Heat; natural and artificial sources; its effects; expansion; solids, liquids, gases, thermometer, conduction, radiation, capacity, change of form, liquefaction, steam.

Animal Physiology.

As contained in Knox's translation of Milne Edwards' Zoology, or other similar works.

Physical Geography.

Physical Geography, as contained in Hughes or any other similar work.

V. Mental and Moral Sciences.

Logic.

The Elements of Logic, as contained in Whateley or any similar work.

Moral Philosophy.

Moral Philosophy, as contained in Wayland, Abercrombie, or any similar work.

Mental Philosophy.

Mental Philosophy, as contained in Abercrombie, Dr. Payne, or any similar work.

On the morning of the *second Monday* after the examination, the Examiners shall arrange in two divisions, each in alphabetical order, such of the candidates as have passed. Those in the

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first division shall be recommended for the examination for Honors.

For the first three years after the University shall have been established, candidates will be admitted to the examination for a degree of B: A. who have at any time previously passed the entrance examination, and can produce Certificates of good moral character.

Any candidate for honors who has been placed in the first division at the examination for the degree of B. A., provided he has not delayed proceeding to the examination for that degree more than five years from the date of passing the entrance examination, may be examined for Honors in any one or more of the following branches :—

1.—Languages.
2.—History.
3.—Mathematics and Natural Philosophy.
4.—Natural History and the Physical Sciences.
5.—The Mental and Moral Sciences.

Candidates for Honors must give notice in writing to the Registrar, on or before the *last day of March*, of their intention to enter into the examination, specifying the branch or branches in which they desire to be examined.

I. Candidates for Honors in LANGUAGES shall be examined in Latin and Greek, or in English and Arabic, or in English and Sanskrit.

In Latin, Greek and English, a limited range of subjects shall be selected by the Senate from approved classical authors : and in Arabic and Sanskrit the examination shall be in the following works :—

Arabic.

Alif Lailah, Nafat al Yaman, Ikhwán al Safa, Taríkh al Kholfa, Taríkh Yamíní, Hamásah, Maquimát Harírí (one-half) Dewán Ibn Fáriz.

Sanskrit.

Raghuvansa Kumarasambhava Kiratarjunífya, Sisúpalavadha, Viracharita, Uttaracharita, Mudrarakshasa, Sakuntalá, Kadambari, Part I.

The examination shall include translation into any vernacular language, and retranslation from any vernacular language. It shall also include composition in any vernacular language upon questions arising out of the authors selected for examination. The candidates will also be examined in Comparative Grammar and Philology, the Principles of Composition and the History of English Literature.

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The examination shall be so conducted as to test the exact and critical acquaintance of the candidates with the subjects selected by the Senate, and also their general aquaintance with the literature of the languages in which they are examined.

II. Candidates for honors in HISTORY shall be examined in the following subjects :—

The History, political, constitutional, social and religious, of the principal ancient and modern nations of the world.

The History of modern civilization.

Chronology.

Ethnology.

Geography, in its bearing on History.

Political Philosophy.

——— Economy.

III. Candidates for Honors in MATHEMATICS and NATURAL PHILOSOPHY shall be examined in

Algebra, including the theory of Equations.

Plane Analytical Geometry.

Solid Geometry, treated geometrically.

Differential and Integral Calculus.

Spherical Trigonometry.

Statics and Dynamics.

Hydrostatics.

Hydraulics and Pneumatics.

Optics.

Astronomy.

IV. Candidates for Honors in NATURAL HISTORY and the PHYSICAL SCIENCES shall be examined in

Zoology and Animal Physiology.

Botany and Vegetable Physiology.

Geology and Mineralogy.

Chemistry.

Electricity and Magnetism.

Meteorology.

Physical Geography.

V. Candidates for Honors in the MENTAL AND MORAL SCIENCES shall be examined in

Logic.

Philosophy of Rhetoric.

Natural Theology.

Moral Philosophy.

Mental Philosophy.

They shall also be examined in one at least of the following subjects, to be selected by the candidate himself :—

Philosophy of the Inductive Sciences.

Elements of Jurisprudence.

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Philosophy of Education.

Evidences of Revealed Religion as contained in Butler's Analogy and Paley's Evidences.

The examinations for Honors shall take place in the following order, *viz.*, Languages in the first week, History in the second, Mathematics and Natural Philosophy in the third, Natural History and the Physical Sciences in the fourth, and the Mental and Moral Sciences in the fifth week, after the general examination for the B. A. degree.

The examination shall take place on the *Tuesday, Wednesday and Thursday* of each week, in the mornings from 10 A. M. to 1 P. M., and in the afternoons from 2 to 5 P. M.

The Examiners shall publish, in the week following each examination for Honors, a list of the candidates who acquit themselves to their satisfaction, in order of proficiency, and in three classes; candidates shall be bracketed together, unless the Examiners are of opinion that there is a clear difference between them.

In determining the relative position of candidates for Honors in the several branches, the Examiners shall have regard to their proficiency in the corresponding subjects at the B. A. Examination.

The first student of the first class in each branch shall receive a Gold Medal and a prize of Books to the value of One hundred Rupees, and the second student of the first class in each branch shall receive a Silver Medal and a prize of Books to the value of One hundred Rupees, provided that their answers are considered by the Examiners to possess sufficient merit.

Every person who, immediately after passing the B. A. Examination, obtains Honors in any one or more of the above mentioned five branches of knowledge, shall be entitled to the degree of Master of Arts without further examination or fee.

Any other graduate of this or any other Indian University, or of any of the Universities of the United Kingdom, may be admitted to the examination for the degree of M. A. on payment of a fee of fifty Rupees.

No special examination will be held, but the candidate must pass the Honor Examination in at least one of the prescribed branches of knowledge. He must give notice in writing to the Registrar, on or before the *last day of March*, of his intention to enter into the examination, specifying the branch in which he desires to be examined, and must at the same time furnish a Certificate of having received the degree of B. A.

Every candidate for the degree of M. A. is expected to possess a competent knowledge of every subject included in the branch in which he is examined.

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If a candidate fail to pass the examination, the fee will not be returned to him. He may be admitted to any one or more subsequent examinations on payment of a like fee of fifty Rupees on each occasion.

The names of the successful candidates for the M. A. degree shall be published in an alphabetical list, and each successful candidate shall receive with his degree a Certificate setting forth the branch in which he was examined."

The Sub-Committee of Law recommend as tests for an ordinary Degree in Law. "An examination sufficient to test the candidate's knowledge of the general Principles of Jurisprudence.

An examination sufficient to test the candidate's knowledge of the several systems of Municipal Law which obtain in this country—*first*, as it concerns personal rights and status; *secondly*, as it concerns property, including of course the general nature and the various kinds of property, the different modes of acquiring it, and herein the Law of Contracts, and the Law of Succession, whether testamentary or *ab-intesto*; *thirdly*, as it concerns the sanction of rights, or the remedies for wrongs, and herein the general principles of procedure, the Law of Evidence, and the Criminal Law."

The Sub-Committee also propose, "that there should be an examination for Honors, in which separate papers should be set on the following subjects :—

On the Law as administered by the Courts of the East India Company, including Hindoo and Mahomedan law, and the law of immoveable property in the Mofussil.

On the Law as administered by the Supreme Courts, including those parts of the Hindoo and Mahomedan law there administered and the English law of real property.

On Mercantile Law.

On Roman Civil Law, International Law, and the conflict of Laws."

The Sub-Committee of Civil Engineering "concur with Lord Elphinstone in thinking that the degree of B. A. should be enforced from all candidates for the professional degree in Civil Engineering; but in order to permit students, who intend hereafter to adopt the profession of an Engineer, to acquire at an early period some special acquaintance whth their profession, we recommend that the Civil Engineering Colleges (if their Rules and Course of Study will admit of it) be so affiliated to the University, that all or part of the four years' study required for the B. A. degree may be passed in one of those Colleges.

One degree will be given in Civil Engineering, and every one who passes a successful examination, and obtains the degree, shall be called "Master of Civil Engineering" ("M. C. E.")

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An examination for this degree shall be held annually, in the month of March.

No candidate shall be admitted to examination for this degree until he has obtained the degree of B. A. in one or other of the Indian or European Universities, and until he produce Certificates of having passed four subsequent years in the study and practice of the profession. Two of the four years must be passed in actual professional practice under an Engineer in charge of works.

The examination shall be conducted entirely by means of printed papers. It shall be sufficient to test the candidate's knowledge of

Mathematics.
- Spherical Trigonometry, as applied to Geodesy.
- Composition and Resolution of Forces.
- Equilibrium of Arches.
- Strength and Stress of Material.

Natural Philosophy.
- Steam, its power, properties, and various applications.
- Fuel of various kinds, estimation of calorific power, electricity, and the various appliances for making it economically useful.
- Meteorology, Physical Geography, } especially of India.
- Chemistry, as applicable to cements, conditions and effects of fermentation, causes of decay, and preservatory processes.
- Geology, Mineralogy, } The nature of soils and earths, the selection of building and road materials.
- Botany, vegetable products, timber, fibres, oils.
- Theory of Rivers.

Architecture.
- The Classic orders and their parts, their application, principles of composition.
- Styles, { Peculiarities of different styles, and their modes of adoption.

Practical Science.
- Drawing in all its branches, geometrical, perspective, and isometrical.
- Hydrography.
- Mechanism and Mill-work.
- Animal power.
- Various Mechanical Arts, *viz.* carpentry, building, smith-work, iron-founding, and forging.
- Preparation of material.

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Practical Science.	Brick-making. Lime-burning. Pottery. Modelling. Timber-Cutting. Artificial Foundations.

The examiners shall place in a class by themselves such of the passed candidates as they think should be allowed to try for Honors, and the remainder of the passed candidates will form a second class. Both classes will be arranged in alphabetical order.

Honors.

The examination for Honors, to be held one month after the general examination, will test a higher degree of attainments in any of the branches of Science above enumerated, at the option of the candidates. 'Those entitled to Honors shall be arranged in three classes and in order of merits.'"

Candidates for the Degree of Licentiate in Medicine and Surgery shall be required :—

"1. To have been engaged during five years in their professional studies at a School of Medicine.

2. To have passed the entrance examination of the Faculty of Arts, of the University of Calcutta, previous to commencing the study of Medicine recognised by the University.

3. To pass two examinations.

The First Examination shall take place once a year and commence in the third week of March.

No candidate shall be admitted to this examination unless he have produced certificates to the following effect :—

1. Of having completed his eighteenth year.

2. Of having been engaged in Medical Studies for at least two Academic years.

3. Of having attended Courses of Lectures on the following subjects:

Descriptive and Surgical Anatomy, ..	*Two Courses.*
Chemistry, ...	*Two Courses.*
Botany, ...	*One Course.*
Materia Medica, ...	*One Course.*

4. Of having dissected during two winter terms, and of having completed at least twelve dissections during each of those terms.

These Certificates shall be transmitted to the Registrar at least fourteen days before the examination begins.

Candidates shall be examined in the following subjects :—

Descriptive and Surgical Anatomy.

Chemistry.

Botany.

Materia Medica and Pharmacy.

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The examinations in these subjects shall be written, oral, and practical.

The days and hours of the examinations shall be publicly notified at least one fortnight before they are held. At the end of one week from the day of the last examination, the Examiners shall arrange the successful candidates in two divisions, the first to be arranged in order of merit, the second in alphabetical order.

If in the opinion of the Examiners, sufficient merit be evinced, the candidate who shall distinguish himself the most in Descriptive and Surgical Anatomy, the candidate who shall distinguish himself the most in Chemistry, the candidate who shall distinguish himself the most in Materia Medica and Pharmaceutical Chemistry, and the candidate who shall distinguish himself the most in Botany, shall each receive a Scholarship of Sixteen Rupees a month for the next three years.

No single candidate shall hold more than one Scholarship at the same time.

Under the same circumstances, the first and second candidate in each of the preceding subjects shall each receive a Microscope of the value of One Hundred Rupees.

Under the same circumstances, the candidate who shall distinguish himself the most in Structural and Physiological Botany shall receive a similar Prize.

The SECOND EXAMINATION shall take place once a year, and commence in the third week of March.

No candidate shall be admitted to this examination within three years of the time of his passing the FIRST EXAMINATION, nor unless he have produced Certificates to the following effect:—

1. Of having passed the FIRST EXAMINATION.
2. Of having subsequently to having passed the FIRST EXAMINATION attended Lectures on:—

COMPARATIVE ANATOMY, ...	*One Course.*
GENERAL ANATOMY AND PHYSIOLOGY, ...	*Two Courses.*
MEDICINE (*including* HYGIENE) AND GENERAL PATHOLOGY, ...	*Two Courses.*
SURGERY, ...	*Two Courses.*
DISEASES OF THE EYE, ...	*One Course of six months.*
MIDWIFERY, ...	*Two Courses.*
MEDICAL JURISPRUDENCE, ...	*One Course.*

Of having attended a course of Practical Chemistry, comprehending practical exercises in conducting the more important processes of General and Pharmaceutical Chemistry; in employing tests for discovering the adulteration of articles of the Materia Medica and the presence and nature of Poisons; and in

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the examination of mineral waters, animal secretions, urinary deposits, calculi, &c.

4. Of having attended to Practical Pharmacy for at least three months, producing a certificate of having acquired a practical knowledge of the preparations and compounding of Medicines.

5. Of having subsequently to having passed the FIRST EXAMINATION dissected during two winter terms, and of having performed operations on the dead subject during the last or fifth winter term,—the Certificate of the latter to specify the number and nature of the operations so performed.

6. Of having conducted at least five labours. Certificates on this subject will be received from any legally-qualified Practitioner in Medicine.

7. Of having attended the Surgical Practice of a recognised Hospital or Hospitals during twenty-four months and Lectures on Clinical Surgery during such attendance.

8. Of having attended the Medical Practice of a recognised Hospital or Hospitals during twenty-four months, and Lectures on Clinical Medicine during such attendance.

The course of Clinical Instruction to extend from 15th June to 15th March, one Lecture to be given twice a week, and Bedside Instruction on the intervening days.

9. Of having attended the practice of an Eye Infirmary during six months.

The candidate shall produce reports of six Medical and of six Surgical cases, drawn up and written by himself during his period of service as Clinical Clerk and Dresser.

The said cases to be duly authenticated by the Professors of Medicine and Surgery respectively.

The candidate shall also produce a Certificate of general character and conduct from a Teacher, as far as the Teacher's opportunity of knowledge has extended.

These Certificates shall be transmitted to the Registrar at least fourteen days before the examination begins.

Candidates shall be examined in the following subjects :—

PHYSIOLOGY.

The papers in Physiology shall include questions in Comparative Anatomy.

GENERAL PATHOLOGY, GENERAL THERAPEUTICS, HYGIENE.

SURGERY (*including* DISEASES OF THE EYE).

MEDICINE.

MIDWIFERY.

MEDICAL JURISPRUDENCE.

The examinations shall be written, oral, and practical.

The examinations shall be conducted on days and at hours to be notified, at least one fortnight before their commencement.

The Practical (Clinical) Examination in Medicine and Sur-

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gery shall be conducted in the Wards of a Hospital, by the Examiners of those branches.

In Medicine and Surgery, each candidate shall be required to examine, diagnose, and treat six cases of acute or chronic disease, to be selected by the Examiners; to draw up careful histories of these cases, and to perform and report in detail Necroscopical Examinations, should any of the selected cases end fatally. Should none so terminate, the *post-mortem* examination of any other cases that may have died in Hospital shall be performed and reported on by the candidates.

The candidates shall in addition perform such of the minor operations of Surgery as may be required in the Out-door Dispensary of the Hospital at the time of the examination, and as the Examiners may select.

They shall also each perform three capital operations upon the dead subject, after detailing to the Examiners the Pathological conditions in which such operations are necessary, the different modes of operation adopted, and their reasons for preferring any particular mode of procedure.

They shall also apply apparatus for great surgical injuries, and explain the objects to be attained by them, as well as the best manner of effecting those objects.

They shall also, in the Medical Wards, examine morbid products chemically, and by the aid of the Microscope, in the presence of the Examiners, demonstrating the results obtained.

On Monday, in the week following the conclusion of the Clinical examination, the Examiners shall arrange in two divisions, in alphabetical order, such of the candidates as have passed, and a Certificate signed by the Chancellor, under the Seal of the University, shall be delivered to each candidate.

Such candidates only, as in the opinion of the Examiners are admissible to the examination for Honors, shall be placed in the First Division.

Any candidate who has been placed in the First Division at the SECOND EXAMINATION may be examined for Honors in any, or all of the following subjects :—

PHYSIOLOGY AND COMPARATIVE ANATOMY.

Candidates may illustrate their answers by sketching the parts they describe.

SURGERY.

MEDICINE.

MIDWIFERY.

MEDICAL JURISPRUDENCE.

The examinations shall take place in the week following the completion of the SECOND EXAMINATION. They shall be conducted by means of printed papers and practical tests, and Examiners

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shall not be precluded from putting *viva voce* questions upon the written answers of the candidates, when they appear to require explanation.

The examinations shall be conducted in such order as will be made known annually by the Senate of the University.

In determining the relative position of candidates, the Examiners shall have regard to the proficiency evinced by the candidates, in the same subjects, at the Pass Examination.

Candidates who pass the examination, and acquit themselves to the satisfaction of the Examiners, shall be arranged according to the several subjects and according to their proficiency in each; and candidates shall be bracketed together, unless the Examiners are of opinion that there is a clear difference between them.

If, in the opinion of the Examiners, sufficient merit be evinced, the candidate who shall distinguish himself the most in Physiology and Comparative Anatomy, the candidate who shall distinguish himself the most in Surgery, and the candidate who shall distinguish himself the most in Medicine, shall each receive a Scholarship of Forty Rupees per mensem for the next two years, with the style of UNIVERSITY MEDICAL SCHOLAR Only one such Scholarship shall be tenable by the same candidate.

Under the same circumstances, the first and second candidates in Physiology and Medicine shall each receive a Microscope of the value of One hundred Rupees. In the event of the successful candidate having obtained a Prize Microscope at the First Honor Examination, he shall obtain a Prize of Books of the same value. The first candidate in Surgery shall receive a Prize of Surgical Instruments of the value of One Hundred Rupees.

Under the same circumstances, the candidate who shall distinguish himself the most in Midwifery shall receive a case of Midwifery Instruments, and the candidate who shall stand first in Medical Jurisprudence shall receive a Toxicological Cabinet of the value of Hundred Rupees.

The examination for the Degree of Doctor of Medicine shall take place once a year and commence on the first Monday in December.

No candidate shall be admitted to this examination, unless he have produced certificates to the following effect:—

Of having attained the Degree of Bachelor of Arts in this or any other University and of having been engaged two years in the study or practice of his profession subsequent to his having taken the Degree of Licentiate in Medicine and Surgery in this University, or a Degree in Medicine or in Surgery at a University, the Degrees granted by which are recognised by the Senate of this University.

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Certificates of Moral character, signed by two persons of respectability.

The examinations shall be conducted by means of printed papers and *viva voce* interrogation.

Candidates shall be examined in the following subject :—

MEDICINE, *including* PRACTICE OF PHYSIC, SURGERY, AND MIDWIFERY.

The examination shall be conducted in such order as will be communicated annually by the Registrar of the University.

On Monday morning in the following week, the Examiners shall arrange in two divisions, each in alphabetical order, such of the candidates as have passed, and a Certificate under the Seal of the University, and signed by the Chancellor, shall be delivered to each candidate.

CANDIDATES who completed their Medical Studies in or before March, 1856, shall be allowed to present themselves for the Degree of Licentiate in Medicine and Surgery and of Doctor of Medicine on producing the Certificates and other documents specified in the foregoing Regulations.

The first Pass or Junior Diploma Certificate of all students of the Calcutta Medical College, who have obtained that Certificate prior to the promulgation of these Regulations, shall be accepted as equivalent to the First Examination Certificate of this University.

Graduates of the Medical College, who may wish to obtain the Degree of Doctor of Medicine, shall produce the Diploma of Graduate of Medicine of the Medical College of Calcutta, and afford proof of having been engaged for five years in the practice of their profession.

The examinations shall be the same as those before specified."

REPORT ON THE COLLECTORATE OF AHMEDABAD.

Bombay Records, No. V.

"THE Ahmedabad Collectorate is divided into seven purgunnas, viz. Duskrohie Ahmedabad, Duskrohie Jetulpoor, Puranteje, Dholka, Veerumgaum, Dhundooka, and Gogo, whose area, amounts to 47,94,876 beegas, equal to 28,17,631 acres. These purgunnas, with the exception of Dhundooka and Gogo, have undergone a revenue survey measurement; the khalsa or Government villages in detail, and the mehwassee and talookdaree villages as regards their boundaries." Mr Fawcett reports that the population of this Collectorate is 5,97,886; that the number

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of villages is 1027; that the city of Ahmedabad contains a population of 91,224, and has an area of 2·24 square miles, the reporter then, having mentioned that each of the above named seven purgunnas is a Mamlutdar's charge, details the sub-divisions of the purgunnas, their systems of police and their improvement under the British rule and proceeds. The net land revenue amounts to about Rs. 9,68,287.

The hilly tracts of the Meywar province terminate, on the extreme North of the Collectorate, from thence the country, towards the South-East and South-West, undulates; these undulations gradually subsiding into a flat open country as we proceed South; the plain is terminated at the extreme South by the hills, probably 700 feet high, of the Gogo purgunna running North and South. There are two principal varieties of soil in this Collectorate, the black soil and the "gorarоо," from "gora" white, this with the assistance of manure and irrigation is very fertile; however, the most fertile soil is that called bhata, a deposit of the Saburmuttee, it is the more valuable because water being found at the depth of a few feet it is easily irrigated.*

The variations of temperature at different seasons are great, the cold feels more penetrating than a hard frost in England, whilst the rains are hot and close. The monsoon is generally very light in Ahmedabad.†

The productions are wheat, cotton, bajree, joowar, gram, sugarcane and rice. Guzerat is famous for its breed of cattle, horses are bred in this Collectorate; sheep and goats are scarce. The reporter describes with accompanying sketches, the plough, the sowing machine, the sumar and the rampru or hatheea, which is a weeding plough or hoe, with the carts in use in the various districts. The tenures differ little from those prevalent in the Bombay Presidency. The report gives a specimen of the various descriptions of the assessment now prevailing these however it is intended to supersede by an annual rate per beega according to the capability of the soil.

Statement of prices of grain in the city of Ahmedabad for the month of March in the years 1838 and 1848 shewing the quantity sold for one Company's Rupee :—

	1838.		1848.	
	Mds.	Srs.	Mds.	Srs.
Bajree, 1st sort, ...	0	24	0	39
———, 2nd sort, ...	0	27	1	0
Rice, 1st sort (kumode), ...	0	21	0	25
———, 2nd sort (elachee),... ...	0	25	0	30

* There is accompanying the report a sketch map exhibiting the locality of the descriptions of soil.

† The register of the thermometer for the last eleven years is given.

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	1838. Mds.	Srs.	1848. Mds.	Srs.
Rice, 3rd sort (seotursal), ...	0	28	0	33
——, 4th sort (sathee), ...	0	29	1	5
Wheat, irrigated, ...	0	24	0	28
———, chosna, unirrigated, ...	0	22	0	26
Mutt,...	0	34	1	10
Mug, ...	0	28	1	1
Ureed,...	0	27	1	1
Gram, ...	0	30	0	31
Dholl,..	0	27	0	22
Joowar, ...	0	34	1	8

For a beega of uwul land sown with bajree and kuthol the outturn is Re. 1-14 on an expense of Rs. 8-8, for the doyum soil it is Rs. 2-4 on an expense of Rs. 10-12, and for the soyum soil the expense being 5 Rs. there is a balance of Re. 1-14. There is no navigable river under this Collectorate, neither any good shelter for vessels between Gogo and Bombay! The vessels employed in the ports are botellas and prows*. The Null is the only lake of large extent it is in most places shallow and muddy, "and abounding with thick impenetrable masses of reed, and is always covered with flights of water-fowls. It is bounded by no perceptible bank; and the country that borders on it is a dreary desolate flat, covered with vegetation of the rankest and most unwholesome nature." One other lake called the Boke is worthy of mention. "There are no canals of any sort in this district. All inland traffic is carried on by carts, camels, bullocks, and asses." Numerous old tanks exist throughout the country many of them far away from villages; the construction of wells is a subject which has frequently drawn the attention of Government, "and every encouragement has been held out to the ryots to build new wells and to repair the old. Numerous wells are to be found in the bounds of almost every village, but a great number have fallen in. The interior works in many are found entire, and in years of famine many are re-opened, and the lands in the neighbourhood irrigated." Irrigation is carried on to great extent in raising the superior crops of sugar-cane, plantains, barley, &c. Wells are most generally in use for irrigation, the tank irrigation being confined to the early part of the season for bringing the rice crops to maturity, the water for the purpose of irrigation is obtained from the rivers Saburmuttee and Kharee either by a water-course; a dekoree merely a rude frame on which the water bag is worked; or by an arrangement called the jeela.† Gogo is the only place which

* Sketch given.
† Sketch of the jeela given.

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comes under the denomination of a harbour. "The harbour of Gogo affords good anchorage, the holding ground being good; and the locality is protected from southerly winds by the island of Perim, and the reefs extending to the shore on that side of the Gulf. It is protected from northerly winds by sand-banks and the shore is not dangerous, being soft ground, and very strong easterly winds not often occurring." Perim island bears from "the north point of Broach WSW ¼ W., its distance is about 13 miles; and from the western shore it is distant about 4 miles. From Gogo it bears SE., and is distant about 8 miles. Dangerous reefs of rocks surround it, and both the ebb and flood tide set very strong in between it and the mainland. It is consequently of the utmost importance that vessels should keep out of their influence, as they sweep them amongst the dangerous shoals lying between the island and the main." To warn vessels of their danger a light-house has been erected.* "The island of Perim has obtained some notoriety from the number of fossil bones found there: some are of animals of very large size, probably the mastodon; there are also bones of animals still extant, and common; for instance those of hogs, alligators, camels, and turtle. The place where these curiosities are found is far below high-water mark, on the reef at the south side of the island. The place is approachable only at low water. The village on the island consists merely of a few huts for twelve families, who cultivate about 100 beegas with bajree. In the hot weather, they generally leave the island, and live in Gogo till the season for cultivation arrives. Good stones for grinding grain are found here, and the proprietors receive Rs. 5 per 100 from the people who dig them out. On the coast opposite, in the neighbourhood of Gogo, are found red-ochre and fuller's earth." The report gives an alphabetical list by purgunnas of all the villages in the Collectorate with particulars relating to their size, value, tenure, &c.

The chief city in the Ahmedabad Collectorate is Ahmedabad, it is situated in N. latitude 23° 1′ and E. longitude, 72° 42′. There are many fine mosques and tombs still standing, it is surrounded with a good wall averaging 15 feet in height and 4 or 5 feet in thickness with bastions and gateways, it is not a fortified town, the wall being merely intended as a defence against robbers. Since 1843 when the old wall was repaired, a municipal fund has been established, by this fund which was originally formed for the repairs of the wall, roads are made, watered, and lighted at night; arrangements are in hand for the construction of an aqueduct from the river. A town clock is about to be erected, and an establishment

* Sketch given.

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of fine engines maintained. Dholka is situated 22 miles South-West by South of Ahmedabad, it is an open town, has several fine stone built tanks and mosques of the time of the Mahomedan dynasty.

The town of Veerumgaum, situated 38 miles West by North of Ahmedabad, stands upon the banks of the Ruun in the midst of an extensive bare plain; it is encompassed by a brick wall upon a stone foundation, including a circumference of 2 miles and one furlong, flanked with the usual proportion of towers. For the repairs and preservation of this wall the town taxes called gullalputtee have been set aside, the wall now in a good state is sufficient to repel the attacks of any banditti, the town commands the entrance into Kattywar and is the head quarters of a Mamlutdar. The town of Gogo is walled except upon the sea face, voluntary municipal collections are made for the repairs of the wall; roads are in course of construction in the town, other improvements are likely soon to be carried into effect.

The town of Dholera has only lately become of importance, from a mere village it now numbers 6,807 inhabitants. It labours under a great natural disadvantage, the want of good water, it is now dependent upon one tank the water of which is far from good, a municipal fund by name dhurum tulao has been raised having for its object the keeping in repair the tanks on the roads. The town of Bhownuggur, though inconsiderable in a Military point of view is a place of considerable trade. The town of Patree is walled, has a fort of considerable strength though somewhat delapidated, in this fort lives the Thakoor who enjoys the revenue of twelve villages.

The majority of the inhabitants of Ahmedabad, are cultivators; the language spoken is the Guzerattee dialect, but in the towns Urdu is generally understood; the condition of the people is much improved since the time of the late Mahratta government, the native Hindoo population is undoubtedly in better circumstances than the Mahomedans; weaving is very little resorted to as an employment, it being far cheaper to buy English yarn or long cloth than the thread and coarse cloth of the country. The expense for a boy's education is commonly 4 Rs. which payment is spread over the space of two years, the boy however reads no books nor does the school contain one. The reporter gives the number of schools with the course of study. There are many private charitable institutions in the Collectorate under the name of sudawarut. "In Ahmedabad there is an institution called Sultan Ahmed's Lungur Khana, the origin of which is not exactly known. The Government continue to pay the amount of Rs. 2,894-7-3 per annum, which it was found to be in enjoyment of at the British accession. It is continued to

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objects of charity in succession as the pension lapses. In 1846, the number of persons brought to trial, for various offences either against the person or against property, was 3,252, the number convicted being 1,776; whereas in 1848, the number brought to trial was 3,906 number, convicted 2,172.

The whole annual cost of the police establishment, in the Collectorate of Ahmedabad, of all descriptions is Rs. 2,74,113-12-9.

The Officers exercising Penal Powers in the Zillah are :—

1 Magistrate.
2 Assistant Magistrates, Civil Service, one with full powers.
1 Magistrate, Military Officer.
4 Assistant Magistrates, ditto.
1 Ditto ditto Medical Officer.
7 Mamlutdars. (5.)
3 Joint Police Officers, Kotwal, and Foujdars.
5 Mahalkurrees or Thanadars.
2 Landholders.
962 Village Officers.

The report gives a general statement of revenue and police statistics, the strength of the Kolee police corps, and of the Guzerat Irregular Horse.

The manufacture of silk which is principally imported from Bombay is still carried on though its extent of late years has much fallen off. To the report are attached sketches of the Churka, the Pinjun and the Mallet instruments used to clean cloth. The price of cotton with the seed was at Surkey, in January, 1849, Re. 1-14-0 per Indian maund, cleaned cotton was Rs. 7 per Indian maund. About 800 people are employed in the manufacture of paper which is made chiefly from old gunny bags and taut (a very coarse description of sackcloth), in making paper no machine is employed by the workmen all being made by hand, there are five different sorts of paper manufactured, the workmen receiving for the coarsest kind Re. 1-10 per 100 quires and for the best 5 Rs.

The capitalists of Ahmedabad speculate largely in opium, in this mode alone upwards of 50 lakhs are employed at Ahmedabad, about five lakhs are employed in the export of cotton. At the port of Gogo from the tables attached to this report we learn that in 1833-34 there was shipped for exportation opium to the value of 3,17,000 Rs. that in 1846-47, at the same port there was shipped opium to the amount of 15,05,000; the value of the Cashmere shawls shipped to Bombay in the years 1839-40 was 1,45,972 Rs. whereas in 1846-47 the declared value was 10,24,995 Rs. In Ahmedabad the Company's rupee of 180 grains troy is the unit of a tola, 80 such tolas being equal to one seer, a table both of weights and measures accompanies the re-

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port, however though the Sicca Rupee is no longer the standard of weight yet still it is the coin which is most in circulation amongst traders. The banking operations are such as are common in most parts of Bombay, money is advanced upon security, the interest being proportional to the risk. The interest on money deposited with native bankers is 3 per cent. The principal impediments to inland travelling are the monsoon and the rivers, traffic is usually suspended from the middle of June until October. A district dawk was established in 1840 one branch going from Ahmedabad through Dholka, Dholera and Bhownuggur to Gogo with a smaller branch from Dholera to Dhundooka and Veerumgaum, small lines exist between Hursole and Purranteje, Morassa and Byes. The principal source of revenue is the land, the whole net revenue derived from every source, is Rs. 12,98,476.

A SHORT ACCOUNT OF THE CHOOTA TRIBE.

Bombay Records, No. V.

The tribe of Cheotas claims descent from the Soomrahs, their territory in which few traces of antiquity are to be found is situated on both banks of the Hubb, being bordered on the North by the Brahui tribes of Minguls and Khedranees, on the East by the Keertur, Mehee and Mol hills, on the West by the Pubb hills, on the South by the Vehrab on the right bank of the Hubb.* The highest ranges of hills are those of Andharo, and Lakhan, their height being 3800 feet, besides the above ranges are the Pubb, and Keertur, the Bhedoor and Koodoo, both these last are distinguished by their broken and steep sides, there are several minor hills all equally barren and destitute of vegetation. It is to be remarked that between the Gaj Luk and the Southern extremity of Keertur are only four passes namely those of Rohil, Phoosee, Gurho and Kooteh. By the Chootas essentially nomadic tribes cultivation is rarely attempted ; their appearance is any thing but favourable as a reference to the sketches given in the report will shew ; their habitations corresponding with their persons are of the most rude and primitive form† being uniformly constructed of matting or coarse kumlees drawn over a frame work of sticks, and are either rounded in form like the tilt of a waggon or are oblong. The females are generally occupied in attending to

* A sketch map is given.
† Sketch given.

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various domestic matters and in spinning camels' hair or goats' hair or the wool of the doomba.

The character borne by the Chootas, amongst their not over fastidious neighbours, with whom they are constantly engaged in warfare is of the very worst description, their present Chief is Oomed Ali, his income derived from a toll levied on kafilehs passing from Khelat to Kandahar is, during the winter months about 300 Rs. there are numerous traces of bunding, the principal bund is situated near the Bhaloor stream, it is not known by whom this bund was constructed.

REPORT ON THE PROVINCE OF KATTYWAR.

Bombay Records, No. XXXVII.

In A. D. 1807, Col. Walker estimated the population of Kattywar at 19,75,900, exclusive of Babriawar, Jaffrabad and Okhamundul. In 1831, Mr. Blane's census not including the two last districts gave an estimate of 17,59,277. The last census by Capt. (now Lieut. Col.) Jacob gave, for the whole peninsula, under the care of the Political Agent, a population of 14,75,685. This he considers in his Report, as near the truth as our imperfect means permit. The peninsula contains an area of about 22,000 square miles deducting the eastern portion which has fallen under the Ahmedabad Collectorate, the district under the Political Agent contains 20,000 square miles, which gives an average of a fraction under 74 souls per square mile. Only four of the old races namely, the Jetwas, the Choorasamas, the Solunkees, and the Walas, who consider themselves to be aborigines, now exist as proprietors of the soil. The report gives a brief sketch of the past history of the peninsula and proceeds. The peninsula is divided into ten Prants of very unequal size, one Prant containing about 53 villages whilst another contains 942. The surface* of the country is generally undulating with low, irregular ranges of hills. The high land commencing in the N. W. runs easterly to Surdhar, near which it meets a range having Choteela for its highest point, running in a southerly direction and circling eastward beyond Jusdhun. From this high land proceed all the rivers disembogueing in the Gulfs of Kutch, of Cambay and into the Runn. The mountains most important are the Geernar clump. A bold mass of granite rises almost perpendicularly several hundred feet, intersected with irregular lamina of quartz. Its highest peak is 3500 feet above

* Map given in the Report.

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the level of the sea. The Geernar clump must not be confounded with the Geer range. The eastern or the Geernar mountain contains a rock called the Bheroo Jup, from whence until lately devotees threw themselves into the fearful abyss, as a religious act of suicide. The celebrated rock in which the edicts of Asoka, &c. are traced is at the entrance of the valley which leads to the base of the mountain, from the Joonaghur side. The Burda hills near Porebundur are a circular cluster about thirty miles round, the highest point in the north where are the ruins of Goomlee is nearly 2000 feet above the level of the sea. Bamboos grow plentifully on the summit. The Geer, a remarkable formation, consists of ridges and hills covered with forest trees and jungle. Captain Jacob has marched 20 miles within it, without finding room to pitch a Bechova. The Geer* terminates near Dedan in the south-east towards which it narrows. The hills which again rise between Wudal and the Shetroonjee river and sometimes, called the Lesser Geer, are not so called by the natives, they are not so high, much narrower, less wooded, more facile of transit. From Koriar, near Mendurra to Dedan the "distance is upwards of fifty miles in a straight line. From Sursaee in the north, to Ghantwur south, it is near thirty miles. This extensive arena is divided by two main vallies running north and south, into which, from numerous hills and hillocks, pour a vast number of streamlets that create the Singoora and Rawul rivers, which enter the sea near Koreener and Sunikra. The main lines of communication are through these vallies. The Geer has three other roads through it, but no cross communication save by difficult footpaths. The Geer range, can scarcely be said to have any population. During half the year, *i. e.* from the commencement of the monsoon to December, it is dangerous to reside in, owing to the malaria produced by its extensive jungle, and the poisonous quality of its waters. The poor villagers, who are tempted to live on its outskirts, by the favourable terms on which land is there given to them, present a melancholy spectacle in their yellow, cadaverous looks. The Seedee race is the only one which, as on the pestilential coast of Africa, seems exempt from the noxious climate of this district. After the unhealthy months are over, droves of cattle frequent the Geer. Even in the dry season few can drink of its water for many days together without affections of the stomach, and otherwise suffering. The forest trees are chiefly of the smaller kind, but teak is abundant." East of the Shetroonjee rises the Palitana mountain. The Jain temples upon the top of this hill are both beautiful and costly. The transport of every single stone costs a Koree, rather less that a third of a Rupee. The province abounds in rivers, it

* Sketch of Vejulkote in the Geer given.

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is difficult to make a day's march without crossing several. None however except the Bhadur, which is to a certain extent navigable by boats of from ten to fifteen khundees in the monsoon, are navigable. This in the dry season presents only deep pools with a mere trickling streamlet to connect them. The rivers therefore are mere mountain torrents, yet to see the width of many, and the volume of water rolling past, during the monsoon, the stranger would imagine them of much more importance than they really are. Two rivers, the Kharee and Kharndee which enter the Shetroonjee near Krankuch, contain dangerous quicksands. "One of the a striking geographical features of this peninsula are the tracts of country called Runns. That of Kutch, called the Great Runn, completes with the Gulf its northern boundary. The Small Runn commences near the other in the N. E., continuing to the Gulf of Cambay, with which the eastern limits are completed; and, in the N. W. a narrow Runn separates the district of Okhamundul from the rest of the peninsula, except by the connecting link of a narrow bank of sand at Mudhe." There is no English word exactly corresponding to Runn. It is neither a swamp, fen, desert or salt marsh, but a compound of all. In some parts of the Small Runn salt is collected by the villagers, in other parts the bulbous roots of a plant called Bheer abound, which in time of famine are dug up for food. A plant called Theg also grows here plentifully, its roots are bruised and a substance resembling small seed extracted therefrom which is eaten. The modern sub-divisions of the peninsula in their geographical order beginning from the N. W. are :—

I. The province of Okhamundul. This district was conquered from the piratical tribes who possessed it in A. D. 1816 and ceded to the Gaekwar in the Supplemental Treaty, dated 6th Nov. 1817.

"II. *Hallar* comprises the northern part of the peninsula from Meeanee on the west coast to the junction of the Gulf with the Runn of Kutch. It is named after Jam Hala, an ancestor of that branch of the Jhareja tribe which conquered it : it now belongs to different families of this tribe, whose name the practice of infanticide has brought rather prominently to notice. The western part of Hallar is termed Bararee, which is the level portion between the hills, the sea, the Okhamundul Runn, and the Gulf of Kutch. Nowanuggur, the capital of the Jam, and the most populous city in Soorashtra, was founded by Jam Rawul, in A. D. 1540. Hallar is the largest and most populous province of the peninsula.

III. *Muchoo Kanta* is a narrow slip of territory, on either bank of the Muchoo river, belonging to the Morvee and Mallia Chiefs, who are more recently descended from the Kutch family

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than their brethren of Hallar. Mallia is of the Morvee Bhayad. The present Morvee Chief is the eighth in descent from Rao Dhunjee, whose son, Ruvajee, obtained Morvee in A. D. 1677, but was murdered in A. D. 1698 by the son of a younger brother, since which period the younger branch has been seated on the Kutch Gudee, the elder retaining Muchoo Kanta and part of Wagur.

IV. *Jhalawar*, or the country of the Jhalas, unites with Hallar to the southward of Muchoo Kanta, and fills up the rest of the peninsula to its NE. angle, where the Kutch Runn bends to the north; eastward it reaches nearly to the head of the Cambay Gulf. This division includes the petty State of Moolee, owned by Purmar Rajpoots, and the Mussulman one of Bujana, occupied by Juts, whence that district is called Nhanee or Lesser Jutwar. Beyond the NE. angle of the peninsula, though politically included in this division, are the Mahomedan States of Dussara and Wunod, the Kolee one of Jhinjoowara and part of Patree which is under a Koonbee family. These four are in the geographical division of Wudheear, adjoining that of Chowal. The Jhalas are supposed to have been located in the peninsula since the eighth century. The districts bordering on the Jhalawar Runn are named Null Kanta, and Nhanee or the Lesser Bhal. The southern portion of Jhalawar is termed the Burwala Purguna, from the town of that name, and is now under the Ahmedabad Collectorate.

V. *Gohelwar*, or the Province of the Gohels, fills up the remainder of the eastern frontier. The Gohel Rajpoots were driven out of Marwar by the Rahtors in the end of the twelfth century, and acquired their footing in the peninsula chiefly by intermarriage with the Choorasama family of Joonaghur. The Raja of Bhaonuggur, who has dropped the title of Gohel for that of Rawul, is descended from the eldest son of Sejuk, and is the principal Chief in Gohelwar. Bhaonuggur was founded by Bhao Singhjee, in A. D. 1743, but having fallen under the Ahmedabad Collectorate in virtue of our conquests from the Peshwa, the situation of the Thakoor is less independent than that of the other Chiefs of the peninsula, who have their capitals removed from that jurisdiction.

VI. The small district of *Oond Surweya* is imbedded in Gohelwar, it being merely the strip of land on the banks of the Shetroonjee river northward of the Wullak hills. Oond implies low, the district being confined to the level country on either side the river: it contains only thirty-three villages, of which six have fallen under Bhaonuggur." It is interesting as containing the remnants of the Rajpoot tribe which formerly ruled in the peninsula.

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"VII. *Babriawar* or the Country of the Babrias.—This province adjoins Wullak, having the Jholapooree and Malun rivers for its boundaries east and west, and reaching from the sea to the Geer hills. The proprietors of land are Babrias (commonly, though erroneously, called Babria Kattys) and Aheers. The Babrias class themselves under seventy-two tribes." The port of Jaffrabad in the centre of Babriawar is one of the best in the peninsula, and affords shelter for shipping throughout the monsoon.

"VIII. *Soruth.*—This province adjoins Babriawar to the west, reaching along the sea coast to Madoopoor, and inland to the Bhadur river, where it meets Hallar, and with it encloses the sea-board district of Burda, and completes the circle that constitutes Kattywar a central province. Soruth contains some minor geographical divisions, viz. the Bhadur and Nolee Kantas; the Geer—the Larger and Lesser Geer; the Larger and Lesser Nagher." The report gives the history of this province.

IX. Burda is a narrow strip of land between Madoopoor and Nurvee, after passing the Bhadur it does not reach in land 20 miles at the widest point. The port of Porebunder, is the best on the west coast though by a bar of sand at its mouth somewhat obstructed.

"X. *Kattywar.*—This large central province is named after the Katty proprietors of the soil, of whom the three chief tribes are the Wala, the Khachur, and the Khooman; these tribes, termed Shakhaeet or noble, are sub-divided into twenty of the first, seven of the second, and ten of the third, in all thirty-seven: and there are ninety-three tribes of Ehwurutias, or ignoble. Kattywar is divided into five districts, viz. Punchal in the north-east, Khooman in the south, and the three intermediate ones of Wussawar, Kharapat, and Alug Dhananee. The first is celebrated for its breed of horses, and is chiefly occupied by the Khachur tribe. The Kattys are evidently a Northern race; their stature, features, above all their blue and grey-coloured eyes, by no means unfrequent, give much probability to the idea that they are of Scythian descent, with which their habits in some degree correspond. The Sun is their chief deity; its symbol is drawn on every deed at the head of the list of living witnesses, with the words *Sree Sooruj Nee Shakh.*"

The number of separate jurisdictions* was formerly 292 of which 80 have been absorbed, "chiefly by the Gaekwar's encroachments in Kattywar, but also by acquisition of territory on the part of the Jam of Nowanuggur, the Thakoor of Bhaonuggur, and the Chief of Jusdhun: the number now paying tribute to the British and Baroda Governments is 212. Some of these

* Statistical Tables are appended.

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pay only to one, but many also to both." The British share of the tribute amounts to Rs. 7,14,660-13-4. The total revenue of the peninsula is 11,83,643-13-11. The above sum is about one-fifth of the annual rental which is estimated at about sixty lakhs of Rupees. The tribute presses on some States severely. The basis of the permanent settlement was to take things as they were, and to prevent their getting worse. Twelve States pay no tribute. There are now therefore 224 separate jurisdictions, but this number faintly portrays the real amount of existing sovereignties. The establishment of the various tribes in the peninsula was by the sword. Much however of their territory was gained by the weaker landlords writing over their Geeras to whomsoever they thought best able to protect them. With these exceptions the tenure on which all the Chiefs hold their possessions is that of absolute sovereignty. The Chiefs bequeath portions of land to their sons or to religious characters. Each plough pays a certain sum called Santhee Weera, generally a Santhee of land contains three Prajas, a Praja 30 Beegahs and each Beegah a square of 45 yards. The cultivators prefer taxes in kind. Two-fifths of the produce are realized by the cultivators, one-fifth is the expense of tillage, and one-fifth is tax paid to the Chief. The artisans and shopkeepers are taxed. The most striking tax is "wet" or service paid to the Chiefs without payment. The Chief is a despot but if he attempt too grossly to interfere with the rights of the ryots, they desert him. Of Civil and Criminal law the people have no idea. Each caste manages its affairs by Punchayets. Fines are almost the sole penalty. Capital punishment is rarely inflicted. Few of the Chiefs can read or write. In every town some small provision is made for schooling but wretchedly inadequate. Government pay two Pundits at Rajkot and about 50 pupils attend, but their parents withdraw them so soon as they have learnt the rudiments of arithmetic. The Braminical priesthood have little if any weight in the country, there are no colleges for their education. The Nagur community of Bramins is very powerful in the peninsula. The Meeanas from Kutch, who have obtained land at Mallia, a formidable race of plunderers, are now restrained by the Gaekwar. The people most likely to disturb the peace of the country are the Mukranees; all these, soldiers by profession are ready to commit any crime for money. Rajkot seems to have been selected for the residence of the British force and of the political Agents' establishment from its central situation, and from the abundance of forage in its vicinity. The Gaekwar's Contingent of Irregular Horse furnishes Thanas for the protection of the line of trade along the eastern frontier. The report after detailing the religious habits and customs of the Kattys enumerates

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the best Bunders, of the peninsula from which traffic is usually carried on, which are. In the Gulf of Cutch, Jooria Sulaya, and Wuwania: on the west coast Porebunder and Bilawul, a good deal of cotton is exported from Mangrol though its port is little better than an open roadstead. On the South Diu, Jaffrabad and Mowa. In the Gulf of Cambay, Gogo, Bhaonugger and Dholera. The chief trade of the country, is with Bombay, the chief export is cotton. The imports, are bales of cloths and piece goods with various European manufactures, wood and cocoanuts from the Malabar Coast, ivory and spices with dates, rice and oxen. Iron is manufactured from native ore found in the Hallar and Burda to the extent of about 100 tons annually. Copper and gold are found. There are mineral springs. Cotton is the grand staple of the country, it is estimated that 2,67,606½ India muns* are grown of which about half is exported. Wool has become of late years an article of export, its quality with the excellent pasturage of the country might repay a European speculator. Bajree is the chief article of food. Sugarcane is grown all over the country. Goor is alone manufactured. The Kattywar breed of horses has long been celebrated in India. The breed has however deteriorated and will, unless preventive measures be taken, become comparatively worthless. There are cows, buffaloes and a small kind of camel. The animals found in Kattywar which are not found in other parts of India are lions and armadillos. One of the most striking peculiarities of the peninsula are rats. They appear at intervals in great myriads. A famine was caused by these creatures in the year 1814-15, it is still called Oondrio Sal or the Rat Year. The manufactures now existing are suitable only for the inhabitants. Linen seems unknown. The carpenters, blacksmiths and stonemasons are equal to any in India.

There are three mints in the country where silver is coined. The Dewan Shaee Coree of Joonaghur, the Jam Shaee of Nowanuggur and the Rana Shaee of Porebunder. The art of painting is unknown. Printing and lithography have no existence. Good matchlocks, swords and daggers are manufactured.

There are no roads or canals in the country, the soil permits of good natural roads, and the drainage prevents even the black soil from interfering with the monsoon communication. "This peninsula contains in itself the elements of natural strength. Its geographical position and numerous ports point it out as the connecting link between Africa, Arabia, Persia, and the Indian continent: its soil is productive, especially Soruth and Kattywar. The Geer forests produce timber for building, and abundance of fuel. Iron might be worked to any extent, as the ore

* Vide Appendix.

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abounds. The horses and cattle are of good description, and no country possesses greater facilities for internal communication; but under the rule of semi-barbarian Chieftains, it may be termed a giant asleep. A languid circulation goes on sufficient to preserve existence, but otherwise there are no signs of life."

The Appendices have been summarized in the body of the report. "The connection between the Company's Government and the Chiefs of Kattywar commenced in the year 1807-8, when, in consequence of the inability of the Gaekwar administration to recover their revenue, and the state of anarchy and confusion to which the province had been reduced, the interference of the British Government became necessary as a matter of policy, and was desired by the Gaekwar, to enable him to realize his annual tribute." We concluded engagements with the Chiefs guaranteeing to the Gaekwar government the punctual payment of the revenues, we charged ourselves with the collection of the tribute and maintenance of the general peace of the country reserving our share of the revenues as successors of the Peshwa and securing to the Gaekwar Government their rights. The Gaekwar government promised, the punctual payment of the revenue, determined, to refrain from depredation and mutual aggression, to relinquish piracy and to discontinue the inhuman practice of female infanticide. The report after enumerating the ten Prants into which Kattywar is divided gives the principal features of every estate with the name of its Chief and exhibits in a tabular form miscellaneous information connected with Kattywar. Lieut. J. Macmurdo, in a memoir of the province, divides it into nine districts omitting the district of Oond Surweya, which he includes in Gohelwar and proceeds. Jhalawar derives its name from the Jhala Rajpoots who are its principal Zemindars, it is one vast flat with a slope towards the Runn. There is a want of wood; of brush wood there is a good deal crowning a range of rising ground which appears to run in a North West direction from the Thaun hills to the Runn with which it afterwards runs parallel as far west as Halvud. This range is never very broad, two miles at most, and is incapable of cultivation. The soil of Jhalawar is sandy with slips of rich black soil. The water is contained in wells and tanks, the wells are with few exceptions brackish in the months of April and May, and the tanks are generally dry in those months. There are a few rivers and these are salt with sandy banks. They are the Bhogawa, the Bambun and another which passes Drangdra, all these flow into the Runn. The roads lead on sandy ridges and are throughout the province good. The prin-

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cipal town is Drangdra, the water of which is bad. The staple produce is wheat of which it sends great quantities to Guzerat. The horses on the river Bhogawa are adopted for native Cavalry. The cultivators of Jhalawar being chiefly Koonbees, the district is peaceable and orderly. The Northern parts of Kattywar are mountainous. The soil throughout is stony with a light red earth, and has little variation if we except those parts on the Bhadur river where the soil is rich. The stony soil is adapted for Bajree and Jowaree which are the staple produce. Kattywar has two large rivers both of which are named the Bhadur. They rise on two opposite sides of a hill not far from Jusdhun. The roads partaking of the soil, are stony but extremely good at all seasons. The chief town is Jetpoor situated on the Bhadur. This district yields little else than Bajree and Jowaree. The Kattys breed vast herds of cattle. Almost every village in the district has from two to four hundred goats and sheep with cows and buffaloes in proportion. The inhabitants are of those predatory habits common to all nomadic tribes. If not kept in strict awe they are inclined to plunder.

Gohelwar is so called from a caste of Rajpoots. It is a flat country with a great want of wood. The soil is not quite so rocky as that of Kattywar and is equally fertile in the same kinds of grain. The roads are hard and level, heavy rains alone obstruct a free passage. Bhownuggur, a sea-port, is the chief town. It is a great mart to Bombay. The inhabitants resemble the Kattys.

The name "Muchoo Kanta" implies the country on the bank of the river Muchòo. The soil is extremely rich and fertile producing vast crops of Jowaree. The principal town is Morvee. The country suffers deplorably from its want of inhabitants.

Hallar is the name of the tract stretching between the river Ajee and Kumballia. There are ranges of hills with extreme plains destitute of wood. The soil is various, that near the sea being of a rich black nature whilst that in land is light and gravelly. The country is remarkably well watered. Every village has a stream of excellent water. The rivers are the Ajee, the Ound and the Rungmuttee and Nagvee which unite. The roads are good though not much used. Nowanuggur is the capital, it is a sea-port, large, populous and flourishing. Hallar might afford supplies to a great extent, there are large flocks of sheep and goats. The natives are by no means troublesome. Soruth was the name by which the whole country was known to the Mahomedans, it is the tract lying in the neighbourhood of the Joonagur hills. It is one

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flat fertile plain watered by the Bhadur river and numerous lesser streams. It is well wooded. The soil is of that black rich kind fitted to produce anything, and unfit for military movements during the monsoon. The water is of a very superior quality. The chief place in the district is Joonagur. The chief productions are Bajree and Jowaree. Of goats and sheep there is no lack. The great body of the people are Koonbees therefore the province is quiet. Babriawar takes its name from the Babria Kolees who inhabit it. It is almost the only hilly part of the province. The timber, soil, water, and roads are bad. It is thinly inhabited and has no towns of any importance.

Jetwar or Burda is flat but has a range of hills running north and south. The water is brackish and when not so is unwholesome. The soil is a light earth over a sea rock. The river Mensur flows into the Bhadur river, its waters are prejudicial to health. There is no road for carriages.

Okhamundul consists of the point of the peninsula on the North-West, and is cut off from the main land by a back-water or Runn, in some parts dry, except during the rains. The inhabitants are semibarbarous and thievish. It is covered with jungle with no cultivation. Here is a harbour where the heaviest ships lie in safety in all weathers, it has however a dangerous entrance.

The first three months of the year in Guzerat are distinguished by peculiarly thick fogs. The hot weather sets in in April and continues until the rain falls in June. From the end of September the climate takes a change uncongenial to the health of both foreigners and natives. The climate is in general pleasant. In the hottest weather the thermometer is seldom above 110° in the tent. In the cold season it is never below 42°. The convenience of carriage which this peninsula affords is confined to carts. Pack bullocks are unknown. Timber can be had from Gogo and Bhownuggur. The circumstance of a permanent camp being established in this province will be a source of pleasure to all the industrious and valuable part of the community.

The Runn which separates Kutch from Kattywar, has at different seasons the distinct appearances of a sandy desert, a muddy swamp and a wash. The word Runn or Erun signifies a waste tract dangerous to travel. The Runn is connected with the Gulf of Kutch on the west and with the Gulf of Cambay on the east, which being joined in the monsoon forms the peninsula of Kattywar into an island, the access to which however is never entirely cut off. The different passes of the Runn are seven in number. The first pass may be styled the Mallia. It is the narrowest of all and is entered at a large tank called Nowa Tulao. This pass is overflowed by water from the Gulf if

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the full and new moons are attended with a strong west wind. Under the most favourable circumstances it would not be prudent to calculate upon the pass being open until the middle of December. The next pass is the Chickly, it is by no means a convenient pass, on account of the distance from water to water. There are quicksands in the pass. About six miles to the east of Chickly is the Venasir pass. This pass is accessible to carriages from the 1st of January until the 15th March. And to horse and foot at all seasons. The fourth pass is the Ghatilla pass, it is at no time very accessible to carriages. The fifth pass is the Tekur pass which lies four miles east of Ghatilla, this pass is more frequented than any other except the Mallia, it is open to carriages from the 15th of January to the 15th of April. Infantry can travel at all times but the distance is too great for horses to travel through mud and water. The Dehgaum pass is the sixth, about 14 miles to the east of Tekur. The pass is open until the beginning of the monsoon, but is only fitted for travellers. The last pass is the Potree pass, it lies 14 miles to the east of Dehgaum. The breadth of the Runn is here about 2 and ½ miles. This pass has no mud at any season and is crossed throughout the year by carts. The boundaries of the Runn are as distinctly marked as those of the sea. They consist of a low rising bank covered with vegetation, distinct from the barren sand of the Runn. The banks are nowhere higher than sand hillocks. Upon the Runn itself there is not a blade of vegetation. In October and November the Runn is covered with a sheet of salt, foot passengers can travel over, but horses sink deep in the mud. In the rainy season the Runn is full of water about knee deep. In April and May during the west winds the Runn is covered with a cloud of red dust. The Runn cannot be traversed in safety during the day excepting in the rainy weather, to traverse the Runn at other times, after 9 A. M. and before 3 P. M. is almost certain death. Wild asses found nowhere else in India, are found in the Runn in great abundance. From Patree to Meetapoor the Runn now called Null Kanta changes its appearance, its boundaries being no longer well defined. A loamy soil succeeds to a sandy waste. At Meetapoor the Runny appearance is once more observed. In the fair season it is only a sandy space a few hundred yards in width, lives are often lost in attempting to cross in the rains. After lists of fortified places in Kattywar, the report contains tables giving information relative to the wandering tribes. Lieutenant J. Macmurdo observes in a historical sketch of Okhamundul, that the word Okha signifies any thing bad or difficult and Mundul is a word applied to any district of a country. The historical frag-

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ments of this district can be traced so far back as (A. D. 1054). The Chowra Rajpoots where then the legal sovereigns of Guzerat and a family of this tribe were the last Rajas who reigned in Peeran Puttun. The history proceeds to the year (A.D. 1462) when the country was conquered by Sultan Mahmood Begurah. The soil is generally light and red of no great depth. The rock with which Okha abounds is much impregnated with iron ore, there are extensive tracts called Wudh for grazing camels of an inferior kind. The shore abounds in shell-fish, the jungles in quail, partridges and hares, the Babool affords an endless supply of charcoal. Captain Jacob in his brief memoir of Okha states that the Runn which almost makes this district, an island is 15 miles in length at its mouth in the Gulf of Kutch and about five miles broad, it narrows towards Muddee where it is one mile broad and is there separated from the sea by a narrow bank of earth and sand. Fossil organic remains are found at Bater and the shells thrown up are famous throughout India, the memoir contains statistical tables. In a report, bearing date 1843, of the Babriawar district; Captain Jacob affirms that the soil is good, the indolence of the inhabitants alone preventing them from turning it to account. He enumerates the several tribes of this district and gives a short historical sketch of their origin and habits. Captain Jacob submitted a report on the iron of Kattywar in February, 1838. Iron ore is found chiefly in the north west quarter of the peninsula. "The smelting* process is very simple. An oblong shed gives a scanty shelter to the workmen during the dry season, and during the monsoon the manufacture is suspended. The ground inside is dug away in the centre to give room for two furnaces, which occupy the ends of the shed. They are long and narrow, to give good draught, and the masonry or brick work lined with clay, to keep in the heat. The opening for the bellows is stopped by a bit of plank protected with clay, into which fits a pipe connecting the nozzles of the two pairs of bellows; these again are stopped afresh with clay each time the work commences."

The expense of smelting 15 muns of ore is 33 korees including the tax of 2 korees levied by the Nuggur Durbar. Fifteen muns of ore produces about 6 muns of iron which sells for 48 korees, the profit is thus 15 korees or Ahmedabad rupees. The amount of iron manufactured annually in Kattywar is about 150 tons. Although Kattywar possesses ample capabilities for the production of iron beyond its own wants, yet the English metal drives it out of the market.

The report closes with an account of the introduction of vac-

* View of furnace given in the Report.

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cination and the several treaties which have been concluded with the Peshwa and with the Chiefs of the several districts of Kattywar.

TRANSACTIONS OF THE GOVERNMENT OF INDIA.

For 1855-56.

The Home Office reports that by a Resolution, dated 27th July, 1855, all orders affecting the Chaplains and Civilians of the Bengal Presidency as Services must emanate from the Government of India. It has been recommended that the number of Civil Servants should be raised to 600, and the Court while requesting fuller information, have sent out 50 odditional servants. It has been arranged that no persons should obtain an independent charge, or even the powers of a Covenanted Assistant until he has passed an examination in the vernacular, in his special duties, and in ordinary education. All officers are directed as a rule to select their Ministerial Agents by examinations. Insolvency has been declared a sufficient cause of exclusion from the Public Service. The allowance of Rs. 200 a month to each of four Roman Catholic Bishops has been doubled. A priest is retained for every European Regiment, and a second at every station where there are two or more Regiments, other privileges have been granted to the priests. The Rajah of Khoordah has been informed that he would from 1st May, 1857, receive an endowment in land to the value of Rs. 16,517 a year in lieu of all payments to the temple of Jugunnath. From that date the official connexion with the temple will cease. It has been resolved to erect on the Neilgherries a central prison for all European convicts in India. An Editor's room has been established at each Presidency. The G. I. P. Railway Company has been informed that Government has the power to compel them to run Mail trains, and to carry the mails gratis. The E. I. R. Company has also been informed that Goverument would soon require a quick Mail train.

The Military department reports that the experiment of establishing Soldier's Gardens was suggested in 1854 by Sir W. Gomm. They were established accordingly at Peshawur, Meean Meer, in 1854, also Lord Dalhousie established them in Pegu with a separate establishment to take care of them.

The Financial Department report, that a new system of accounts has been established in the Public Works Department, in the Post Office, in the Pay Department, in the Stud Department, in the Commissariat and Ordnance Departments and in the Clothing

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Agency. All Zillah accounts have also been centred in the Collectors' offices. New rules have been established for preventing fraud in the Pension Department. The accounts of the Government of Bengal have been separated from those of the Government of India. The accounts forwarded to the Home Authorities have been accelerated by twelve months. "While the Report on the Sketch Estimate of 1855-56 was submitted to the Court on the 22nd October, 1855, the Statement of Receipts and Disbursements for 1854-55 was despatched on the 19th of February last, and the Regular Estimate for 1855-56 on the 18th of March following." It has also been determined to forward every year an elaborate review of the financial position of the country. Preparations have been continued for closing the Government Agency, and Rs. 6,76,07,000 were withdrawn by 1st May, 1856. The operations of the year in the Mint were very extensive, and the amount of merchants' bullion delivered was Rs. 4,53,62,595.

The establishment was consequently increased, and Col. Smith, Mint Master raised the delivery by April, 1856 to 3½ lakhs of pieces a day. The establishment is to be further increased so as to deliver on an emergency 4½ lakhs of pieces a day. The Court of Directors has been also asked for permission to set up a special machine for the coinage of copper, and in the meantime to send out copper ready rolled, with 12 hand cutting Presses. The Assay Office in Pegu was abolished on 30th April, 1856.

The profits of the Bank of Bengal have been very high during the year averaging 18 per cent. The demands on the Bank have been great for subscription to the loan, and for the transmission of specie to Arracan to purchase rice. The export for this purpose is supposed to amount to 80 lakhs of rupees. The Bank has agreed to publish weekly statements of its assets and liabilities, and commenced the Agency business abandoned by the Government of India. On 15th March, 1855, Mr. H. Ricketts was appointed Commissioner for the Revision of Civil Salaries and establishments throughout India. His duty is to equalize salaries and duties, all over India, and reduce as far as possible the aggregate expenditure. A code of rules for uncovenanted service leave has been published. The Government, desirous to increase the production of opium had raised its price gradually to Rs. 3-10 a seer. In 1850, the restrictions as to extent of cultivation were taken off, and the production increased rapidly. It was soon found that from a fall in price in China the aggregate profit was reduced by the extension. The price paid to the cultivator was therefore reduced to Rs. 3-4 a seer thus saving 9¼ lakhs a year.

Bombay requires water-works. The Government of India agreed to advance the necessary capital, provided the Municipality of

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Bombay would pay interest at the rate of 4 per cent. One per cent. more was to be paid for a Sinking Fund to liquidate the debt. The Municipality consented, and the orders were issued.

The Public Works Department reports that in 1850 a Commission was appointed by the Court of Directors in each Presidency to enquire into the subject of Public Works. The Bengal Commission submitted their Report in March, 1851. They expressed an unanimous and strong conviction of the utter unfitness of the Military Board for the superintendence of Public Works, whether Civil or Military, and they pointed out the mischief and inconvenience which would of necessity result from the attempt of such a body to control and direct the Department." It had too much work. They recommended

"*First.*—That the control of the Department of Public Works should be taken from the Military Board and vested in Provincial Chief Engineers.

Second.—That each Provincial Government should exercise control over Public Works, Civil and Military, in its respective Provinces, under certain limitation of powers in respect to the sanction of new projects.

Third.—That the Chief Engineers should be assisted by Superintending and Executive Engineers.

Fourth.—That the separate Office of Chief Engineer, as before constituted, should be abolished."

The Madras Commission recommended that the three-fold control exercised by the Board of Revenue, the Superintendent of Roads and the Military Board in this department should be abolished "and replaced by a Board of Public Works, which they recommended should consist of a Revenue Officer of the Civil Service and two Officers of the Corps of Engineers, and which should have the entire control and direction of all Public Works, Civil, Military, and Miscellaneous, throughout the Presidency." The Bombay Commission recommended the retention of the Military Board. It was finally arranged that the recommendations of the Bengal Commission should be extended with modifications all over India. A new Secretaryship to the Government of India was therefore created on 7th February, 1855. A system was introduced of submitting all projects in tabular statements. The statements are submitted annually under the following heads :—

"1. Works of magnitude requiring the sanction of the Government of India or of the Honorable Court.

2. Works already sanctioned, but not completed.

3. Repairs and contingencies."

An Annual progress report will also be furnished and printed. The powers of the Supreme and Local Governments with respect

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to new works have been enlarged. The Supreme Government can sanction up to Rs. one Lakh, and the local Governments to Rs. 10,000. "A detailed scheme for the management of the Department and for the Offices of Account has been prepared and embodied in a General Order." An Engineering College has been sanctioned for Calcutta, and Madras. A Civil Engineering School has been established for three years at Lahore, and a similar institution at Poona will hereafter be merged in the Bombay Civil Engineering College. Arrangements have been made for securing a great number of apprentices and subordinate officers for the Department. A Committee has been appointed to consider the project of bridging the Hooghly at or near Calcutta. Its report has been submitted to Government. Measures are in progress for "completing the Bridges over all the rivers that cross the Grand Trunk Road except the Soane and the Ganges." And a line of road through Jessore to Burmah, and another through Balasore and Cuttack to Madras have been designed. "On the general question of Roads in the Ganges Valley, it has been decided that those which are calculated to bring the several Districts into communication with the Railway should first receive attention." The great Deccan Road, the Agra and Bombay Road are to be improved. Secondary roads have received attention. "The continuation of the Grand Trunk Road through the Cis-Sutlej States towards Lahore, and its further extension to Peshawur, have occupied the attention of Government." The Hindostan and Thibet road has advanced, and is open from Simla to the plains. It has been determined to widen the embankments on the right bank of the river Damoodah "so as to allow the surplus flood waters to flow free over the country, between the Damoodah and Roopnarain Rivers." This measure however is only temporary, and a scientific enquiry has been ordered. A project for irrigating Shahabad and Behar, suggested by Captain C. H. Dickens, has been strongly recommended to the Court of Directors. Efforts have been made to control the Mahanuddy and the Bassein branch of the Irrawaddy which periodically inundate the districts near their mouths. The works in completion of the Ganges Canal are steadily advancing. Rs. 15,25,000 are to be extended on the noble system of internal navigation connected with the Godavery and Kistna anicuts. The harbours of Coringa and Coconada are to be improved. A new Post Office in Calcutta is to be erected when the design, to be prepared by an Architect in England, has been received. A design for the Calcutta Presidency College is now under revision. It is in contemplation to fix a standard plan for European barracks, and "designs have also been called for of School Rooms adapted to the improved system of education for European Troops serving in

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India, as also of Bakeries and Slaughter Houses, of Fives' Courts, Skittle Alleys, &c." The expenditure is thus displayed :—

"For Punjab,	... ...	44½ lakhs.
„ Scinde,	.. ..	24½ „
„ Madras,	... ...	10 „
„ Bombay (exclusive of Scinde,)	...	6¼ „
„ North Western Provinces,	... ..	5 „
„ Bengal,	.. ..	3 „

The subject of Railway communication in India, was first laid before the Supreme Government by Mr. R. Macdonald Stephenson, in 1843. In the end of 1851, a line was surveyed and reported on, between Burdwan and Rajmehal, and an extension of the Railway Company's Capital by £1,000,000, was sanctioned for the purpose of executing this line. In the cold weather of 1852-53, a line was surveyed from Rajmehal to Allahabad, and reported on, and in April, 1853, the Governor General's celebrated Railway Minute was recorded, and the construction, by the East India Railway Company, of a line from Burdwan to Delhi, were soon afterwards sanctioned by the Hon'ble Court, and interest was guaranteed on a capital of £9,000,000, inclusive of the £1,000,000, already sanctioned for the Rajmehal extension. The direction of the line from Burdwan to Allahabad having been previously approved, that from Allahabad to Cawnpore was sanctioned in June, 1854; from Cawnpore to near Agra, in December, 1854; and thence *via* Agra, and Muttra to Delhi, in November, 1855. From Howrah, to Pundooah, thirty-seven and a half miles, the Railway was open for traffic on the 15th August. The official opening of the whole line to Raneegunge took place on the 3rd February, 1855. In 1849, the Great Indian Peninsula Railway Company entered into a contract with the Hon'ble East India Company, for the construction of an experimental line, 35 miles long, calculated to cost £500,000 to form part of a trunk line connecting Bombay with Kandeish and Berar, and generally with the other Presidencies of India. The first section of the Bombay line was opened to traffic on the 16th April, 1853. The fourth section of the line was opened to traffic to Wasindree in October, 1855. The Hon'ble Court have now sanctioned the extension of this line through the valley of the Nerbudda, to meet a line from the Ganges valley to Jubbulpore." A survey has been ordered from "Baroda, or Ahmedabad, to Agra, or Delhi, and from Broach, by the Tirella Ghat, to Agra." In 1855, the Court of Directors sanctioned the construction by the Scinde Railway Company of a line from Kurrachee to some point on the Indus. Jerruck is to be the terminal point.

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REPORT ON THE MADRAS PRESIDENCY.

For 1855-56.

The Madras Presidency contains an area of 1,36,872 square miles, with a population of more than 2,20,00,000. This population speaks five languages. In 1855, there were only 100 European functionaries among this population. "The following are the tribunals established for the redress of Civil injuries: the Sudder Court in suits above Rs. 45,000; 20 Civil Judges in suits above Rs. 10, 000; 9 Subordinate Judges and 12 Principal Sudder Ameens in suits under Rs. 10,000; 23 Sudder Ameens in suits under Rs. 2,500; and 126 District Moonsiffs in suits under Rs. 1,000 in value. The Sudder Court is the tribunal of ultimate appeal in suits below Rupees 10,000; but from their decrees in suits above that sum, an appeal lies to Her Majesty in Council. There are also 3 Government Agents, with 6 Assistants, having jurisdiction in suits above Rupees 2,500 in value. In Combaconum there is an Assistant Judge appointed to hear appeals from the decisions of the district Moonsiffs." The suits instituted are like suits every where else, but suits about land are almost confined to the districts in which land has a saleable value. In Canara disputes about succession are frequent, property descending through the female line. The son inherits not his father's property but his uncle's through his mother. "The effect of this is to foster combinations between father and son for the purpose of disinheriting the nephew by alienating the property during the father's life time, on the asserted ground that it is self-acquired and therefore not subject to the above Rule; while it is the object of the nephew to show that it is ancestral and thereby to prevent such alienation." The entire number of Civil Suits has been 88,635. "Many of the judicial officers employed in redressing Civil or private wrongs are likewise engaged in the punishment of public or criminal injuries. Criminal justice is administered by the Foujdaree Udalut, 20 Session Judges, 9 Subordinate Judges, 12 Principal Sudder Ameens, 20 Magistrates, 18 Joint Magistrates, 39 Assistant Magistrates, and 304 Heads of Police, and Police Ameens. For the punishment of trivial offences, the heads of villages are also vested with police powers, and under the provisions of Act No. XII. of 1854, three district Moonsiffs are exercising criminal Jurisdiction." The proportion of criminals to the population is one in 436.

The Police of the Presidency consists of the stipendiary and

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the Rural Police. "The officers comprised under the Stipendiary Police are heads of Police, Sub-Police Officers, Police Ameens, Jemadars, Duffadars, and Peons." The Heads of Police also act judicially, and in that capacity are efficient. "The Subordinate Police Officers are only authorized to take cognizance of heinous crimes, and to apprehend and forward the parties to the Heads of Police with the record of their proceedings." The Police peons often neglect their duties, are underpaid, and therefore extortionate. In "Malabar there is a regularly trained and disciplined Police corps, commanded by commissioned Officers; there are likewise local corps for Police purposes in Vizagapatam and Ganjam, and those in the latter district are being augmented." The Rural Police trace out crime, and from their local interests, and local knowledge are usually efficient.

When the Inspector of Prisons took charge of his office he found the prisoners better off than free men. There was no classification. The system of out-door labour opened the way to every abuse. There is no system of task work and the labour performed is not penal. The sanitary condition of some jails is so bad that they cannot be retained. It is recommended that four division and one central Jail be established. All prisoners condemned for seven years and upwards should be sent to these prisons. Prisoners should be made after a time to work under the executive officers while the internal arrangements of the prisons should be managed by Europeans. "The total number of convicts in all the Jails, remaining at the beginning of the year and admitted during it, amounted to 11,695, of whom 5,965 remained at the close of the year; but when it is remembered that 52,745 were in one year supposed to be implicated in reported crimes and misdemeanors (irrespective of petty offences), and that 21,726 were said to be implicated in cases involving grave injury to person or property, it is to be feared that the paucity of convictions is rather owing to the inefficiency of the Police and want of co-operation of the inhabitants (who selfishly disregard all offence which does not affect themselves) than to any paucity of offenders. The Madras Presidency is divided, for Revenue purposes, into 21 Districts, of which the first 5, forming the Northern Circars, were, during the year 1855-56, under the charge of the Commissioner, and the remaining 16 under the management of the Board of Revenue. The Revenue systems in force in the Madras Presidency are the

Zemindary.	Ryotwar.
Village joint rents.	Oolungoo."

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Under the zemindaree tenure the landholder pays a fixed sum to Government. It prevails chiefly in "the Northern Circars, though there are large proprietary estates in other districts, as Madura, Nellore, North Arcot, &c." In the village system the villages collectively stand in the position of the Zemindar, but there is a want of clearly defined individual property in the land. "Under the Ryotwar system every registered holder of land is recognized as its proprietor and pays direct to Government. He is at liberty to sublet his property, or to transfer it by gift, sale or mortgage. He cannot be ejected by Government so long as he pays the fixed assessment, and has the option annually of increasing or diminishing his holding, or of entirely abandoning it. In unfavourable seasons remissions of assessment are granted for entire or partial loss of produce. The assessment is fixed in money, and does not vary from year to year, except in those cases where water is drawn from a Government source of irrigation to convert dry land into wet or one into two-crop land, when an extra rent is paid to Government for the water so appropriated; nor is any addition made to the assessment for improvements effected at the Ryot's own expense." Unfortunately the assessment has been fixed too high, and various restrictive rules interfere with the freedom of the ryot.

The greater portion of the Presidency is under the Ryotwaree tenure. The system of Oolungoo renting prevails in Tanjore and Tinnevelly only, and is not general even there. "Its peculiarity consists in the Government demand being dependant on the current price of grain." There is a standard fixed. If prices within the year rise above the standard or fall below it Government and not the ryot receives the profit, or bears the loss. The season of 1855-56 was on the whole adverse. The table subjoined shews the extent of cultivation in the sixteen districts excluding Canara, Malabar and Madras. The increase in Bellary is remarkable because the population has suffered from two bad years. The collections stand as follows:—

"1854-55,.....	Rs. 2,68,88,343
1855-56,.....	„ 2,85,06,203
Increase,.....	16,17,860

The increase occurred chiefly in South Arcot, Tanjore, Tinnevelly, Canara and Malabar." The increase resulted chiefly from reductions. In South Arcot the reduction amounted "to about 7 lakhs of Rupees on land under cultivation, exclusive of a further sum of about 8½ lakhs allowed on culturable land lying waste." The increase in the area of cultivation has been 1,78,527 acres, and in the collections, Rs. 6,82,483. The

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gross collections from all sources exceed those of the previous year by eight lakhs of rupees. In North Arcot, Trichinopoly, Coimbatore, Nellore, Tinnevelly, Madura, and Kurnool there have been reductions amounting in the aggregate to about four lakhs. A rule has been passed, "prohibiting any enhancement of the assessment in consideration of the improvements effected by a ryot at his own expense on his holding, sinking wells, constructing tanks, planting valuable trees, &c. which used to lead to extra taxation." The land customs' revenue is as follows :—

1854-55,	Rs.	1,65,915
1855-56,		1,90,756
		24,841

And the Abkaree :—

1854-55,	17,83,403
1855-56,	18,16,571
	33,168

The exportation of indigo shews a large increase. It is now forty lakhs of rupees a year. The exportation of coffee also has risen from 332 maunds in 1845-46 to 39,450 in 1855-56. The revenue from Salt is Rs. 38,31,682. This salt is a monopoly. The manufacturers are bound to sell to Government at a certain fixed rate. The price of salt from Government store is Re. 1 a maund. The cost of manufacture is about Rs. 15 per 100 maunds. Hereafter the price of salt will be its actual cost plus a duty of 14 annas a maund. The Moturpha produced Rs. 9,21,431 and the stamps Rs. 5,78,575, while sundry small farms and licenses yielded Rs. 2,15,428. No revenue is derived in Madras from Opium, and the cultivation is trifling. The total income of the year, including a miscellaneous trifling account called Sevoy jumma, is therefore Rs. 3,73,57,067. This shews a general increase of nearly twenty-three lakhs.

The Northern Circars are under a single Commissioner, a Member of the Board. The permanent settlement was introduced into them at the commencement of the century. Two-thirds of the estates however have reverted to Government, but the reversion has not yet been followed by a sound system of Revenue management. Guntoor is almost an exception, but in the other Circars rents are paid. Large sums have been expended in works of irrigation. The season was generally favourable, and the total revenue from all sources amounts to Rs. 94,53,086. Much of the prosperity of one district, Rajahmundry, is owing to

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the Godavery Anicut. The water of the Kistnah Anicut has but begun to be received.

Printing presses have been set up in all districts except three, in the Collectors' offices, and have been found most useful. Measures have been adopted for raising local funds, a tax of one anna per cawnie being added on the revision of the assessments. The surplus from Government ferries is also available for the same purpose. A Code of Revenue Laws is to be prepared.

A Director of Public Instruction was appointed in Madras about the beginning of the year. The Government was directed to frame his establishment on the system sanctioned in Bengal and the North West Provinces. The Government was not however informed how much it might expend on educational purposes. "An Estimate was accordingly submitted for the official year 1855-56, amounting to Rupees 8,00,000, (£30,000), of which Rs. 80,000 (£8,000) was to be reserved for Grants-in-aid; Rupees 1,05,000 (£10,500) for the support of Anglo-Vernacular Schools, principally supported by Government; Rupees 50,000 (£5,000) for the improvement of indigenous Schools; and Rupees 65,000 (£6500) for the salaries of the Director and principal Inspecting Officers. This Estimate was submitted under date the 19th March, 1855." The Government of India limited the grants-in-aid to Rs. 25,000 per annum, and directed that detailed statements of Establishment should be submitted. According to this estimate the expenditure would have been Rs. 4,21,464. The Supreme Government however reduced the allowances of Inspectors to Rs. 1000 a month, and disallowed the Assistant Inspectors. Twenty Assistant Inspectors under the denomination of Zillah Visitors were subsequently allowed. Their allowance is Rs. 120 a month. "The most important events, in connection with English Education, are—the remodelling of the principal Educational Institution at Madras, which is now designated the Presidency College,—the establishment of a Normal School,—the commencement of a system of Zillah Schools,—and the inspection of English Schools unconnected with the State, on behalf of which applications for grants have been made. At the close of the year three Grants-in-aid of existing Schools had been sanctioned, one of Rupees 7,000 in aid of a building for a School established at Madras, for the instruction of Mahomedans, one of Rupees 62 per mensem with a grant of Rupees 450 for a special purpose in aid of the Schools belonging to the Basle Evangelical Mission at Mangalore, and one of Rupees 50 per mensem in aid of a School projected by the Native community at Honore. At the commencement of the past year the Anglo-Vernacular Institutions, supported by Government, were the Presidency College, then

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designated the Madras University, the Provincial Schools at Combaconum, Calicut, Bellary, Rajahmundry, and Cuddalore, and an elementary English School at Pulicat." The school at Cuddalore has been turned into a Zillah School and two others have been opened in Salem and Chittoor. Another will be established in Madura. The Report recounts the history of the University College, and mentions that the Presidency College for local reasons does not contain either the Medical or the Civil Engineering College. The number of students at the close of last year was 247. The report of the Principal for the year is on the whole favourable. A Normal School was opened on 3rd March, 1856. There are now 8 Anglo-vernacular schools supported by Government in the Madras Presidency. The report details the schools in existence in the districts whether State, private, or Missionary, and adds that "the operations of this Government in the Department of Vernacular Education are, as yet, in their infancy, and owing to the circumstances referred to at the commencement of this Report, but little progress has been made during the year under review." In Rajahmundry village schools have been established by voluntary subscription. They are attended by 1870 pupils who study Reading, Writing, Geography, and Arithmetic. In the hill tracts of the Ganjam District there are 14 schools for the Khond population. It is difficult to induce the Khonds to study, they having an idea that education and taxation go together. Of the number of pupils 14,799 were Hindoos and only 17 Khonds. There is howevre, a change apparent in the sentiments of the hill Chiefs. One hundred vernacular schools are to be established, giving instruction in reading, arithmetic, geography, and history when histories can be obtained. They have not however as yet been organized. "In connection with the subject of Vernacular Education an interesting Report has recently been laid before Government on the Vernacular Village Schools supported by the Church Missionary Society in Tinnevelly. No less than 317 Schools of this class are supported by this Society in the District of Tinnevelly under 267 Masters and 107 Mistresses, whose salaries range from Rupees 3 to Rs. 7 per mensem. In these Schools 7802 pupils are under instruction (5116 being Christians and 2686 Hindoos.") The schools are considerably in advance of ordinary village schools. A series of works in Tamil, and Malayalim are being prepared, and a professorship of vernacular literature has been established in the Presidency College. "This Officer is employed, not only in giving instruction and in superintending the course of Vernacular study in the Presidency College, but in advising the Director of Public Instruction on all matters connected with Vernacular Education, and in examining

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and reporting on all Vernacular School books prepared for the Educational Department." A vernacular newspaper has also been started at Rs. 3 a year.

The sum authorized for expenditure on Public Works in 1855-56 was Rs. 44,21,719. There is an Executive Engineer with an establishment in every district of the Presidency. The transfer of the department from the revenue to the professional authorities is not yet, however, quite complete. The operations of the department have been chiefly in roads, bridges and works of irrigation, whch are detailed.

The number of troops absent from the Madras Presidency in Burmah, the Straits and Labuan is 10,877, which must be relieved once in three years. The cost of this movement is Rs. 2,54,000 a year. A steam vessel constructed by the Court of Directors is on her way to Madras.

The total income of the Madras Presidency for the year 1855-56 is thus estimated :—

Land Revenue, ...	Rs.	3,44,32,000
Salt, ...		49,50,000
Tribute, ...		36,00,000
Abkaree, ...		22,45,000
Customs, ...		11,00,000
Moturpha, ...		10,77,000
Miscellaneous, ...		5,03,000
General department including Stamps, Post Office, &c.		12,18,000
Military miscellaneous, ...		2,93,000
Judicial miscellaneous, ...		1,42,000
Marine, ...		79,000
Extraordinary Receipts, ...		80,000
——————— miscellaneous, ...		5,64,000
Total, ...		5,02,83,000

"The estimated disbursements for the year under report were as follows :—The expenditure, in the General Department, was assumed at Rupees 1,05,66,000. This consists partly of Political Disbursements chargeable on the Revenues, and partly of Salaries, Establishments, &c. of Officers employed in the General Department. The Political Disbursements were estimated at Rupees 55,37,000." The Judicial charges were Rs. 36,02,000, the revenue charges Rs. 56,97,000. The marine department costs Rs. 1,27,000. The military expenditure amounts to Rs. 2,93,66,000. The total charges on Public Works are Rs. 71,61,000, and the extraordinary charges to Rs. 4,43,000, and extraordinary Public Works to Rs. 43,81,000. The

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total disbursements amount therefore to Rs. 5,69,62,000 leaving a deficit of Rs. 57,33,000. "This deficiency has, however, been more than met by the balance on hand at the beginning of the year, and which amounted to 17,30,000½ lakhs of Rupees. The result would have been different :— the balance would have been augmented, instead of being swallowed up ;—a surplus, instead of a deficit, of receipts would have been exhibited, to the extent of Rupees 24,29,000 or nearly a quarter of a million sterling,—if the Expenditure on account of the Madras Troops, which are not actually serving within this Presidency had not been carried to account." Certain reforms in matters of account and audit are described, and it is mentioned that the coinage of the year has been Rs. 55,72,000. The bullion presented at the mint by merchants has been Rs. 72,61,000. The daily delivery of rupees was raised to 36,000 a day for about a month, but the work wore out the cattle which turn the laminating mills. The expenditure of the Mint is Rs. 1,30,404 and the receipts Rs. 2,09,074. "During the year under review two Chaplains and four Assistant Chaplains have been added to the Establishment of the Church of England, making the number of the former 13 and of the latter 22." Churches have been erected at Combaconum, Nellore, Mercara, Palamcottah, Cuddapah and Secundrabad.

The Nuwaub of the Carnatic died on 7th October, 1855 without issue. On the 29th of the same month the Raja of Tanjore died leaving no issue. In both cases the office and dignity have ceased, but liberal provision is to be made for all relatives. The Raja of Travancore has been warned as to the misgovernment existing in his State. In February, 1856 a petty Chief of Purlah Kimedy roused the Soorahs and other savage tribes to outrage, but the prompt and vigorous measures of the Government suppressed the movement.

6343 coolies have emigrated to the Mauritius during the year. The emigrants proceed to this island cheerfully, and often renew their engagements with the planters ; Emigration to the West Indies is suspended by the immensely increased denand for labour throughout the Presidency. Cotton gins of improved construction have been introduced by Government. The experiments to introduce merino sheep from Mysore, however, have failed. Exhibitions of agricultural produce have been sanctioned in each Zillah, and Rs. 60,000 allowed for prizes. There are conservancy establishments for the preservation of forests in Canara, Malabar, and Coimbatore. In all they pay their expenses and return a profit. A separate establishment for the entire Presidency is about to be organized. The report records a few partial surveys, mentions that the observatory is maintained,

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and observes that the Government central museum, Madras "instituted 14th August, 1851, by Notification of Government; contains 32,000 specimens, *viz.* (I.) A Museum of Natural History, with 12,000 specimens, illustrative of Mineralogy, Geology, Palæontology, and Zoology; (II.) A Museum of Economic Geology, with 9,000 specimens, illustrative of *raw materials* in the Mineral, Vegetable, and Animal Kingdoms; Machinery, Manufactures, Sculptures, Models, and the Plastic Art; (III.) A Museum of Geographical Geology, with 7,000 specimens; (IV.) A Public Library of 1500 books; (V.) Coins, Antiquities, &c., and (VI.) A Zoological Collection of Animals." The success of the vaccine establishment has diminished, the decrease of children vaccinated in seven districts being 23,103. The total of operations however has been 4,10,372, and the vaccine lymph is considered efficient. The ratio of failures is 77.9 per 1000. The expense is Rs. 28,308. The number of patients treated in the 35 Civil Dispensaries amounts to 1,84,069, and the cost to Rs. 62,990. The sanitary condition of the Army during the year has been satisfactory. The ratio of mortality was 2.1 per cent. among the European and 1.1 among the native soldiery. The Appendix contains the returns summarized above, with the addition of the census taken in 1851. It exhibits a population of 2,38,01,697, of whom 1,10,50,113 are males and 1,05,81,584 females, 1,99,01,808 Hindoos, and 16,79,899 Mussalmans.

ANNUAL REPORT ON COCHIN.

For 1855-56.

On 23rd July, 1856, Lieut. General W. Cullen reports that the Appeal Court of Cochin consists of one Hindoo, one East Indian, and one Shastry. There are two Zillah Courts each with two Judges, and a Shastry. There are no Moonsiff's Courts, but in Chittoor the Tehsildar is also a Moonsiff. In the native year 1,03,01,045 cases were filed of which 1040 were decided. The Appeal Court disposes of criminal cases, and in extreme cases an appeal lies to the Rajah and Resident. In the year mentioned above 221 criminal cases were disposed of. The Dewan is the Magistrate, and the Tehsildar Police Officers. The Revenues amount to

Land Revenue, ...	Rs.	4,10,996
Teak, ...	„	37,656
Customs, ...	„	35,075
Salt, ...	„	1,09,163
Tobacco, ...	„	55,875
Pepper, ...	„	21,875
Miscellaneous, ...	„	25,309
Abkaree, ...	„	5,961

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The provision for education consists "a small English School at Ervacolum for 40 boys, a School at Trichoor for 20, and an English School for the Jews in the Town of Muttoncherry. The total expense is about 2,000 Rupees per annum." There are 5881 scholars in the vernacular schools.

The roads throughout the province are excellent. The country is irrigated from tanks and the fall of rain is large. The Company's post does not pass through Cochin. A few guards are kept up at an expense of Rs. 16,504. The population amounts to 3,31,693 of whom 9764 are Bramhuns, 81,082 Syrian Christians. The teak forests are diminishing. "Iron for agricultural purposes, is manufactured from the magnetic iron sand and iron lateritic clays which abound in the eastern portion of the province. No other ores have been discovered. As in Travancore the high mountains and partial table lands of Cochin as well as all the lower detached ranges towards the sea coast, appear to consist exclusively of granite, gneiss, and horn-blende rocks. Laterite occupies much of the low country as usual, but with granitic or gneiss rocks constantly appearing at the surface, even to within 5 or 6 miles of the Sea Coast. Towards the East of the Chittoor District commence those widely distributed deposits of kunkur and travertine which cover so great a portion of the District of Coimbatore to the North, as well as to the East, towards Oodamalacotah, &c." The total disbursements amount to 7,26,973, and the total revenue to Rs. 7,40,522. The tribute paid to the Company is two lakhs of rupees. The Government has eight lakhs of rupees invested in Company's paper derived from the tobacco monopoly.

TRAVANCORE.

In 1855-56.

On 21st July, 1856, Lieut. General Cullen, Resident, Travancore and Cochin reports that Travancore contains an Appeal Court, of four Judges and five Zillah Courts of two Judges and a Shastry. There are 15 Moonsiff's Courts. The Moonsiffs receive from Rs. 30 to Rs. 40 each. The Law is Hindoo law modified in particular cases. In 1030 the number of suits filed and received was 6,945 ; of which 5,626 were decided. The Judges of the Appeal Court are the Criminal Judges ; one of them goes on circuit half yearly. Their powers are limited :—

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	Fine.	Imprisonment with hard labour.	Lashes.	Security for Good Conduct.
Criminal Court,	100 Rs.	1 year	29	500 Rupees.
Circuit, ...	200 „	3 „	36	1,000 „
Appeal, ...	Discretionary.	14 „	36	Discretionary.

Heavy sentences are submitted to the Rajah and the Resident. In the same year 604 Criminal cases were decided. It is proposed to appoint Civil and Sessions Judges. Convicts are employed upon the roads.

The Revenue amounts to

Land Revenue, ...	Rs.	15,26,427
Duties, ...	„	1,95,144
Salt (Country,)	„	1,16,936
— (Bombay,)	„	1,53,706
Cardamums,..	„	1,17,962
Tobacco, ...	„	10,00,000
Pepper, ...	„	1,75,744
Miscellaneous, ...	„	1,52,211
Abkaree, ...	„	56,899
Teak, ...	„	41,450

Stamped paper is not used except for sales, mortgages or transfers of property. The rates are very low. Tobacco is now smuggled into the country to such an extent that the revenue is rapidly deteriorating. There is a free-school at Trevandrum with 120 boys of all castes. "The course of instruction is Grammar, Arithmetic, Geography, Mathematics, including Algebra and Geometry, &c. There are also several private English Schools in different parts of Travancore, besides those conducted by the Members of the Church and London Mission Societies." The private schools are very numerous, the Mission schools educating 6,992 children, and other schools 19,700. The road from the frontier to Trevandrum is in tolerable order. There is a system of irrigation in four talooks, but not maintained as it ought to be. Alleppee is the principal port, and all monopoly articles are there collected and sold. It is an open road-stead but safe and convenient. Quilon has a tolerable anchorage but its importance has diminished. There are 14 Protestant Missionaries in Travancore. "The Travancore Government maintain a body of Infantry called the Nair Brigade, consisting of 2 Battalions of 750 bayonets each." It is commanded by a Captain of Madras Infantry with two European officers, two "local" officers,

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and a local Medical officer. It costs Rs. 1,28,081. The population of Travancore in 1854 was 22,63,647. The Syrian Christians number 1,91,009. There are 1,40,000 soil slaves. The forests, chiefly of teak, are a monopoly. There is no mining, the Ghauts never having been examined with care. Considerable attention is paid to vaccination, and 27,054 persons were vaccinated last year, the failures being only 11 per cent. There are charity hospitals at Quilon, Trevandrum, and Alleppee. An observatory constructed in 1837-38 costs Rs. 14,000 a year, and a smaller one has recently been erected on a peak in the Ghauts at an altitude of 6200 feet.

For the eight years ending 1853-54 the financial position of Travancore has been as follows :—

The average Annual Receipts have been about, ..	40	Lakhs.
Although one year, owing to drought, the Receipts were only,..	36¾	„
The average Annual Disbursements for the same interval, ...	39½	„
Or below the Receipts, ...	½	„

There has been a considerable increase of expenditure since 1826, in Dewasoms, Ootperahs, and the cost of the Palace. The charges for the administration of justice, collection of the revenue, &c. have scarcely changed for 30 years, and amount to Rs. 6,52,050. The tobacco is the only monopoly yet seriously endangered. It is feared that it will not afford this year more than 10½ or 11 lakhs of Rupees, and must hereafter gradually diminish, owing to the large quantities smuggled in from Cochin and along the Coast." The native Government wished to suspend payment of the subsidy, but this has been declared impracticable. "The low country of Travancore, from Cochin to Quilon, has a mean breadth of from 40 to 50 miles, the beds of the rivers at the base of the Ghats nowhere exceeding 2 or 300 feet above the sea, nor does the general level of the country, though much undulated and intersected by numerous ranges of rocky hills, rise materially above that level. A table-land, some 60 miles from North to South, separates the low country from the Districts of Madura and Tinnevelly, its Northern half being from 20 to 25 miles broad, the Southern half about 8 miles only. On its Western edge, this high land is about 2,500 feet above the sea, but it rises gradually to the Eastward, where it attains an altitude of 4,000 to 5,000 feet, and where the temperature in the month of January is about 60° and in the month of April 70°." European fruits have been tried

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and succeed on these high lands. Nutmegs, cotton and coffee have been introduced into Travancore by a Madras firm.

ANNUAL REPORT ON BOMBAY.

For 1855-56.

The Presidency of Bombay contains eight zillahs. "In six of these there is a Judge. In Khandeish and Sholapore, there are only Assistant Judges. In three Zillahs there are Senior Assistant Judges at detached stations." There are moreover 7 Principal Sudder Ameens, 13 Sudder Ameens and 73 Moonsiffs. "The Zillah Judges have power to decide original suits and appeals involving sums of any amount. The Senior Assistant Judge, at a detached Station, has power to decide appeals in which the sum in dispute amounts to Rupees 5,000. An Assistant Judge is, in the first instance, strictly an Assistant to the Judge, performing such duties in the Judge's Office as may be entrusted to him. But he may be invested with power to decide appeals up to Rs. 5,000. A Sudder Ameen has power to try original suits not involving larger sums than Rupees 10,000. A Moonsiff has power to try original suits not involving larger sums than Rupees 5,000." The principal reform introduced during the year has been to change the ministerial officers of the native courts into servants of the State. Formerly they were servants of the Judges, paid by them, and removed by them. The returns of civil business exhibit an excessive amount of arrears caused by frequent vacancies from sickness. The same courts decide all criminal cases, the power of the Sessions Judge extending to seven years' imprisonment with hard labour, of a Senior Assistant Session Judge and an Assistant Session Judge to two years. "The Magistrate and his Assistants can adjudge sentences of imprisonment with hard labour not exceeding one year."

The attention of Government has been directed anxiously to the question of torture. There is no revenue torture in the Presidency. The police, however, occasionally employ torture, and painful cases transpired at Nassick, Poona, and Surat. The Government has dismissed a Foujdar and removed a Magistrate for carelessness on the subject. The practice of obtaining confessions has been discouraged, and in Sind, a Non-regulation Province, the police have been prohibited from receiving them. In October, 1855, an officer was appointed to the supervision of the Police establishments, under the title of Commissioner of Police. "In the Bombay Presidency, each Collectorate has its Superintendent of Police, a Military or Uncovenanted Officer,

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under whose command the Police force of the District, both Village and Stipendiary, is placed, and to whom, as an Assistant of the Magistrate, is entrusted the duty of making all arrangements for the prevention of crime and the apprehension of criminals." Among his duties is a reorganization of the village police, which has been actively commenced, and the stipendiary Police have been more efficiently distributed over the districts. A thorough reform has also been commenced in the Police of the Presidency town, under the superintendence of Mr. Forjett. An Inspector of Jails has been appointed, penal discipline has been rendered more strict, and under his supervision, there is already a perceptible diminution of mortality in the Jails though the number of prisoners has been increased. "The Presidency of Bombay comprises, in all, about 1,40,407 square miles, of which 63,599 are included in the Province of Sind, and 75,808 represent the extent of the British possessions in the Provinces of Western India, known as Guzerat, the Deccan, Khandeish, the Southern Mahratta Country, and the Konkan."

There are thirteen Collectorates exclusive of Sind which is managed as a Non-regulation Province. In the Collectorates the Collector is, as to almost all revenue questions, subject to the ordinary courts. In Sind he is responsible only to Government. The Report enters into a description of each Collectorate which may be thus summarized :—

District.	*Area square miles.*	*Population.*	*Capital.*
Ahmedabad,.....	4,402	6,53,730	Ahmedabad.
Kaira, ...	1,375	5,80,631	None.
Broach, ...	1,351	2,90,984	Broach.
Surat, ...	1,482	4,93,934	Surat.
Khandeish, ...	12,078	7,85,744	None.
Tanna,.....	5,400	8,74,570	Tanna.
Poona,.....	5,250	6,98,587	Poona.
Ahmednugger,.....	10,078	10,02,733	Ahmednugger.
Sholapoor, ...	8,565	6,85,587	Sholapoor.
Sattara, ...	11,000	12,19,673	Sattara.
Belgaum,.....	6,515	10,35,738	Belgaum.
Dharwar,.....	3,790	7,57,849	———
Rutnagherry, ...	4,500	6,65,238	Rutnagherry.
Bombay,.....	20	5,20,800	Bombay.
Kurrachee, ...	19,240	3,44,144	Kurrachee.
Hydrabad, ...	———	———	Hydrabad.
Shikarpoor,.....	11,532	5,13,674	Shikarpoor.

This Collectorate is watered by the Gharr, a branch of the Indus recently connected with the Narra. "It is indicative of the great returns derivable from a Public Work, well conceived

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and judiciously executed, that this new cut has in one season paid eight-fold its own cost." It is expected, that the frontier districts settled by the plundering tribes will yield a revenue of two lakhs of rupees.

The land revenue system of the Presidency is the Ryotwaree, interrupted by village holdings. In Sind the old grain assessment has been commuted for a light cash assessment, in most districts. The Revenue Survey has been nearly completed in the Southern Division, but the hereditary farmers of Rutnagherry offer a strong opposition. Several improvements of detail have been carried out in the Survey, and alienated lands are surveyed whether their owners like it or not. The enquiry into alienated revenues commenced in 1843, and has been steadily prosecuted. 1,08,200 claims have been received, of which 1,00,000 remain for adjudication. Frauds to a great extent have been discovered in claims to small pieces of land. The expenditure of the department has been in all Rs. 1,18,464. The annual revenue immediately saved is Rs. 24,630, and the revenue to be saved after the lapse of one or more lines Rs. 63,212. The emoluments of village officers have been regulated so as to prevent endless sub-division. The service of Government is now therefore an object of ambition.

The amount of customs levied during the year has been on

Imports, ...	Rs.	28,59,672
Exports, ...		33,31,238
Total, ...		61,90,910

This shows an increase of Rs. 40,327 over the preceding year. The custom revenue of Sind amounts to Rs. 70,000 but much of it is levied in Bombay. The frontier duties amount to Rs. 65,276. All duties on the inland frontier of Sind have ceased; the Khan of Khelat now levies only 8 annas a maund on all goods. The salt revenue "is realised from an Excise duty levied, at the pans, on all Salt removed, at the rate generally of 12 annas per Indian maund of 82 lbs." The excise amounted during the year to Rs. 27,49,677. The opium revenue is levied by a tax of Rs. 400 a chest, and amounts to Rs. 1,00,56,400. A Director of Public Instruction and four Inspectors have been appointed. The Government grants to private schools, a schoolhouse, contingencies, and half the charge for masters. Sixty schools have been thus established, and 20 will immediately be created. A searching examination has been made into the condition of the Colleges. It has drawn the attention of Government to much requiring correction. The native gentry in Kattywar and some towns of Guzerat have given munificent donations towards education.

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Public Works have been checked by the absence of scientific Engineers; of eighteen Captains in the Corps five only have been available, and of thirty-two first Lieutenants only fifteen. There is not one second Lieutenant in the Bombay Army who is duly qualified for Engineering Service. Twelve gentlemen have been sent out by the Court of Directors, but they want experience. The changes also have been excessively frequent. The following shews the work accomplished :—

Expended on Roads and Bridges, ..	Rupees	12,88,695	11	9
Docks, Dock Yard, Offices, and Buildings for Marine purposes, ...	„	71,891	9	11
Piers and Jetties, and clearances of Tidal Rivers and Creeks, ...	„	23,652	7	3
Light Houses and Beacons, ..	„	6,914	3	2
Reclamation of Land from the Sea,	„	1,20,159	4	0
Canals, Irrigational Bundaras, Tanks, and Wells, ...	„	3,46,586	13	0
Fortifications, Magazines, and Military Store-houses and Offices, &c.,	„	3,25,642	11	0
Barracks and Buildings connected therewith, ...	„	2,84,800	15	6
Schools, ...	„	27,032	9	6
Hospitals, ...	„	34,715	12	11
Churches, Burial Grounds, &c., ..	„	16,693	4	11
Jails and Buildings for Police purposes, ...	„	1,11,622	11	2
Miscellaneous: Government Houses, Cutcherries, Travellers' Bungalows, Dhurrumsalas, Ferries, Post Offices, Telegraph Stations, &c. &c., ...	„	2,50,484	0	8
Total, Rupees, ..		29,08,892	2	9

The most important original works are:—"*Lower Narra Bunds*—Original cost, Rupees 36,666—Net Revenue, Rupees 34,604. *Fordwah Canal*—Original cost, Rupees 900, additional cost, Rupees 4,600; in all Rupees 5,500—Net Revenue, Rupees 73,600. *Figi Bund*—Original cost, Rupees 9,818—Net Revenue Rupees 78,754. *Balawulpoor Bund, in the Sehwan Deputy Collectorate*—Original cost, Rupees 118—Net Revenue, Rupees 1,476." The Report proceeds to detail the history of the Railway works and observes that the Bhore Ghaut has been finally sanctioned as the point of ascent, to the lands beyond the range. During the year the Great Indian Peninsula line has been extended from Callian to Campoolee or 53¾ miles in all. "The works on the Bhore Ghaut, as well as the section to Poona, were commenced in January, 1856. The south-east extension, as far

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as to Sholapoor, a distance of 165 miles, was also sanctioned, and the works were commenced in March. Without waiting for the working plans, the contracts have been let on rates. Sanction was also given to the construction of the Thull Ghaut incline, and for the North-east line, as far as Julgaum (miles 210;) all these are now being staked out, and tenders will be invited during the ensuing year. Surveys of extensions from Jubbulpoor to Mirzapore a distance of 237 miles, were also sent in, and of a branch to Oomrawuttee and Nagpoor, a length of 246 miles, of which latter the construction has been sanctioned. It has now, therefore, 89 miles open for traffic; 219 miles let to contract and under construction; 210 miles sanctioned and being prepared for contract; 694 miles surveyed, but construction not yet sanctioned." The Baroda and Central India Railway completed their survey from Surat to Broach, and broke ground on 1st May, 1856. The Sind Railway has been employed surveying lines between Kurrachee and different points upon the Indus.

The Indian Navy includes twelve steamers, two of 1800 tons and two of 1450, and nine sailing vessels, one of fourteen, and two of twelve guns. A new Steam frigate has been laid down, but during the year there have been no important measures connected with the Navy, the pilotage dues, or the harbours of the Presidency. The following statement shows the financial position of the Presidency:—

RECEIPTS.

General Department, including Sind and Sattara,	...	..	...	...	21,75,097-3-1	
Judicial	ditto	ditto	ditto	...	3,86,378-1-5	
Revenue	ditto	ditto	ditto	...	4,64,64,730-5-8	
Marine	ditto	ditto	Sind	...	6,47,316-7-6	
Military	ditto	ditto	ditto	...	10,31,185-1-2	
Tribute,	...	...	...	...	8,85,698-8-2	5,15,90,405-11-0

DISBURSEMENTS.

General Dept. including Sind and Sattara,					1,21,68,037-2-8
Judicial	ditto	ditto	ditto	...	43,48,631-4-7
Revenue	ditto	ditto	ditto	...	1,21,85,938-9-5
Marine	ditto	ditto	Sind	...	26,81,179-4-3
Military	ditto	ditto	Sind and Sattara,		1,97,50,421-14-10
Tribute and Guicowar Cession,	...	...			1,16,985-7-115,12,50,493-11-8

Balance Rupees,.....3,39,911-15-4

Showing a surplus of 3,39,911. The cost of the civil establishments amounts to Rs. 4,44,570.

The number of Chaplains in the Bombay Presidency has been increased to 32. There are 21 churches consecrated and eight not consecrated. Eight more are under construction. The Report details the political transactions of the year. No events have

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occurred of the slightest interest except the blockade of Berbera. This has been maintained throughout the year to compel the surrender of the Somalis who attacked Lieut. Burton, and murdered Lieut. Stroyan. The men have not been surrendered but the Somalis have lost their entire trade.

"The only measures of general interest in the Military Department, have been the introduction of Army Schools, and the experiments with the rifle invented by Lieut. Col. John Jacob. This rifle is four-grooved, with a new conical ball and shell. The result of a trial was convincing, that, before a small body of marksmen armed with such weapons, no Battery of Artillery could long hold its ground; for a box filled with powder was exploded by a shell fired at 300 yards, and from the effect of the shells on the butt, it was evident that the same result would have been attained at the greatest range from which practice was made, *viz.* 1,200 yards; the shells on exploding tearing out a large fragment of the wall." A Normal School has been established for training School Masters for native soldiers.

The miscellaneous work of the year has been important. Measures have been taken for systematic enquiry into the enormous alienations of the Public Revenue in Guzerat. Plans have been under consideration for improving the ports of Guzerat, and measures of irrigation have been considered. The census has been delayed, but in 1851 the population of Bombay was 1,02,65,746 souls, and of Sind 15,71,908 souls. The cotton farms in Broach and Surat have been broken up as failures, but Dr. Forbes in Dharwar has introduced an important improvement on the saw-gin. Attention has been paid to the planting of Babool, Teak and other useful trees, and the stores of timber in the dockyard have been placed under the control of the Conservator of Forests. "Up to the 1st January, 1856, 336 Towns and Villages of this Presidency (of which 292 are in the Sattara Collectorate) were brought under the operation of Act XXVI. of 1850." Very little improvement has, however, been effected in the sanitary condition of the towns, and the popular plans of taxation are exceedingly vague. The Government is of opinion that municipal taxation should be made compulsory. A scheme has been sanctioned for supplying Bombay with water at a cost which will probably amount to 30 lakhs of rupees. The money has been advanced by Government to the Municipality. "The Medical Department of this Presidency consists of 55 Surgeons, including 8 members of the Medical Board and 5 Superintending Surgeons, 130 Assistant Surgeons, 112 Warrant Medical Officers, inclusive of Apothecaries, Stewards and Assistant Apothecaries. In the Subordinate Medical Establishments are included 223 Hospital Assistants and 152 Apprentices." Seven

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Assistant Surgeons have been appointed Superintendents of Vaccination and last year they vaccinated 2,58,872 persons. There are hospitals at every Civil and Military station. Each Civil hospital has a dispensary. There are ten Civil Dispensaries.

The Appendices contain the tables summarized above. The most important returns may be thus summarized :—

In the Sudder Court Civil Suits last, ..	2 y. 6 m. 3 d.
Districts and City Judges, ...	1 y. 1 m. 10 d.
Subordinate Judges, ...	3 y. 8 m. 1 d.
Assistant Judges, ...	1 y. 6 m. 13 d.
Principal Sudder Ameens, ...	3 m. 15 d.
Sudder Ameens, ...	4 m. 12 d.
Moonsiffs, ...	7 m. 5 d.
Criminal cases referred to Nizamut Adawlut last,	105 days.
Persons apprehended, ...	58,677.
Convicted, ...	41,330.
Capitally punished, ...	19.

ANNUAL REPORT OF BENGAL.

For 1855-56.

Bengal, Behar and Orissa, have an area of 2,53,000 square miles. "The existing Civil Courts in Bengal are Her Majesty's Supreme Court and the Small Cause Court at Calcutta; the Court of Sudder Dewanny Adawlut, the Courts of the Zillah Judges, the Principal Sudder Ameens, the Sudder Ameens and the Moonsiffs in the Interior." A Moonsiff has jurisdiction up to Rs. 300, a Sudder Ameen up to Rs. 1,000, and a Principal Sudder Ameen to any amount. "From all decisions of the Moonsiff and Sudder Ameen there is an Appeal to the Zillah Judge. From all decisions of the Principal Sudder Ameen where the value of the property does not exceed 5,000 Rupees, there is an Appeal to the Zillah Judge, where the value is above 5,000 Rupees, the Appeal is to the Sudder Dewanny Adawlut." There is a further or special appeal from all decisions passed by the Judge or Principal Sudder Ameen if the decision has failed to determine all the issues or is contrary to law, or if any document has been misconstrued, if there is ambiguity in the decision, or if there is substantial error of procedure on the face of the record. There are twenty-six Zillah Judges in Bengal, and a Principal Sudder Ameen in every district where there is a Judge. In two districts, Monghyr and Furreedpore there are Principal Sudder Ameens specially belonging to the district. There are 27 Sudder Ameens, 51 Moonsiffs of the first, and 151 Moonsiffs of

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the second grade. "The number of Original suits which came before the Courts of Original Jurisdiction in 1855 was 1,15,859. Of these 46,415 were decided on their merits, 548 were dismissed on default; 27,619 were adjusted or withdrawn; leaving 86,337 pending at the end of the year. Of these cases only 2,438 came before European Judges, whilst the great bulk, amounting to 77,084 were solely in the hands of the Native Judges." Of these :—

1	Connected with the land rent, ...	15,702
2	Otherwise connected with land, ...	7,250
3	Connected with debts, wages, &c., ...	46,177
4	Caste, Religion, &c., ...	361
5	Indigo, Sugar, Silk, &c., ...	2,138
		71,628

The new law of evidence has reduced the number of suits on bonds. Under that law the parties can be examined, and the money lenders do not like to give evidence in Court, till every other chance has failed. Of the entire number of suits 31,211 were decided in favour of the plaintiff, to 15,204 in favour of defendant, a proof of the general integrity of suitors. The average duration is :—

	1855.		
	Year.	*M.*	*D.*
"Sudder Court, ...	1	3	4
Zillah Judges, ...	0	11	3
Additional Judges, ...	0	9	14
Principal Sudder Ameens, ...	1	0	14
Sudder Ameens, ...	0	9	6
Moonsiffs, ...	0	6	26"

Act XVI. of 1853, enlarged the opportunities of appeal to the Sudder Court, and has therefore increased and delayed litigation. The total value of the suits pending on 31st Dec., 1855, was :—

"Original Suits, ...	Rs.	3,57,18,544
Zillah Appellate Courts, ...	„	21,67,274
Sudder Court, ...	„	1,47,96,832
Total, ...	„	5,26,77,650

The establishment for the trial of Civil Suits costs about Rs. 20,00,000. The Report analyses the decisions in the Non-regulation Provinces, and proceeds. "The following Courts are established in Bengal for the administration of Criminal Justice :—1. Her Majesty's Supreme Court. 2. The Calcutta Magistracy. 3. The Nizamut Adawlut. 4. The Sessions Judge's Court. 5. The Courts of the Magistrate and his Subordinates." There are 37 districts in 25 of which there is a

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Magistrate while in twelve he is also the Collector. There are 33 sub-divisions under Deputy or Assistant Magistrates, the highest punishment which can be inflicted by a Magistrate, is 3 years' imprisonment, by an Assistant Magistrate with special powers, one year's imprisonment, and by an Assistant Magistrate two months' imprisonment. The number of persons apprehended during the year was 81,877. 2,375 had been pending from the previous year, and they were disposed of:—

"Discharged without trial, ...	1,033
Acquitted, ...	24,357
Convicted, ...	52,765
Committed for trial at the Sessions, ...	3,357
Otherwise disposed of, ...	658
Under trial 30th December, ...	2,450"

In the Sessions Court of 4027 prisoners, 1860 were discharged without trial or acquitted. In the Sudder Court, 1,792 persons were brought up, of whom 445 were released. The average duration of cases referred to the Sudder Nizamut is 181 days. The Report analyses the criminal returns of the Non-regulation Provinces and proceeds to mention that the general control of the Police is now under the Commissioners. "There are, at present, 486 Police Darogahs, presiding over a corresponding number of Police Thannahs in the Lower Provinces, so that, in the 37 Districts, the average number of Thannahs is rather above 13. At each Thannah are stationed, besides the Darogah, a Mohurrir or Clerk, and a Jemadar, with ten or twelve Burkundauses or Constables." The main body of the Police are the village Chowkeedars. The machinery is very inadequate, the following being the return of thefts and burglaries:—

	Number of Cases reported.	Number of Cases enquired into.	Persons arrested.	Persons convicted or committed.	Persons acquitted.	Pending.	Otherwise disposed of.	Value of property stolen.	Value recovered.
Thefts,	13,734	5,110	8,110	3,997	3,813	202	105	7,08,437,	78 078
Burglaries,	19,787	1,995	2,539	1,375	1,375	103	25		

The result is very unfavourable, one cause is the exceedingly small number of complaints preferred, but this cannot be remedied till the police have been improved. The returns of violent crime are unsatisfactory.

	Murders Reported.	*Persons arrested.*	*Tried.*
Patna, ...	46	142	37
Bhaugulpore, ...	37	74	20
Rajshahye, ...	43	134	7

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The Sonthal insurrection was the great event of the year, but it has already been specially reported on. The Sonthals, excited by the oppressions of the muhajuns burst into the plains, and plundered many Bengalee villages. A small force of infantry put the rebels to the rout below Rajmehal, and in Bhaugulpore, where the alarm was greater, they were checked by the regular troops. A military force in the cold weather swept through the country, and subjugated all who resisted. The Sonthals were relieved from the operation of the regular laws, and a Deputy Commissioner with four Assistants was appointed to conduct the Civil administration.

The Dacoity Commissioner has been assisted at Head-quarters by Baboo Chunder Seekur Roy, and at Midnapore by Captain Keighly of the Thuggee Department. In the 24-Pergunnahs there were only 5 cases in 1855, and in four of these cases 40 out of 45 Dacoits were convicted, and in the 5th case the gang after escaping for some months were ultimately brought to justice. In Baraset and Howrah the crime has almost disappeared. In Hooghly it still exists, but the number of cases has sunk from 128 in 1852, and 59 in 1854 to 33. "In Burdwan the crime still exists, but has been reduced. One man in this district had been nine times arrested, five times committed for trial, twice convicted, and always released by the Sudder Court. In Nuddea the crime has been reduced, but the Commissioner's proceedings are not yet matured. In Midnapore Captain Keighly arrested 133 dacoits, of whom 15 have been transported for life and 10 for nine years, 2 sentenced to 15 years' imprisonment, 9 acquitted by the Sessions, 23 released by Captain Keighly, and the remainder await trial. In Jessore dacoity has increased, the Commissioner having been able to do nothing. The total number of persons under trial before the Dacoity Commissioner during the year amounted to 229, of whom 136 were committed to the sessions, 23 were pending before the Deputy Commissioner, 33 were released for want of evidence, 5 died, and the remainder were otherwise disposed of." The Commissioner complains that the differences of opinion among the Judges of the Sudder have not been removed by any authoritative ruling. Conviction or acquittal still depends on the Judges before whom the prisoners are tried.

The Office of Inspector of Jails was created in 1853. In Novr. 1855, Dr. Mouat was appointed, and during the succeeding ten months visited and reported on 45 of the Jails in his charge. In the 4 Jails the daily average of prisoners in custody was 19,589. The entire cost was Rs. 8,14,936. The average total cost of each prisoner was Rs. 42-10. The net profit yielded by manufactures was Rs. 90,859. The discipline of all the Jails

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except Alipoor jail is imperfect, the guards worthless, and too many of the prisoners still employed upon the station roads. In-door employment will shortly be provided for all the prisoners. An exhibition of Jail manufactures has been held with very satisfactory results. "The most successful results that have been attained are at Alipore, Hooghly, Howrah and Jessore, where the value of the labour of each convict employed in manufactures has been considerable. The chief manufactures are Paper, Gunny, Cotton Cloths, Blankets, Carpets, Thread, Twine, Articles of Bamboo, Ratan and Reeds, and also Bricks. The largest profits are made in the Alipoor Jail, whilst Jessore and Rajshye exhibit the largest profits among the ordinary District Jails." Classification is as yet almost impossible, for females entirely so. It has been proposed to establish a central Jail for all women sentenced to lengthened terms of imprisonment. The mean mortality among the prisoners has been 10.307, the greatest mortality was at Bhaugulpore where the loss amounted to 40.245 per cent. This Jail was very crowded but 24.65 per cent. of the deaths occurred from cholera. "The returns submitted by the Inspector up to 30th April, 1854 show that on that date, out of 9,305 Male Hindoo labouring Prisoners there were 792 who could read and write; and of 5,122 Male Mussulman labouring Prisoners, 241 who could read and write; out of 825 non-labouring Male Hindoo, 222 could and write, whilst out of 457 non-labouring Male Mussulman Prisoners 56 could read and write. Among 595 Female Prisoners, on the same date, there were only 3 reported to be able to read and write."

There are 49 Revenue jurisdictions in Bengal under the Board of Revenue, besides Darjeeling, and the Cossyah hills. The revenue in the Regulation Provinces is permanently settled except in three districts of Cuttack and in Cachar only 5.7 per cent. of the entire demand is realized from the Non-regulation Provinces. The following shews the position of the land revenue:—

	Demand.	Collections.	Remissions.	Balances.
In the permanently settled Districts of Bengal and Behar, Rs.	3,60,54,853	3,33,02,208	3,62,649	23,99,998
In Orissa, ...	22,48,261	16,59,763	60,984	5,27,514
In Assam, ...	10,36,190	8,66,061	19,154	1,50,975
In Chota Nagpore, ...	3,58,012	3,11,086	5,332	41,594
In Arracan, ...	7,42,576	7,33,507	353	8,715
In Cachar, ...	82,154	81,640	283	230
In Darjeeling and the Cossyah Hills, ...	35,211	34,855	297	59
Total, Rs.	4,05,67,257	3,69,89,120	4,49,052	31,29,085

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Land Revenue, ...	Rs.	3,69,89,120
Customs, ...	„	1,35,13,118
Abkaree, ...	„	28,01,566
Stamps, ...	„	20,31,214
Salt, ...	„	70,82,295
Opium, ...	„	2,85,42,105
	Total,	9,09,59,418

The trade has greatly increased amounting to

Imports,	Merchandise, ...	Rs.	8,06,08,182
	Treasure, ...	„	5,81,00,445
Exports,	Merchandise, ...	„	12,60,42,637
	Treasure, ...	„	1,14,28,310
	Total,		27,61,79,574

The total number of ships employed was 1134 with a tonnage of 6,50,320. "The number of British and Foreign ships that arrived in the Port of Calcutta in 1855-56 was greater than it was in 1840-41 by 82.6 per cent. and than in 1850-51 by 47.8 per cent." A bill for the consolidation of the Abkaree laws has been brought into Council. It fixes the rate of duty on Bengal rum at one rupee a gallon, allows spirits to be passed from distilleries under bond, and allows the free export of bonded spirits.

Another bill has been introduced into Council to remodel the laws which regulate the manufacture and cultivation of opium.

In January, 1855, a Director General of Public Instruction was appointed. The University Committee "has now framed a scheme for the Examination of Candidates and the granting of Degrees in the Faculties of Arts, Laws, Medicine and Civil Engineering, and it only remains for the Supreme Government to approve that scheme, and to appoint Senates at the three Presidency Towns for carrying out its provisions. The Legislature will probably be shortly moved to pass an Act incorporating and establishing the Universities." The Presidency College has been placed on an improved footing, and the curriculum arranged with special reference to the examination for university degrees. The law department is efficient, seven students out of eight obtaining diplomas which qualify them to practise in any Court or to act as Moonsiffs. The Medical College is in an equally satisfactory condition, as are also the Mudrussa, Calcutta, and Hooghly Colleges. There are forty Zillah Schools, which are however, susceptible of improvement. A new system of examination has been introduced, which produces greater uniformity. Formerly every Local Committee drew up its own examination paper. The head masters are usually qualified and zealous, but the inferior

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masters are indifferent. It may be necessary to set on foot some system for training masters for English schools. There are two institutions for training teachers in the vernacular, and another has been sanctioned. Little has yet been done to educate the mass of the people, but experiments have been tried in different districts. Model schools have been set up in some districts. In others the indigenous teachers receive rewards for the proficiency of their pupils. In others Government teachers move about from one school to another, instructing the teachers in their duty. Ten scholarships of Rs. 4 a month are attached to each district in which these measures have been organized. Grants in aid are also offered to all schools. Up to 1st July, 140 schools had received Grants in aid, to the extent of Rs. 3,734 a month. These schools are chiefly in the neighbourhood of Calcutta. The least effect has been produced in Behar where the people besides being ignorant regard educational efforts as efforts at conversion. In Assam there are 67 Government vernacular schools, with 3,193 pupils. On 9th July, 1855 a notification was issued announcing that no situation of more than Rs. 6 a month would be given to any one who could not read and write. The Department has done nothing during the year in the matter of providing Educational works. The School Book Society, and the Vernacular Literature Society have however been invigorated.

The number of Pilot vessels "for the last twelve months has been 232. Of this number 59 were proceeding with the assistance of Steam and 173 without it." There were few cases of serious damage. The number of collisions has been 65. The strength of the pilot service at the close of the year was 130 of whom 34 are volunteers, 12 and 24 Senior and Junior second mates, the rest being running, Master, and Branch Pilots. Six Pilots have been brought to trial during the year, but only two for want of skill and of these one was acquitted. There are 8 pilot and 2 light vessels. The pilotage receipts amounted altogether to Rs. 6,72,469. The expenditure was about Rs. 6,32,000. There is therefore a profit of Rs. 59,091 for the first time on record. The report mentions that other details connected with the port and proceeds to mention that there are five inland steamers which have earned during the year Rs. 70,385. Their expenses have been Rs. 46,676, shewing a profit of Rs. 23,708.

The total outlay on public works has amounted to Rs. 38,28,216, of this sum there has been expended

On Trunk Roads, ... Rs. 12,45,259
„ bridges and causeways, ... „ 57,409

On rivers and canals, Rs. 10,257 on staging bungalows Rs. 1,809, on post offices Rs. 17,396, on Electric Telegraph buildings Rs. 30,038, on Government houses 30,038. In the judicial

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department the outlay on Jails, cutcherries, and circuit houses was Rs. 2,25,745. Rs. 14,019 were expended on ecclesiastical buildings, Rs. 25,031 on educational structures, Rs. 1,55,802 on cutcherries, opium Godowns, and other revenue works, and Rs. 6,76,691 on embankments. Rs. 22,955 were expended in the marine department, and Rs. 5,04,197 on military works. Of the great works commenced or under discussion during the year, the Arracan road has advanced slowly. The drawings for the Patna road have not been received, though the work was sanctioned two years since. Detailed plans and estimates are being drawn up for the Darjeeling Road. A road from Calcutta to Jessore at a cost of Rs. 4,20,000 has been sanctioned. The Cuttack Road, a road of great importance, requires remodelling, and as the expense will be Rs. 8,93,000, has been submitted to the Court of Directors. Four streams across the Grand Trunk Road remain to be bridged. The bridges over three have been begun, but new estimates have been called for. The plan for bridging the fourth has been sanctioned. Measures have been adopted for controlling the Mahanuddy, which annually floods a portion of Cuttack. The embankments on the right bank of the Damoodah have been levelled, in order to protect the country on the left bank. The experiment has since proved successful.

There are eleven chaplains in Calcutta, and two at Dum-dum. Barrackpore, Dinapore and Dacca are the only other places in Bengal where chaplains have been continuously stationed during the past year. The political relations of Bengal are few. In Cuttack however there are now 16 tributary mehals exempt from the operation of the Regulations. The Rajahs refer all crimes of enormity to the Superintendent. They are inhabited by a wild uncivilized race. Mr. Mills in 1847 urged that education should be promoted and roads opened up, and minor Rajahs educated by Government. Since then, "some steps have been taken in the direction which he indicated. A few Roads have been gradually opened out. Several Vernacular Schools have been established in the two Estates of Banki and Ungool, which have lapsed to Government. Minor Rajahs are also taken charge of by the Superintendent and are educated under his immediate eye at Cuttack. For some time past the young minor Rajah of Nyagurh, one of the largest and best of the Mehals, has been thus under the Superintendent's guardianship and a favourable account is given of the boy's progress in the Superintendent's Report for 1855-56." The tributary Mehals are now quiet, the only points of danger being the Khond Maliahs and Bamunghattee, both inhabited by tribes of whom we know little except that they are excitable. The Khond Maliahs recently

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sheltered insurgents from Goomsoor, and it was proposed, as the Boad Rajah seemed to have no authority, to pension him off. The Rajah, however, declined to accede, and it was not considered proper to force the arrangement on him. The Khond Mal was therefore occupied by a body of Police, and its success appears to have been perfect. The people are content and the hills quiet.

An attempt has been made to redistribute and strengthen the military posts bordering on the Naga country on the North Eastern frontier, and to conciliate that powerful tribe by enlisting men from it for theNowgong Police Militia. The "Independent Tribes, which occupy the impenetrable Ranges of Hills on the Eastern boundary of Chittagong and Arracan, have, after an interval of comparative repose, again commenced to give trouble." An expedition against them was deprecated by Captain Hopkinson, Commissioner of Arracan.

The number of emigrants from Calcutta during the year has been 9,942, of whom 8,325 went to the Mauritius.

The Survey has been completed with the exception of Mymensing, Burdwan, Jessore, and Rungpore, in which the survey is proceeding, and Dinagepore, Dacca, Furreedpore, Sylhet, Tipperah, Bullooah, and Backergunge in which it has not commenced. Orissa and Assam have been surveyed, and Arracan is under survey. The Tributary Mehals of Cuttack are being surveyed, and there will then remain the Chota Nagpore Commissionership, with its area of 60,000 square miles.*

There are forty-three dispensaries in Bengal, seven supported and the remainder assisted by Government. Twenty-three have Sub-assistant Surgeons. During the year they had 7,545 in-door and 1,45,616 out-door patients. "The proportion of Patients absolutely cured is 56.4 per cent. in the case of In-patients and 66.2 per cent. on the case of Out-patients. Including those relieved, the proportion is 65.9 and 80.5 per cent. respectively."

THE NORTH WEST PROVINCES.

In 1855-56.

"ADDING Etah and Nagode to the list, there are 51 Districts, under the Administration of the North Western Provinces, with a population of about 35 millions, occupying an area of nearly 1,20,000 square miles, and inhabiting about 1,00,000 townships or villages, (the great majority of which are separate properties),

* England and Wales contain 58,000 square miles.

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and contributing a total Revenue, which falls little short of 5¾ crores of Rupees, or millions sterling. The superintendence of the Judicial and Revenue affairs of these wide and varied tracts, is exercised chiefly through the Sudder Court and Board at Agra, and, in part, through the Agent to the Governor General in Rajpootana and Central India, as Commissioners, under the Lieutenant-Governor, for Jawud, Neemuch and Nimar, and through the Commissioner who has the duties of Executive Administration in Ajmeer, but is in direct correspondence with this Government. There are two Officers, the Judge at Jubbulpore and the Superintendent at Jhansi who now exercise within certain Districts, the full powers of the Sudder Court in *Civil* cases. From Jawud, Neemuch, Nimar and Ajmeer, references, in all Criminal cases, considered to call for a capital sentence, are made for the orders of the Lieutenant Governor, who usually sends the records of trial for the opinion of the Sudder Court. There is an Inspector General of Prisons for the control of Jails and Jail discipline, and a Director of Public Instruction, with four Inspectors." The public works are under the care of a Chief Engineer, a Superintendent of Canals and Irrigation, and a Superintending Engineer in Saugor. There is also a Deputy Consulting Engineer in the Railway Department. There is a Post Master General for the province. The political business is unimportant, and the Government has no military authority. The Report enters into further administrative details, and observes that Kumaoon, Bhutteeanah, Dehra Dhoon, Bundelkund, Saugor, the Nerbudda Valley, Ajmeer, Jawud Neemuch, and Nemar are Non-regulation districts. In Saugor and Bundelkund a Code simplifying procedure has been introduced. It has been extended generally into Bhutteeana. Kumaoon has Codes of its own. In all these districts disputes as to land are referred exclusively to the Revenue officers. In Neemuch, Ajmeer and Nimar no Courts of civil procedure have ever existed. The Saugor Code is to be introduced there also. In the Courts of the Regulation Provinces business is conducted with despatch, and the number of suits pending has decreased, except in the Sudder Court. The average duration of suits is :—

	1855.		
	Years.	Months.	Days.
Sudder Dewanny Adawlut,..	0	4	15¾
Judges, ...	0	5	21½
Principal Sudder Ameens, ...	0	4	19½
Sudder Ameens,..	0	3	25½
Moonsiffs, ...	0	2	21½

The number of Regular appeals to the Sudder increases while

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the special appeals have risen from 227 pending on 1st Jany., 1854 to 782 pending on 1st January, 1855. The number of original suits in the North West Provinces is in proportion less than in the Punjab. Sixty per cent. of the suits in the North West Provinces were for sums under 50 rupees. The "value of all the suits depending in the North Western Province Courts, at the end of 1855, was (inclusive of land and land rent suits) Rupees 1,20,29,110." It would seem therefore that under a cheap and simple procedure the number of small suits would increase. "The Original suits, decided by Native Judges, were 69,391, to 72 decided by the European Judges." There were 49,732 suits for debts, wages, and personal claims. The Judges are highly favourable to the new law of evidence, which has done much towards securing really just decisions. During the year Mr. Harington, a Judge of the Sudder Court, was deputed to visit several districts, and suggest reforms. The system of fees paid for serving processes has been revised. A certain number of men have been paid by the State to serve processes, and the fees carried to the credit of the State. The Lieut. Governor reports various improvements effected in the position of the Moonsiffs, and expresses his belief that "the character of the Native Judges of these Provinces, as a class, for the discharge of their duties, with honesty, capacity, and diligence, has, of late years, been sensibly raised." He looks, however, to a simpler procedure to conciliate the regard of the people, by placing the Judge in more direct contact with the suitors. He cordially assents to the leading principles of the Draft Code of Procedure, but would add rules precluding the employment of pleaders. He would also enable the Zillah Judges to make occasional circuits through their Zillahs. The Lieut. Governor reviews some other matters of detail, and observes that the introduction of a compulsory registration of documents in Saugor is under consideration.

In matters of criminal justice the returns prove that great crimes are punished with celerity and certainty. Murders spring usually from jealousy, and village quarrels. Murders for money appear rare, and violent affrays are infrequent. "There has been, on a comparison for five years, some increase of Criminal Trials for all kinds of offences, but the cases arising have been, on the whole, promptly disposed of, and the number pending investigation, before all classes of Courts, at the close of the year, was creditably small. In a population, not short of from 33 to 34 millions, the cases of only 2,657 persons, charged with offences, remained undecided. The average duration of cases, which came before the Police, was, including all the Districts, the Hill Province of Kumaon as well as others, 13½ days, and of those in which the Police were not employed, 9 days." The average

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duration of cases referred to the Nizamut Adawlut is from 3 to 3½ months. The average proportion of acquittals to trials was in all cases about 36½ per cent. In heinous cases, however, the proportion is higher, rising in Mozuffernugger to 62.05 per cent. "Of 4,619 persons tried at the Sessions Courts, 3,425 were convicted, or had their cases referred, with recommendations of punishment to the Nizamut Adawlut. The number of witnesses summoned during the year was 3,23,346, of whom 2,87,487 were detained but one day, 23,818 two days, 6,989 three days, 5,102 for four days and upwards." This is a favourable per-centage. In the Sudder Court three were convicted to one acquitted. The peculiarities of individual minds still however exercise an important influence on the decisions of Indian Courts. Eighty persons have been punished with death during the year.

Arrangements for holding quarterly Sessions at out-stations are highly appreciated by the people. The practice of fining criminals convicted of robbery, fraud or embezzlement has been extended. Checks have been placed on the practice of recording confessions. Two acts of some importance have been passed. "Act II. 1856, which enables Magistrates to take cognizance of all offences affecting the public, without waiting for a private complainant, or requiring a complaint in writing. Act IV. 1856, for the better preventing the malicious or wanton destruction of cattle, (a crime which was found to have been most injuriously prevalent in the Azimgurh District,) by making applicable to it the rules for the enquiry into heinous offences, which it is the duty of the Police to conduct without awaiting the complaint of a private prosecutor." Capital punishment is now inflicted in private, only persons of respectable demeanor and mature age being allowed to enter the enclosure.

The system of Police in the North West Provinces is that of Thannahdaree establishments located at different points. They have been revised, the number reduced, and the pay of the higher grades increased, to the improvement of their efficiency. One-third of the Thannadars now received sixty rupees a month and the remainder Rs. 40. Of the out-post Jemadars one-third receive Rs. 20 a month, and the remainder not less than Rs. 15. The Mohurrirs receive not less than Rs. 10, and one-third of the Burkundazes Rs. 5. The police of the Saugor division will be reorganized from 1st December, 1856. The Tehsildars have been invested with the control of the police. In large and populous cities a force of Burkundazes on superior pay but with no local duties have been placed at the disposal of the Magistrates. They are to be employed in important cases. The responsibility of the Collector-Magistrate for his magisterial duties has been more strictly enforced. Effectual measures have been

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taken for breaking up the criminal confederacies. The crime of Thuggee has almost ceased to exist. The dacoit tribes and gangs have been broken up, and the few that remain will speedily be suppressed. Professional highway robbery has disappeared, and poisoning on the high roads has at last ceased. An incessant vigilance has been exercised over the great thieving clans, the Boureahs, Sunoreahs, and others. The road police of the Grand Trunk Road, formerly a separate establishment, is now part of the regular police.

The existence of female infanticide in Benares has been revealed during the year. In one tribe of Goruckpore Rajpoots there has been no daughter for 200 years, and the very names of the marriage ceremonies are unknown. There are no influential Chiefs to be persuaded, and penal measures, of repression are under the consideration of the Sudder. Proposals for disarming the population have been considered and rejected. It is inexpedient to deprive the people of the means of self-defence. The Magistrates have been ordered to arm and train men selected from the police, that they may have the means at hand of promptly suppressing any local disturbance. Formerly, unless he called in the Military, a Magistrate had no support. In all revenue re-settlements a money salary of Rs. 3 is to be secured to each Chowkeedar, and paid by the Thannahdars.

An Inspector of Jails, in the North West Provinces was first appointed in 1844. His powers were gradually enlarged, particularly over matters of expenditure, and the office is now permanently established. The Lieut. Governor is decidedly in favour of central prisons, and in each of six military stations the Jail is being gradually adapted to hold three thousand prisoners. The stations selected are Agra, Meerut, Bareilly, Allahabad, Benares and Jubbulpoor. The Agra Jail has accidentally become the most important. The management of that Jail is efficient. It secures unitive labour. "The daily average number of Prisoners in confinement throughout the past year has been 22,366, the actual saving during the period as compared with the former rate of charges amounts to upwards of 3 Lakhs of Rupees, and the net saving, after deducting all charges on account of the salary of the Inspector General and his Establishment, has not been less than 12 Lakhs of Rupees in the ten years which have elapsed since the creation of the Office." The health of the prisoners in the Central Jail is as satisfactory as that of the smaller prisons.

"The essence of the revenue system is a minute definition, and a continued accurate record, from year to year, of every existing kind of right or interest connected with land in each village of the Country, and a close supervision by the higher

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Authorities, including the Government itself, of the proceedings of the District Officers in regard to these rights and interests, so that no novel incident of tenure shall remain anywhere undetected and unprovided for, and that accessible and prompt means of redress shall be at command against the infringement of every just possession."

Still Government does not attempt to arrest the changes rendered inevitable by the progress of Society. Attention has been called to the frequency of such changes. The Lieut. Governor reviews some arrangements of detail and thus analyses the orders issued for the resettlements. "Their leading points are that the record of measurements is to show clearly all sub-occupancies under other cultivators,—that the record of cultivating rates of rent is to be made with full publicity, and under the personal superintendence of the Settlement Officer, all rents being expressed in one consolidated sum,—that the statement of the village tenures and constitution is to distinguish, plainly, what is a binding contract for the Settlement, from what is merely a record of present facts, and that general speculative provisions are to be strictly excluded from this paper;—that, as there is little doubt that two-thirds is a larger proportion of the real average assets than can ordinarily be paid by proprietors, or communities, in a long course of years, about one-half of the *well-ascertained* net assets is to be considered the ordinary standard of the new assessment,—that due provision shall be made for the payment of the Village Police Chowkeedar through the Thannahs, and of the Putwarry through the Landowners, the incidence of the separate Road, School, and District dak cesses, and of the Chowkeedaree salaries being divided equally between the Owners and the Government,—and that the Representative or Manager on behalf of a Proprietary Community shall receive, for his risk and trouble, a remuneration of 5 per cent. on the amount of Government Revenue for which he is responsible, the number of such representatives being regulated and reduced as much as may be properly practicable in each case." The great measures of the year have been, 1st, the formation of circles of villages with one putwaree or accountant for all. Formerly each village contained a putwaree, but it is only by uniting them that a sufficient salary can be obtained to secure efficient men. 2nd, the putwarees are all to be educated in writing the Nagree character, in surveying by Plane Table, and mapping by Scale. 3rd, The systematic examination of the village papers. These papers have been too often mere copies year after year of settlement papers. The balances for the year amounted to 1.79 on the demands, owing to distress in Saugor and Banda.

No advances as a rule, are now made except for works of

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irrigation. The Lieut. Governor noticcs some arrangements of detail and proceeds to mention that the only dutiable articles on the customs' line of the North Western Provinces are salt and sugar. The salt taxation is in an unsatisfactory condition. "It has been clearly shown, by comparison of the quantity of Salt imported and of the population, that the consumption of the illicit salt per head is half of the consumption in Bengal and Behar." The Government desires to reduce the duty on superior salts to two Rs. a maund, and on inferior salts to Re. 1, thus enabling the taxed to compete with the smuggled article. The per-centage of cost to collection is very high 10 per cent. at productive points. The alteration of the customs' line introduced during the year has been successful, the taxes on superior salts have more than doubled. "The receipts from the Tax on Spirituous Liquors amounted, in 1854-55, to Rupees 20,87,612, having been Rupees 18,29,927 in the four years, from 1844-45 to 1848-49." This revenue grows but slowly. The manufacture of Beer has been tried in the hills. "The net receipts from the Stamp Revenue, were, in 1854-55, Rupees 15,24,594. This is also a slowly increasing item of receipt." The miscellaneous revenue amounting to Rs. 2,70,318 is almost entirely a forest revenue. The "first framework of a wide and efficient scheme of National Education, rising from the ordinary Village or Rural Schools to the very useful Tehseelee Schools, then to the Anglo Vernacular, or Vernacular Zillah Schools held at the Sudder Stations of Districts, and managed for the most part by different Missionary bodies, and ultimately to the Government Anglo Vernacular Colleges, may be said to have been satisfactorily devised, and, in some considerable degree, established." A full report upon the subject given in the Appendix. "It shows the large attendance of Mahomedan as well as Hindoo Pupils at the lower Schools,—the practically useful character of the teaching,—the great results which may be expected from adopting the Hulkabundee Village Schools as a part of the fixed administrative system of the country,—the means arranged for the publication of an enlarged series of school-books,—the extended preference given for all public employments to candidates able to read and write,—the increasing yearly sale of books of instruction,—the growing, though yet comparatively slight, demand for trained students from the Anglo-Vernacular Institutions for posts in the Public Service,—the want of good junior Masters for the Government Colleges, and of qualified Teachers for the Vernacular Schools,—the care taken to secure an improved teaching and use of

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English, as a language, in all the Colleges and Schools, elementary instruction in the junior Classes being given in the Vernacular Hindee and Oordoo of the Pupils,—the extension of the Educational staff of the Colleges,—the plans for placing Normal Schools at the head-quarters of each Educational Circle,—the views as to Grants-in-Aid to valuable private Institutions, and as to the completion of the establishments for instruction and inspection throughout the Provinces, and the state and prospects of the special Institutions, the Thomason Engineering College at Roorkee, and the Medical School at Agra." The entire territory except Nimar has been brought under the general scheme, and the expenditure amounts to Rs. 72,076 per annum. There are now 1353 Hulkabundee or village union schools with 23,686 scholars, 183 Tehseelee Schools with 9564 scholars. Teachers are greatly required and a Normal School has been established at Agra. In Agra and Muttra 95 female schools with 1799 scholars have been established. In some of these schools a condition is made that they shall be visited only by female Inspectors. Upwards of 250 school-books have been printed and published by Government. The Deputy Inspectors have been arranged in grades with different rates of salary. Grants in aid have been assigned to the extent of Rs. 19,500 a year.

The Grand Trunk Road extending with its branches for 837 miles costs Rs. 4,22,000 a year for maintenance. Of this sum about Rs. 70,000 are recovered in tolls. A new plan has been devised during the year for providing supplies for troops and travellers. "The main point in the plan is the location, at each halting place, of a Store House (Burdashtkhan) at which all articles of food, forage and fuel, &c. indented for by the Commissariat Department are retailed at determined moderate prices. The Retailers receive advances from the Government through the Collector of the District, and enter into engagements to supply certain articles at fixed prices for a definite period." Enclosed places for merchandize, and masonry troughs for horses have also been constructed, and many new wells sunk. The Agra and Bombay road has been improved, and arrangements made for its permanent maintenance by all the states through which it passes. The first division of the great Deccan road to Jubbulpore is to be bridged, and the second division raised and metalled. The Lieut. Governor details other arrangements for connecting the great marts of Upper India with existing routes, and proceeds to mention that the expenditure under the road committees has been

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From Road Fund,.....	4,59,761
„ Ferry Fund,.....	4,39,091
Miscellaneous,...	1,70,060
Grants-in-aid from General Revenue,	3,60,275
	14,29,187

Nearly 12,000 miles of road have received the attention of the Committees. The Nayool funds are usually expended in cleansing, priming, lighting and draining the principal towns. Meerut has been drained, and Mirzapore is to be. The inhabitants have subscribed Rs. 30,000. In Moradabad, Cawnpore, and Furruckabad similar measures will be adopted.

Water was admitted into the Ganges Canal in April, 1854, and in May, 1855 water was given out for irrigation. The Canal 800 miles long with 1,250 miles of distributing Channels had cost up to 30th April, 1855, Rs. 1,46,00,000, and the annual cost of supervision amounts to Rs. 2,37,376. The profit derived in the first year of its operations amounted to Rs. 64,061. Boats have begun to ply on the Canal. "The Western Jumna Canals form a system of irrigation by which the waters of the Jumna are made to fertilize the otherwise arid and sterile districts of the Delhi territory. The length of the main trunk and its branches extends to 443 miles, and the total expenditure incurred up to the close of the past year, has been 15,74,512 on permanent works, and 60,59,274 on Establishments, Repairs, &c. making a total outlay of 76,33,786. During the 36 years this Canal has been in operation, the revenue derived from it has exceeded 100 Lakhs, the annual profit, in round numbers, having been at the rate of 1 Lakh of Rupees per annum. The direct net income is now about 3½, and the expenditure 1½ Lakhs per annum, and the area irrigated from it 3,75,000 acres. This work is, in many places, merely a revival of the old Mogul Canal in the same part of the Country. Its present length is 137 miles of main, and 37 of branch Channel, with a system of Rajbahas or Water-courses consisting of 500 miles of main and 1200 of Village distribution." The channel however is faulty, and the drainage of the canal spreads malaria. "The expenditure upon permanent works up to the close of 1855-56 had amounted to 12,96,148 Rupees, and for repairs, establishments, &c. to 34,64,526 Rupees, giving a total expenditure of Rupees 47,60,673. The income during the same period has, after allowing 5 per cent. interest upon the capital invested in permanent works, exceeded the outlay by about a Lakh of Rupees, which sum now stands at the credit of the undertaking." The returns of the Rohilkhund canals have varied from 5 to 9 per cent. The canals in the Bhabur or forest waste at the foot of the Kumaon hills are covering the country with fertility.

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Several enormous swamps in particular one near Delhi, and another in Pillebheet have been cut up. The Report continues to notice the post office, finance, ecclesiastical matters, inland navigation and matters political but contains nothing on those subjects of interest.

A separate medical officer has been deputed as Vaccinator in Rohilkhund and Kumaon. He has vaccinated 82,287 persons within the year, and he reports that the people are not indisposed to vaccination.

The Government has taken measures to preserve the remarkable monuments of the country from further decay. One of the fine arches of the enclosure round the Kootub Nimar near Delhi has in particular been restored.

The Appendices contain the tables summarized above with some others :—

Area of N. W. P., ... sq. m.	1,17,601
Population, ...	3,42,65,876
Land Revenue, ... Rs.	4,59,86,032
Abkaree, ...	23,02,654
Stamps, ...	16,32,126
Miscellaneous, ...	4,39,478
Customs, ...	62,79,595
Post Office, ...	12,33,398
Total Revenue, ...	5,66,39,885
Local Funds, ...	12,77,132
Expenditure from Funds, ...	13,34,236

	1853-54.			1854-55.			1855-56.		
General Department,	11,62,686	14	7¼	11,42,552	4	4¾	13,06,024	5	9¼
Judicial Dapartment,	55,22,162	11	4¼	38,49,342	7	5¼	58,41,128	9	7
Revenue Department,	40,31,368	3	11¾	37,80,133	7	7	40,96,559	8	1¾
Excise Stamps, &c.,	1,82,819	2	0	2,19,167	9	4½	2,22,794	10	2
Pensions, ...	38,12,150	2	1¼	35,25,002	10	10	37,76,487	5	5
Post Office, ...	8,29,814	15	10	9,44,747	0	2	8,39,445	12	4½
Customs and Salt, ...	8,13,146	11	4	8,80,885	4	11	9,05,505	8	9
Public Instruction,	1,30,521	3	8	2,07,042	5	11	3,30,264	7	1
Miscellaneous, ...	2,53,373	6	10¾	2,45,272	5	9¼	3,72,780	10	6¼
Military, ...	93,479	12	11¼	92,356	4	7	90,619	5	0
Canals, ...	30,40,436	5	10¼	10,63,184	14	5¾	7,47,641	7	3
Total Rupees, ...	1,98,71,959	10	6¾	1,59,49,686	11	5¼	1,85,79,311	10	0¾

THE ADMINISTRATION OF PEGU.

In 1855-56.

"The country of the Lower and Central Irrawaddy, which was annexed to the British Indian Empire in December, 1852, con-

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tains about 32,250 square miles. It extends from the sea, on the South, to a line drawn along the parallel of 19° N. Lat. from the Arracan mountains, on the West as far East as the hills bordering the River Salween. The Province now to be described is situated in the valleys of two rivers, the Irrawaddy and the Sitang. These flow in a general direction towards the South. Their valleys are bounded, on either side, by mountain ranges. The range on the West of the Irrawaddy is that which separates Arracan from Burmah. Its extreme altitude is from three to four thousand feet. That on the East runs midway between the Irrawaddy and Sitang Rivers, and has an altitude not exceeding 1,500 feet. It is the water-shed, from whence tributary streams pour, East and West, into the two main rivers. On the slopes of this central range, the finest Teak forests are situated. It is generally called, by the Burmese, Yo-ma, meaning backbone or main range. On the East of the Sitang the first range of hills, termed Poungloung, 12 to 15 miles distant from the river, has a height of from 1,500 to 2,000 feet. From thence, as far East as the Salween River, is a succession of mountain ranges, the highest of which is 8,000 feet above the sea. The whole of these mountains are covered with fine timber-trees, well adapted for house-building and general purposes." The delta is intersected by salt-water creeks which are the highways of the country. The land is a rich alluvium returning a hundred-fold, even to bad tillage. The races who inhabit it are Burmese, Talaings and Karens, the first being the dominant, and the second apparently the aboriginal race. The Burmese speak a monosyllabic language differing from that of the Talaings. The Karens talk various dialects, but the Baptist Missionaries who have 10,322 converts or 50,000 persons under Christian instruction have reduced the language to writing. The Karens of the plains like the Burmese and Talaings are usually Buddhists. The Karens of the hills worship spirits. The Province has been divided into six districts, Rangoon, Bassein, Henzada, Tharawaddy, Prome, and Tounghoo. The Southern districts were tranquillized after the war in the spring of 1853, but in the North the remembrance that the British had quitted the country in 1825-26 unsettled the minds of the population. These districts also and Tharawaddy in particular were infested by armed dacoits, and it was not till the early part of 1855 that the entire province had rest, and civil administration commenced. "Each township was placed under a Burmese officer, with the designation of Myo-oke, and he was entrusted with moderate Judicial, Fiscal, and Police powers. Immediately below the Myo-oke were the Thoogyees, or Revenue and Police Officers, placed over circles, each circle containing several vil-

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lage tracts." Under them a Goung was appointed over every hundred families. They assist in revenue matters and perform the duties of a village constabulary for Rs. 10 a month each. A River police was organized, and three police battalions about 1,000 strong altogether. They have proved useful. Each district was placed under an Assistant Commissioner or Deputy Commissioner. "The control of every Department, Civil, Criminal, and Fiscal, within each district, was committed to the Deputy Commissioner." The Bengal Criminal Code is the general guide, but perjury and adultery are punished.

Soon after the annexation Major W. F. Nuthall was employed to raise the Pegu Light Infantry, and in spite of the objection of the Burmese to discipline, the regiment 500 strong proved itself efficient. The boundary was surveyed, defensive posts established, the population disarmed, and the province finally tranquillized.

The Burmese have a proneness to murder. Like all Budhists they hold all life sacred, and therefore attach no special value to human life. 37 murders were committed in 1855, but violent crime in the Rangoon district has decreased to half its amount in 1853. There were 79 cases of crime of the second class, and 1407 of the third. Gang robbery is still frequent, 90 cases having occurred. River dacoity is not yet put down, and cattle stealing is very common. Perjury is not common, and the people bungle when they attempt it. Of 8666 persons arrested on criminal charges in 1855, 6,000 were convicted, or 69 per cent. This is before the district Courts. Before the Sessions Courts the acquittals exceed the convictions, 26 persons having been acquitted in one case of gang robbery. No regular jails have yet been recovered, but the jail emeutes, at one time frequent, have ceased. The Burmese suffer from imprisonment more than natives of India. "The officers appointed to administer Civil Justice, in the several districts, are Deputy Commissioners, Assistant Commissioners, Tseekays, and Myo-okes. The Myo-okes are empowered to hear all original suits arising within the township to which they are appointed, in which the value involved, or amount claimed, does not exceed Rupees Five hundred." A Tseekay can try up to Rs. 3,000, and an Assistant Commissioner up to Rs. 5,000. "Original appeals are heard by the Commissioner, and also special appeals, on cause being shown." The mode of procedure is that of the Tenasserim Provinces. In the native Courts Burmese is the language of record, in the English Courts English. In Rangoon cases involving less than Rs. 50 are decided summarily. The defendant is warned to appear. If he does not the case is decided against him. This plan gives satisfaction. In Rangoon in 1855, 1873

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cases were heard for sums not exceeding Rs. 5,000, 2 for sums between 5 and 20,000, and twelve from 20, to 40,000 Rupees. The amount in litigation in Rangoon has doubled in a year. "In the sea-port towns, the English law governs all cases connected with shipping, freight, and commercial transactions generally, specially those between foreigners." Debtors however are no longer the bondsmen of their creditors, rules for conferring a title to land have been passed, and in the town of Rangoon legal documents must be registered.

It is difficult to ascertain the revenue paid to the Burmese Government by Pegu but it was probably Rs. 15,71,498. The present revenue is Rs. 30,21,062, obtained from

	Third year, 1855-56.		
	Rs.	A.	P.
Land, ...	9,35,988	7	5½
Capitation Tax, ...	7,36,688	14	5
Fisheries, ...	2,72,036	10	0
Salt, ...	49,715	8	0
Forest Produce, ...	1,650	0	0
Excise, ...	1,76,530	10	3
Sea Customs, ...	1,70,927	8	2
Inland Customs, ...	3,91,888	13	4
Municipal Tax, ...	30,878	7	0
Port Dues, ...	27,501	3	0
Rent on Building Lots, Town of Rangoon,	9,869	0	0
Timber Revenue, ...	80,593	14	9
Judicial Fines and Fees, ...	74,313	10	0
Sale of Unclaimed Property, ...	11,197	9	11
Bazar Rent, ...	15,233	15	5
Ferries, ...	933	8	0
Postage Stamps, ...	11,750	6	3
Miscellaneous, ...	23,364	5	9¾
Total, ...	30,21,062	7	9¼

The revenue has risen from 72,44,000 since annexation. Rice is the only green product of the country and in 1855-56 1,26,674 tons were exported. The settlement is made with individuals not coparceneries. Each cultivator usually holds from 5 to 10 acres. One-fifth of the gross produce is calculated as the Government share, but the revenue is paid in money. The capitation tax is a tax of Rs. 4 on every married family. It is not disliked, but in the towns it is commuted into a house tax. "The total value of imports and exports of

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every description, by sea and river, during the year 1855-56, was as follows :—

Imports, ...	Rs.	1,26,54,710
Exports, ...	„	66,36,785
Total value, Rs. ..		1,92,91,495"

Only one school has as yet been established by Government, but the American Baptist Missionaries have normal schools, and village schools. In the Bassein district alone there are 38 of these village schools with 1008 scholars.

The Chief Public Work commenced is the road from the Bay of Bengal across the Arracan Mountains to Meaday. It is 157 miles long and is passable for 154 miles. Plans and estimates have been submitted for a road from Rangoon to Prome. A line of Electric Telegraph has been extended from Rangoon to Meaday, a distance of 211 mlies.

The city of Rangoon has been improved. "It is divided into large blocks of buildings 860 × 800 feet, by streets of 10 feet width, intersecting each other at right angles. Each large block is divided into five smaller blocks, and these again into building lots of five classes." 1,323 building lots have been sold, which with timber yards and suburban allotments produced 90,000. Rent is received for certain lots amounting to Rs. 9869. 11,00,473 have been expended on the town and Rs. 1,52,649 on the Cantonment. The Commissioner describes certain projects the most important of which is a canal to open out the head of the branch of the Irrawaddy called the Bassein river. Works to protect the land from floods are much required. The town of Menzie has been laid out as the chief town of Irrawaddy about two miles from the Irrawaddy, with which it is connected by a raised causeway.

There is one sea steamer attached to the province, and six inland steamers keep up the communication on the Irrawaddy.

The total civil expenditure of the province is Rs. 17,01,181. There is no prospect of an increase of expenditure equal to the increase of the revenue.

The census shews a population of 5,82,253 souls, but it was very carelessly made, and the Province probably contains a million and a quarter of people. The causes of this strange paucity of population are unknown, but a vast proportion of children die before reaching maturity. Emigrants must be supplied from India, for the Burmese and Chinese bring no women, and the Shans are too far off.

Agriculture is still very rude but cotton is produced in considerable quantities on the uplands. All efforts to introduce

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foreign cattle have failed. The indigenous breed of cattle is good, but small, and sheep farms have been successful. The new system of preserving the forests arranged by Dr. Brandis, the Conservator is "*First.*—Trees to be killed and felled under direction of the forest officers, by contract with the inhabitants of the villages adjoining the forests.

Second.—The timber to be dragged and floated to Rangoon on the Government account, either by villagers or others, as may be found most convenient; and by contract, at a fixed rate per tree, whenever such an arrangement can be made.

Third.—Periodical sales of the timber to be held on Government account at Rangoon." Means have been taken to check the destruction of the forests by fire, and nurseries have been established.

The survey has completed 14,000 square miles of country at 7 Rs. a square mile.

The great immediate benefits of the annexation to the people have been the abolition of forced labour, and the opening out of a foreign trade. There cannot be any carrying trade between the sea-board and China, as the Chinese prohibit the entry of manufactured goods, and the export of raw produce. The import trade will not therefore extend beyond the requirements of the population in the countries drained by the Irrawaddy and the Salween. The Appendices contain the details summarized above.

REPORT ON THE HYDRABAD ASSIGNED DISTRICTS.

For 1855-56.

"THESE Districts came under the management of the Officers of the East India Company, according to the Treaty concluded by Major General Low, C. B., late British Resident at Hydrabad, on the 21st May, 1853. Final and detailed instructions were issued by the Supreme Government for the guidance of the Commission on the 31st January, 1856. By those directions, the management of the Hydrabad Assigned Districts is required to be as much after the Punjab model as possible, as well in the Survey and Settlement of the Land, as in the Administration of Civil and Criminal Justice, and in the Police Department." Special directions have been given not to resort to a Ryotwarry settlement if a settlement with village coparceneries is possible.

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The report contains a table shewing the amount of area, population, and litigation. All the establishments are under revision, no jail buildings have been constructed; out of 6,257 persons arrested for crime in 1855, 4,655 were convicted 3,510 of whom were fined and discharged. Returns of crime are added but they are declared to be of no value. Thuggee has disappeared. Gang robbery has decreased, but there is still much violent crime.

The Commissioner quotes certain details from the reports of district officers. In North Berar the condition of the cultivators is wretched, but improving. It has been determined to replace the ryotwaree by the village system which existed till the decline of the Delhi power. Proprietors still exist in the villages. The Police is to be improved, a town police has been established, and the house or rather property tax has been replaced by an octroi. Education has as yet been neglected in all the districts, and the only public works completed are the Madras, Masulipatam and Tumulgherry Roads.

The revenue has provided for all the requirements of the treaty. In 1856-57 had the expenditure not been increased there would be a surplus to the Nizam of nearly a lakh a year. The reorganization of the Commission costs however Rs. 3,09,712 a year. The receipts will vary but little till the new improvements begin to tell on the condition of the country.

The remainder of the report is of mere local interest with the exception of a description of "the Natron Lake of Lonar, occupying what by some Geologists is supposed tō be the centre of an extinct Volcano. The depression is a singular and unexpected one and forms a curious interruption to the generally undulating character of the District. The Lake is 510 feet below the level of the surrounding ground, its outline is rounded, the circumference being about three miles in extent. The sharp edge of the excavation is five miles round; the inner surface of the excavation rises abruptly at a high angle, and its surface is covered with luxuriant vegetation. The Lake, a sheet of still water, green from *confervæ*, emits an intolerable stench of sulphurated Hydrogen, especially during the heat of the day, when bubbles of that and other gases rise freely to the surface. The mud close to the margin of the Lake is thick, black and tenacious from the mixture of Rezin, Natron, and Alum. At two points about ¼ mile from the margin distant from each other about ½ a mile, are two saline springs, and it is supposed that the Muriate of Soda in these uniting with the Carbonate of Lime, found abundantly in the Lake water, as well as in that brought from the surrounding water shed, causes a mutual decomposition, Carbonate of Soda and Muriate of Lime being formed. Be

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that as it may, the deposition of Natron in large quantities is constantly going on, and has for many years formed a source of profit to Government. Of this Salt, six principal varieties are recognized by the Natives. These vary in purity, and consequently in value; the best varieties contain upwards of 50 per cent. of the neutral Carbonate of Soda. In North Berar, lying obliquely between Akolah and Thoogoon and upon both sides of the River Poorna, lies a tract of Country about 50 miles long by 30 broad, in which are found numerous Brine Wells, from which Salt in large quantities, but not of first-rate quality, is obtained." These wells yield an inexhaustible supply of salt. The Appendices contain the usual statistics and a correspondence from which it appears that cotton, equal to Georgia upland cotton, can be grown in Hydrabad.

THE STRAITS SETTLEMENTS.

In 1855-56.

"The British Settlements in the Straits of Malacca are three in number, *viz.* Prince of Wales' Island, or Penang, Malacca and Singapore." The British flag was first hoisted in Penang on 11th August, 1786. Various bits of territory were acquired before 1830 when the whole settlements were placed under the Government of Bengal. In 1852 they passed under the Government in India. "Like the Presidencies of India, the Straits' Settlements are under pure English Law, administered by a Recorder's Court. This single Court, extending its Jurisdiction over three distinct and isolated Settlements, two of them nearly 500 miles distant from each other, was constituted by Royal Charter dated the 27th of November, 1826. This Charter provides that the Court shall consist of the Governor or President, the Resident Councillor of the Station where the Court shall be held, and of one other Judge to be called the Recorder, who shall be a Barrister of five years' standing." This arrangement was found inconvenient, and in March, 1855, two Recorders arrived with a new Charter. The new Charter however beyond appointing an Additional Judge was no improvement. The want of a Small Cause Court is very severely felt. Criminal justice is administered by the Recorder who holds a Session thrice a year at Penang, three times at Singapore, and twice at Malacca. The Court of quarter Sessions is held once a

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fortnight and consists of one of the Resident Councillors and one Justice. "At each Station, one of these Justices is a salaried Officer of the Government and an Assistant to the Resident who is appointed the Sitting Magistrate." The Police have no legal existence there being no Police Act. The expense is defrayed from a municipal fund. The police is not thoroughly efficient, though that of Singapore was brought by the late Superintendent into excellent order. Justice is much impeded by the secret Chinese societies which though not opposed to the Government are opposed to the course of justice. They are powerful and unscrupulous and obstacles are removed by menaces, bribery or murder. Two of their oaths threaten any one who does not resist justice or who accuses the wife or maid-servant of a member. It seems doubtful whether these societies can be put down by legislation.

The Revenue of the Settlements is derived more from the vices than from the industry of the people. The excise farms of Penang during the past year brought in Rs. 1,82,520, and the rent of land in Penang and Province Wellesley Rs. 51,259, judicial fees and fines produce Rs. 21,533. The total revenue of Penang amounted to Rs. 2,63,769. The Revenue of Malacca from excise and the tenths on tin is Rs. 20,585. The total Revenue of Singapore is Rs. 5,96,365. Neither in Malacca nor Singapore is there any land revenue in the Indian sense. Titles in Malacca are complicated by the fact that the Dutch proprietors sold their rights to Government so long as the British flag should fly over Malacca. Perpetual sale is therefore out of the question. The expenses amount to Rs. 14,13,757. "The Straits' Settlements pay their own local expenses, they pay the expense of maintaining a body of 3,800 Indian convicts, and they contribute a sum of near a lakh and a half of Rupees towards the payment of the Military Force from Madras forming the Garrison." The Netherlands Government has permitted nutmeg seed to be obtained from Banda. The nutmeg of the Straits has deteriorated, and an infusion of fresh seed from the parent soil may revive it. The Municipal receipts for the three Settlements amounted to Rs. 2,38,047 and the Municipal expenditure to Rs. 2,27,252. "There is every reason to hope and to expect, that under the new Acts, the general funds of the Committee will be considerably augmented, the Police be better organized, and the Conservancy of the Towns more stringently attended to." The population is described in an unpublished Report by the late Registrar of the Court. Province Wellesley contains about 1,20,000 inhabitants of which very few are Europeans They consist of all Asiatic races, the women alone being exclusively Malay. The Chinese are most numerous, and next the

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Mussulmans from India At Singapore there are 70,000 persons of whom the Europeans number 250 males. The paucity of women in all three settlements is incredible, whole villages being often without a woman. In Malacca, there is this peculiarity that although the Asiatics who inhabit it are of all races, Malacca is their native place, and they have dwelt there for generations. It seems probable that the first emigrants were forcibly retained by the then rulers of Malacca.

There were on 30th April, 1856, 3845 convicts in the settlements. "On arrival they are placed in the 4th class and are kept at work on the roads, in irons, for eighteen months, when, if their conduct be good, their irons are taken off, and, at the expiration of eight years, they are removed to the 2nd class, and gradually rise to become officials, under the designation of Orderlies, whence they may rise to be Peons, Jemadars, &c." The system works well, as there is nowhere to go but to the jungle. The convicts execute all public works, and may therefore be useful. The expense of keeping them is more than repaid by their labour. The short term convicts are troublesome but not the life convicts. The Chinese convicts it is impossible to secure, if they have friends outside to assist them. The port of Singapore is free, and last year 3,659 iron guns, 6,15,165 lbs. of gunpowder, 1,699 cwt. of iron shot, 15,259 muskets, 5,230 musket locks, 101 revolvers, and 2,559 pistols were imported. This importation affords great facilities for piracy. Four junks examined were found to be very heavily armed, but they were permitted to depart.

The total value of the trade of the three settlements in 1854-55 was Rs. 10,05,74,333. The chief export of Penang is sugar and spice. Malacca exports tin to the value of Rs. 11,15,674 and Singapore pepper and gambier. The importance of the trade depends in the opinion of the Governor on the freedom of the port.

THE POST OFFICE.

In 1855-56.

The uniform low postage rates came into operation on 1st October, 1854. Every post office with a few exceptions is now in charge of a Resident and responsible Post-master. Inspecting Post-masters are usually chosen from among the Post-masters. There are 9 inspecting divisions in Bengal, 10 in Madras, 9 in Bombay, and 12 in the North West Provinces. There are 753

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post offices, and 61 receiving houses. The mails are conveyed by train, by cart, on horseback, or by runners, according to local circumstances. The maximum rate by carts is 7 miles an hour, and by runners 6. Dr. Paton remarks on some of the causes of detention, and observes in August, 1854, there were received 15,90,223 covers, or 1,90,82,676 a year while in 1855 there were 3,02,10,792, and in 1856, 3,37,58,076. The increase under the new system is 76·9 per cent. The proportions are 1,66,74,732 of paid letters to 79,12,056 bearing. The Postal Commissioners believed that an increase of 147 per cent. must take place before the postage revenue will recover itself. The increase of chargeable correspondence is already 101·9 per cent. "The number of newspapers, which passed through the post office, in April, 1855, exceeded the number in August, 1854, by 1,05,458, or 83·4 per cent., and the number, in April, 1856, exceeded that, in April, 1855, by 28,986, or 12·5 per cent." The number of service letters in 1856 is estimated at 58,20,408, against 50,84,904 under the old rates. The number has increased under the new rules 14·4 per cent. though the privilege of franking is withdrawn from upwards of a million of persons. Dr. Paton accounts for it by the increased activity of all public departments. In 1856 chargeable parcels were transmitted at the rate of 2,99,076 a year, and service parcels of 1,78,272. The service parcels increased by 84·6 per cent. The estimated number of books for 1856 is 67,248 imported, and 1,05,456 Indian. The number has increased 29·3 per cent. in the year. The increase since the reduction of rates is 477·06 per cent. The estimated number of registered letters is 8,34,908, the increase in one year being 49·4 per cent. The estimated number of chargeable letters sent by the district post is 19,18,344, or an increase of 27·7 per cent. on the number last year. 1,12,872 newspapers are thus sent in a year. The estimated number of bearing letters in 1856, is 79,12,056. "In April, 1855, the paid exceeded the bearing letters by 290·7 per cent.; in April, 1856, the paid exceeded the bearing by only 110·7." The cause of this increase in bearing letters is the distrust of the post office. Only forty-four instances of robbery have occurred, though more articles of value are transmitted through the Indian post office than through any post office in the world. There are 22,644 persons employed in the post office department, and 4,215 for the bullock train. This train proceeds 1,562 miles, and the profits last year were Rs. 25,483 in Bengal and Rs. 1,16,530 in the North West Provinces. So complete is the confidence of natives in the train that large sums of money were remitted by it.

The value of stamps sold during the year was Rs. 8,57,007.

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The receipts in 1849-50 were Rs. 19,27,358. The receipts in 1853-54 were 19,92,870. The receipts in 1855-56 have been 16,25,488. "The Postal Commissioners calculated that, if no increase of correspondence took place, the utmost loss that the post office could suffer would be Rupees 9,12,007-7-11." The newspaper postage has almost reached its old rates so; have the receipts on parcels. The following table shews therefore the financial result of the reform:—

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Presidency.	Net receipts.	Deduct Gross Disbursement in 1855-56.	Deficit.	Official Postage.	Surplus.	Net Deficit.
Bengal, ...	5,37,645 11 10	8,12,197 1 4	2,74,551 5 6	3,95,586 10 9	1,21,035 5 3	0 0 0
Madras, ...	2,99,261 9 10	5,56,285 2 2	2,57,023 8 4	2,72,969 7 0	15,945 14 8	0 0 0
Bombay, ...	3,00,860 4 7	8,36,762 6 0	5,35,902 1 5	3,86,243 13 0	0 0 0	1,49,658 4 5
N. W. Provinces, ...	11,77,214 8 5	12,50,392 6 7	73,177 14 2	5,65,862 8 0	4,92,684 9 10	0 0 0
Total, ...	23,14,982 2 8	34,55,637 0 1	11,40,654 13 5	16,20,662 6 9	6,29,665 13 9	1,49,658 4 5
					Net Surlus, ...	4,80,007 9 4

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From the gross receipts Rs. 2,25,000 must be deducted for steam postage, and the deficit will then be Rs. 11,40,654. If however credit be allowed for the official postage the surplus is Rs. 4,80,007. In 1854, the steam postage being deducted and the official postage credited the net surplus was 7,71,089. The Appendices contain the details summarized above.

THE ELECTRIC TELEGRAPH.

For the last quarter of 1855-56.

THE Appendices to this report, which is occupied with small details, shew that Rs. 1,74,168 were received for paid and Rs. 53,531 for service messages during 1855-56. The number of messages was 39,950 of which 11,790 were sent by natives. There were 331 complaints in 275 of which the money was refunded.

KATTYWAR.

Bombay Records, No. XXXIX.

ON 18th June, 1804, Lieut. Col. A. Walker, Resident at Baroda, reports on the condition of the provinces recently acquired from the Peshwa and Gaekwar. The pergunnah of Neriad "contains about 1,14,135 beegas of land, of which 69,504 are in cultivation; 15,142 waste, but arable;" and the remainder useless. The Resident gives some details of the tenures, and observes that half the produce belongs to the Sirkar, and the other half to the ryot. The ryot however pays 2½ seers out of every maund of grain to village officers, and to the Sirkar. Moreover, the ryot pays 2 Rs. a beegah for land of the first quality, 1 Re. for the second and 8 annas for the third. The Mehwasee villages pay a fixed sum. "The principal produce of this district consists of tobacco, rice, zinglee, jowaree, bajree, mutt, and kodra. There is likewise a little wheat, and cotton, and different kinds of pulse." The Resident describes the local officers, and mentions that the Patels fix the jummabundee. Pergunnah Matur contains 71 villages, and is under the system which prevails in Neriad, but the revenue is paid in specie. Tobacco lands pay Rs. 10, 12, or 15 to the Sirkar. The Resident

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gives the names and pay of the local officers, who are supported by jaghires, and enams. Pergunnah Mondeh contains 92 villages, and the revenue system is identical with that of Matur. The produce consists of "tobacco, mutt, bajree, rice and bowta." Rice costs Rs. 2 a maund. The fort of Kaira is in Matur surrounded by a jaghire of thirty villages cut off from the pergunnah. The uncultivated portion of the district is given up to cattle. The proprietor takes half the produce or a rent in silver. The tax amounts from Rs. 4 to Rs. 12 per beegah.* Napar is near Neriad, and "contains 22,933½ beegahs of land, of which 19,445½ are under cultivation, 1,979 waste, but arable, and 1,509 supposed incapable of cultivation, being occupied by houses, tanks, wells, roads, &c." In practice the Sirkar receives half the produce, and 2¼ seers out of every maund of the remaining half. The revenue is levied just after reaping.

The chouth of Cambay is a proportion of the revenues payable to the British. It involves the right to appoint a Collector but no territorial possession. The rents of Sumaood in Pergunna Kuree have been regularly paid.

Pergunna Beejapoor contains 70 villages, but much land is waste. The revenue is paid in grain or specie, the produce being equally divided. There is a tax of Rs. 15 on every plough. The soil is not good, and the revenue is paid by instalments. Dholka, the most important Pergunnah, contains 200 villages and a great city. In the Mehwas villages the revenue is collected by an armed force, and one landholder the Kounte Rajah keeps 2000 sebundees in a fortress in the jungle. The Grasias are connected by relationship and we have no right to interfere in the internal administration. The town of Dholka contains 50,000 people chiefly turbulent Mussulmans. They injure the public revenue, but nothing can be done without a military force. The taxes are levied by an annual assessment the half produce going to the Sirkar. Wheat is the principal produce. The revenue is received by instalments. Pergunna Dundooka contains 103½ villages. All but one pay a contribution but owe no obedience. In the one Kusba not alienated the Sirkar receives six maunds to the ryots' nine. The soil is inferior. In Rampoor also only one Kusba and three villages belong to Government. The rest is held by independent chiefs, who have troops and forts. The Moguls used to overawe Kattywar from Rampoor. The independent chiefs pay a small tribute in money. In Government villages rent is received in kind. The amount to be paid is regulated by local rules, and varies according to crop. In Gogo the

* Size of beegah not given. It is not the standard beegah of course.

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Government possesses the town only, 145 villages out of 148 being under independent chiefs. Gogo is a great commercial mart. The head of the independent chiefs is the Raja of Bhownugger. He has 7000 infantry and 700 cavalry. Most pay to the Marhattas, and to the Nuwab of Joonugger as well as to the British. The actual jumma of all these Pergunnahs amounts to Rs. 12,92,936 a little in excess of the revenue ceded to the Company. These revenues may be doubled in four or five years by bringing waste lands into cultivation. The proprietary right in the soil vests in individuals as well as in the Sirkar. The Grasias and Kooles who are aborigines hold by prescription. Their rights have outlived the Mussulman dominion. In undivided inheritances all must consent to a transfer. The second kind of property is derived from grants from the sovereign. The proprietors usually assess at lower rates than the Sirkar. The cultivator has a kind of right by prescription. Ejectment would be considered oppression. The village officers called usually Desaees, Patels, Mozoomdars and Tulatees represent the villagers, and are paid by exemptions and fees. There are Zemindars, but they are in reality Enamdars. The land and transit customs amount only to Rs. 1,04,000 a year. Cavalry are required to realize the revenue. The creed is the same as that of India generally. The Grasias, Koolees and Bheels are all treated by the Marhattas as outcasts, and will live quietly under the Company's Government.

On 10th May, 1804, Mr. H. W. Diggle reports that in these districts the Grasias are independent while the ryots look up to the Government. Almost every Grasia's village is a fortress, and his dependants acknowledge no other lord. As administrators of justice the Grasias are venial, but there is a sect called Bhat who stand security in all cases, and sit in dhurna till the obligation is fulfilled. It is always fulfilled, even if fulfilment involves the sacrifice of life. The regular administrators of justice to the ryots are the Komavisdars or farmers of the revenue, but both Grasias and ryots resort to arbitration. There is in fact no rule, no justice, and no equity in this part of Guzerat. Crimes are compounded for by a fine, and among the Grasias murder is usually avenged by the relatives. It is a point of honour among the Grasias to give protection to the perpetrator of a crime. Suspicion is sufficient to justifiy torture. Mr. Diggle recommends a regular Court for the ryots, and thinks the Grasias will gradually recognize its advantages.

On 28th March, 1805, Lieut. Colonel A. Walker again reports that under the Marhatta Government all crime was commutable for money. The Patels were the instruments of every oppression. The people distrusted the Gaekwar's Government, and in

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one instance demanded from it every year a hostage. The administration of justice was entirely neglected. No power was entrusted to natives. The native officers were always controlled by Marhattas. Colonel Walker again describes the power of the Bhats, and notices some social differences in the districts. Under the Mogul Government, the Grasias were stripped of three-fourths of their lands, which they received again to cultivate for the Government. Colonel Walker considers that the revenue should be collected from the ryots or the Patels. Under the Marhatta Government the Kusbatees or soldiers of fortune leased the villages. These leases were renewed, and the tenants though only temporary often sold them. Other villages were under Mahajuns or Manoobdars. Both should be abolished. The Resident continues to describe the tenures admitting that the principle of the Marhatta Government was to take half the produce, but observing that in reality a new settlement was made every year. On 20th July, 1806, Lieut. Col. A. Walker reports on Dundooka, Rampoor and Gogo. He enters into official details, and observes that these districts never yielded so much under the Marhatta Government as they now do. The Government must pursue any enquiry into titles with great caution. The revenue derived from the Grasias is tribute not revenue and can only be increased by force. An investigation into the profits of village officers would be expedient, but the substitution of salary for fees should be gradual and quiet. The Resident discusses some reforms proposed by Sir Miguel deSouza, and the rank and titles of different Grasias. Generally speaking they all possess the power of life and death. Formerly they enjoyed the right of making peace and war. "It would, however, be extremely desirable to dissolve these discordant authorities, and to consolidate all the inferior separate jurisdictions under the Company's power." Col. Walker considers reform possible, but it must be slow and gradual. He encloses a memorandum from Amrut Lall, Agent for the Peshwa's Government, of little interest. He confirms the account of the independence of the Grasias. Some translations given from a work by the Dewan of Ahmedabad also confirm this theory. On 23rd Jany. 1804, Major A. Walker, Resident at Baroda, reports several Chiefs of Kattywar requested the protection of the British Government. The Resident recommends that the British relations with these States be improved, and that two corps with a proportion of artillery be sent into Kattywar. On 22nd February the Government replies that it will be pleased with acquisitions fairly obtained, but that care must be taken not to involve Government in inextricable intrigues, and not to commit injustice. On 14th March, Lieut. Col. Walker replies that the object of the Chiefs is to secure themselves

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from further exactions, and that with the exception of the payment of tribute they are independent, and at liberty to form relations with any one they choose. He thinks the rights of all parties should be secured by the Company's guarantee, and if necessary maintained by force.

On 14th February, Lieut. Col. A. Walker submits a memorandum on Kattywar. In it he says the subject of consideration comprises "1*st*, to assist the Gaekwar Government in recovering its tributes, or military contributions under the name of Moolukgeeree; 2*nd*, to effect an establishment in Kattywar; and 3*rd*, to take under our protection several princes, who have preferred applications for that purpose." All these advantages must be obtained by force. On 9th May, 1807, the Resident informs Government that he has addressed the Chiefs of Kattywar informing them that the Moolukgeeree jummabundee must be paid to the Gaekwar, and that without the annual despatch of an army. Therefore the armies of the Company and of the Gaekwar are approaching Kattywar. On 3rd August, 1807, the Resident reports that the chiefs have submitted. On 19th August, the Government expresses its satisfaction at answers "such as you will, it is trusted, be able to mature into a permanent adjustment with them, for the future punctual payment of their tribute to the Gaekwar State, under the instructions with which you have been already furnished."

On 7th October, 1807, the Resident reports his proceedings with relation to the Chiefs of Jhalawar. Jhalawar, borders on the Western districts of the British territories and those of the Gaekwar. He describes the "Bhyads" or Grasia undivided families, and the securities it was customary to take from them. "In most parts of Jhalawar the cultivator proceeds armed to his ground, and each village has a high tree, or other elevated station, where a villager keeps watch, to announce the approach of horse, upon which the cattle are driven off from the fields, under shelter of the village." He describes the horsemen who create this terror, and who are wandering bands under different names resembling the Pindarees. The plan adopted to secure the Moolukgeeree revenue was to take bonds from the chieftains under the security of a Bhat.

On 11th November, 1807, Lieut. Col. A. Walker, reports on Muchoo Kanta. "The district of Muchoo Kanta is thus called from being situated on each side of the river Muchoo, in the western peninsula of Guzerat. It is bounded on the north by the Runn, which communicates with the Gulf of Kutch, and which separates it from Waghur; on the east by the river Goradroo; and on the south and west by the course of the Adjee river, which discharges itself into the sea in the Talooka of Balumba."

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Kayajee, a member of the Kutch family obtained Muchoo Kanta to himself. His eldest son settled in the town of Moorvee. Two others settled in Mallia, and other villages. The owner of Mallia invited the Meanas, a race of thieves to settle in Mallia. A quarrel broke out therefore between him and the Moorvee Raja, the head of the family, which became a feud. In 1303 the Gaekwar sent an army to obtain his revenue then six years in arrears. He obtained three years, and after a variety of intrigues the Chief of Moorvee engaged to pay five lakhs of Koorees. Some of this money remained unpaid in 1807. The Resident acting in concert with the Gaekwar therefore induced the Chiefs to come to an accommodation, ordering them to pay the Rs. 3,22,000 by instalments. The demand from Mallia was also reduced from 2,83,255 to 1,00,000 koorees to be paid in three instalments. The bonds are given in full in the Appendix.

On 20th November, Lieut. Col. A. Walker, reports on the condition of Nowanugger.

Jam Jessajee, the Chief is oppressive, and possessed himself without right of the fortress of Kundorna Rana Ra belonging to the Chief of Porebunder. The Jam refused restitution and collected forces. The British detachment and the Gaekwar's troops therefore marched against him. After some negotiations they advanced on the capital. The Jam still refused to make any concession. The Resident therefore resolved to place Kundorna in the hands of its legitimate owner, and compel the Chief of Porebunder to come to an accommodation.

On 12th December, 1807, Lieut. Colonel A. Walker reports on the condition of Gohelwar. After describing the origin of the State now called the State of Bhownugger he remarks that the Chiefs of this family have suppressed piracy, have rendered Bhownugger an emporium of trade, and have agreed to make an accommodation with the Gaekwar.

On 16th December, 1807, Lieut. Colonel A. Walker reports on Porebunder. After recounting the history of the State he remarks that the State possesses a standing militia called the Sword of the State, through whom public opinion is conveyed. They are almost exempted from taxation. The Raja agreed to the settlement with the Gaekwar, if Kundorna were restored. It was restored and the agreements were signed.

On 12th January, 1808, Lieut. Colonel A. Walker reports on Soruth. It contains Diu, and Jafferabad, valuable ports. The Resident gives in detail the history of the reigning family, and observes that the Nuwab agreed to the new and permanent arrangements for the payment of the Gaekwar's revenue.

On 25th January, Lieut. Colonel A. Walker reports that the

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Jharejas of Hallar have submitted to the terms imposed on the other Chiefs, they were compelled to refund the value of their robberies, and solemnly to renounce the practice of infanticide. The country was found frightfully disorganized.

On 7th February, Lieut. Col. A. Walker reports on the condition of Kattywar Proper. "The division of Kattywar Proper is bounded on the south by Babriawar; on the east by Gohelwar; on the west by Soruth and Hallar; and on the north by Jhallawar." The people claim an origin from Khat, an individual created by Kurrun, vizier of Doorjoodan to steal some cattle. His descendants received the right of stealing cattle without sin. They emigrated from Powar, and after adventures protracted for centuries they in the decline of the Mussulman power became powerful in Guzerat. There some of them renounced their predatory habits, but the majority are still thieves. "The Kattees are not numerous, and their mode of life is unfavourable to population. They are formidable by their boldness and dexterity, but in their great incursions they supply their want of numbers by hiring the horsemen of the country. They pay their mercenaries liberally, and reward those who may suffer, but never allow them a share of the booty; the profit and loss of the adventure are their own. Some of the Chiefs live in forts or castles, in which they secure their plunder, and retire on any external danger." Their principal booty consists of cattle. They agreed to pay the revenue regularly. In an Appendix, Col. Walker gives some further facts respecting this strange people. Their most distinctive customs are these; a Kattee rarely exceeds two wives, though polygamy is permitted, widows remarry, and the widow marries her husband's younger brother. "When a Katteeanee, the mother of children, dies, the nearest relations of the deceased take away the children from their father, and carry away the whole of his moveable property for their use." They are drunkards. "If any Kattee is killed in battle, the whole of the property acquired on that trip is given to his heirs." They consider it disgraceful to carry fire-arms. They respect their Brahmins who insure property against their attacks.

On 15th May, Lieut. Col. A. Walker reviews the Company's proceedings in Guzerat. "In the early part of our connection with the Gaekwar Government, when the Honorable Company began to manifest an interest in its affairs, it was soon discovered that a considerable part of the resources of this State depended on a realization of its Moolukgeeree revenues from Kattywar with punctuality, while the large arrears actually due at that period rendered their recovery an object of no common importance." The Resident describes at great length the proceedings of the armies by which these revenues were collected,

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and observes that the arrangements previously detailed have suppressed great enormities. Col. Walker recapitulates previous statements as to the state of the country, the authority of the Bhats, &c. and proceeds to say that the march of the Company's troops excited extravagant ideas. It was at first thought that the Company had come to displace the Gaekwar. Then that it was on a plundering expedition, and several Chieftains sent in offers to help, extolling their own merits as successful thieves. Then every petty Chief fancied he was to get back all his family had ever lost. These extravagant expectations were repressed, but the armies sometimes interfered to check new and great oppressions. The perpetual settlement was fixed thus :—

Divisions.	*Perpetual.*		
	Rs.	*q.*	*r.*
" Jhalawar, ...	2,67,992	2	0
Muchoo Kanta, ...	60,000	0	0
Gohelwar, ...	1,10,582	0	0
Burrada, ...	30,002	0	0
Soruth, ...	1,08,209	0	0
Kattywar, ...	1,03,018	2	0
Hallar, ...	3,00,078	2	0
Total Rs.	9,79,882	2	0

This is a reduction from the assessment of 1803.

The whole population is trained to arms. The country is covered with forts. The Chiefs have many mercenaries, but the Nuwab of Joonagur, and the Chiefs of Nowanugur and Bhownuggur, are the only Chiefs who can produce armies. The country is inexhaustibly rich, and produces all its own supplies. The result of British interference has been to produce engagements. "The objects of these engagements are simple. They guarantee to the Gaekwar Government the punctual payment of the tribute which has been determined under our mediation. The Chieftains of the country are bound to refrain from depredation, and those mutual aggressions and acts of violence which formerly kept the country in a state of warfare and devastation. The Petty States on the sea-coast are also bound to relinquish piracy, and have given up the right to wrecks that may happen within their jurisdiction. The Jhareja and Jetwa Rajpoots have also solemnly abrogated the inhuman practice of female infanticide. In return for these concessions, we have guaranteed their country from oppression, and relieved it from the injuries it sustained from the annual circuit of the Moolukgeeree army. It must also be observed, that these engagements have completely changed the nature of the connection between the Gaekwar Go-

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vernment and the Chieftains of Kattywar. The rights which the Gaekwar Government possess in Kattywar are not, as formerly, the mere superiority arising from more powerful resources. These rights are now solemnly and formally recognised by the voluntary acts of the Chieftains of that country themselves, and rest upon the same basis as those engagements which connect more civilised States with each other." It is advisable, to secure these engagements, to station a body of Gaekwar Horse in Kattywar. On 30th April, 1808, Lieut. Col. A. Walker reports his opinion in favour of transferring the Gaekwar revenue of Bhownuggur to the Company. "The several advantages which this revenue possesses over every other cession of the Gaekwar or Peshwa, in being realised without expense, and in consolidating in the Company's hands the several dependent claims of the Peshwa, the Gaekwar, and the Nuwab of Surat, over Bhownuggur, have already been set forth and admitted in various letters wherein this subject has been agitated. The general superintendence which the Company have acquired over the Raja as a tributary, and the control of a valuable and extensive line of sea-coast, afford both the right and the means of regulating the conduct of the Raja in every affair that bears relation to foreigners, or is inconsistent with our policy." The revenue amounts to Rs. 74,500, which by the difference of exchange rises to Rs. 79,699. He also recommends that the Raja should be relieved of the security of a Bhat. On 23rd July the Government of Bombay accede to these recommendations. On the 7th December the Resident requests that the Secretary "would have the goodness to inform the Honorable the Governor in Council that all the rights, either of the Peshwa or the Gaekwar, over the Raja of Bhownuggur, are now concentrated in the Honorable Company, in virtue of the Treaty of Bassein, and of the recent cession of the Gaekwar Moolukgeeree demands on that Chieftain."

INFANTICIDE IN KATTYWAR.

Bombay Records, No. XXXIX.

On 27th May, 1805, Lieut. Colonel A. Walker, Resident at Baroda, reports that the Chiefs of Nowanuggur and Dherol put their female children to death. On 6th June, the Government of Bombay called on the Resident to enquire if the practice could not be prevented. The Resident was directed to secure the services of Soonderjee Sewjee as Agent for the suppression of so detest-

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able a custom. The Resident accordingly enquired of Soonderjee Sewjee the reason of the custom, and was told that "the drowning of the daughters of the Jharejas proceeds from this cause:— In this country there is no one who can marry into the tribe of Jharejas, wherefore they drown their daughters; and there may be annually five or six hundred births among the Jharejas, inasmuch as the Chieftains of Moorvee, Hallar, Gondul, Waghur, Kutch, and Kalikut, are all Jharejas, and are all related, and among relatives it is not customary for Hindoos to marry. Except relatives there are none of their own tribe. Such is the custom of the Jharejas." The Resident asked for more information, and pointed out that the custom was forbidden in the Purans. The Government in 1807 again pressed the subject on the attention of Lieut. Colonel Walker, who on 29th June replies that he has retained Penguel Singh in the hope that his influence with the Chieftains of Kattywar may suppress the practice. On 15th March, 1808, Lieut. Colonel Walker reports that the custom arose among the Jharejas from the fact that an ancient Raja of the family could find no fitting husband for his daughter. The idea had arisen that the Bramhuns or Rajgors were responsible for the crime. "It is probable that the custom of Infanticide amongst the Jharejas was a consequence resulting from the Mahomedan conquest of Sind. By the conversion and conquest of the greater part of the inhabitants of Sind, who were undoudtedly Rajpoots before that event, the Jharejas were deprived of the usual means of disposing of their daughters in marriage." The great cause, however, is avarice, the expense of a settlement in life being very great. They also consider that the custom gives them renown. The other Rajpoot clans do not interfere because the custom enables them to marry their daughters to the Jharejas. When the child is to be killed "the mother puts opium on the nipple of her breast, which the child inhaling with its milk, dies. The above is one custom, and the following is another: when the child is born, they place the navel string on its mouth, when it expires." This is their own account, but in reality, "Immediately after the birth of a female, they put into its mouth some opium, or draw the umbilical cord over its face, which prevents its respiration. But the destruction of so tender and young a subject is not difficult, and it is effected without a struggle, and probably without pain. The natural weakness and debility of the infant, when neglected and left uncleaned sometime, causes its death without the necessity of actual violence; and sometimes it is laid on the ground, or on a plank, and left to expire." The infant is then buried. If the child is allowed to live a day or two they rarely kill it. The Jharejas consider the death of a female child the necessary consequence of

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its birth, and have no compunction in the matter. Some respectable Jharejas in Kutch do not follow the custom. Their motive is not parental affection but the Jain idea that it is sinful to deprive anything of life. "It is supposed that the annual number of Infanticides in the peninsula of Guzerat amounts to 5,000." The number of deaths in Kutch is supposed to be 30,000. These are probably excessive estimates. The Resident relates instances of girls being saved, in one of which they were dressed like boys, and declared themselves to be boys. The Jharejas do not destroy their illegitimate daughters. The crime prevails also among the Jetwas. Colonel Walker discusses female infanticide historically and in the abstract and proceeds to say his task was most difficult. He applied to several Chiefs who evaded compliance. He then applied to the women of the family of the Raja of Moorvee, particularly his mother. They at first seemed interested, but soon pleaded the custom of the caste. At last this Chief after much urging wrote. "From motives of friendship, the Honorable Company have urged me to preserve my daughters: to this I consent, if the Chiefs of Nowanuggur and Gondul agree." The Chief of Mallia gave a similar writing. The Chief of Gondul after some evasions executed the deed required. Every Jhareja Chief except the Jam countersigned this deed. The Jam offered to bind his relatives but not himself. He then signed but solicited an abatement of his jumma as a compensation. Lieut., Colonel Walker considers the engagement binding because it was entered into with so much difficulty. These deeds moreover beside caste penalties confer on the Company and the Gaekwar a legal right of punishing the crime. The Jharejas moreover are frightened by the denunciation of the crime in the Shasters. Colonel Walker concludes by a remark that the Kurada Bramhuns of the Konkan are accused of human sacrifices, and adds in a note facts which seem to indicate that such is the general belief of the country. He also adds another theory as to the introduction of female infanticide. The Appendix contains a correspondence with the Chiefs summarized above. The only remarkable paragraph is in a letter from Futteh Mahomed of Kutch in which he declares that the Mussalman Emperors, and even the Sultan of Roum never interfered with female infanticide. On 16th December, 1808, Colonel Walker reports that 20 families had preserved their children, and only three appeared to have put them to death. On 25th December, 1809, Lieut. Colonel Walker again reports that a number of Jharejas including Chiefs of high rank and influence have preserved their daughters.

On 25th Feby., 1812, the Raja of Nowanugger again bound himself not to commit infanticide.

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On 20th June, 1817, Captain F. D Ballantyne, Assistant to the Resident of Baroda in Kattywar reports that the engagements entered into have failed. Thus in Talooka Drappa, containing four hundred families, there is not one female, child. He adds a list of Jhareja families showing that 63 children have been saved. On 19th September, 1817, Government order the Resident to inform the Jharejas that for the future the penalties will be enforced. Lieut. Colonel A. Walker was of opinion that the increased influence of Government arising from the cession of the Peshwa's claims in Kattywar would be sufficient if kindly and patiently employed to suppress the practice. He would have the Collector appointed to receive the Peshwa's tribute, go among the people, converse with them, learn in what families a delivery was imminent, make presents and shew every mark of disapprobation to the guilty. On 27th August, 1819, Lieut. Colonel A. Walker, then in England, again pressed his views upon the Court of Directors. He suggested that the Chiefs should be induced to furnish returns of births, and that delinquency should be punished at first with fine and disgrace and afterwards like ordinary murder. Marks of honour should be bestowed on those who save their children. The fines recovered from delinquents should be devoted to rewards for those who suffer their children to live. In a postscript Colonel Walker notices that the Emperor Jehangeer once prohibited female infanticide in a Punjabee village. On 1st March, 1820, the Court of Directors approved of these plans.

On 9th January, 1821, the Hon'ble Mountstuart Elphinstone reports that in his opinion the only effectual means of checking the practice would be to establish a rigorous system of espionage, but that we have no right to make any such attempt. On 16th July, 1824, Captain R. Barnewell reports that 266 Jhareja girls are alive in Kattywar. He conceives however that the practice has scarcely abated, and doubts if any measures of repression will be successful without espionage. On 7th June, 1825, he continues remarking that remissions have been granted to Jhareja families on their daughter's marriage, and the Raja of Gondul will be compelled to pay Rs. 15,000, of which Rs. 8,086 will go to the Gaekwar and the remainder to the infanticide fund.

The official correspondence continues at intervals till on 24th September, 1834, Mr. J. P. Willoughby, Political Agent in Kattywar reports that

"The number of males of and under the age of twenty is, ... 1,422
The number of females of all ages known to have been preserved is, 696

Excess of males, therefore, is, ... 726

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The number of females alive he considers gratifying, more especially as the Chiefs and their relatives had set the first example. In one talook there is an actual excess of females over males. In another the number of the sexes is equal. Mr. Willoughby recommends a complete census of the Jhareja population, and mentions the machinery which will be necessary. Moreover "every Jhareja Chief should be required to furnish a half-yearly register of all marriages, betrothals, births, and deaths occurring among his tribe residing in his district." Lastly the Political Agent should be compelled to furnish an annual report on female infanticide. Informers again should be rewarded, and a proclamation issued stating "the possessions of the Chiefs of Kattywar are guaranteed to them, on certain conditions, and it is the sincere wish of Government that they should continue to enjoy them, and all their privileges and immunities, free from molestation. The compact is, however, reciprocal and mutual, and the Chiefs have stipulated that they will cease to disgrace humanity by destroying their own helpless offspring at the moment of its birth. Should they not adhere to this condition, the compact is broken, the favour and protection of Government will be withdrawn, and the severest penalties be imposed until the inhuman custom is completely eradicated." These measures are considered by natives likely to be efficacious. A proclamation announcing these resolutions is submitted for sanction. It contains also a threat. Moreover "any person charged with having violated it will *either be placed on his trial for the heinous crime of 'child-murder' before the High Court of Criminal Justice recently established in Kattywar, or* be dealt within such *other* mode as may be deemed most expedient." The proclamation was sanctioned, with the exception of the words in italics, and in April, 1835, the Raja of Rajkot was tried and found guilty of infanticide. It was recommended that a fine of Rs. 12,000 should be imposed on him, that his talook should be attached till it was paid, and that he should dismiss the servants employed in the transaction. The Government sanctioned these measures. In September another Jhareja named Veerajee was accused and convicted, and recommended for imprisonment for one year in the common gaol and a fine of Rs. 3,000 or two years' further imprisonment.

On 30h June, 1837, Mr. J. Erskine, Political Agent states the result of the first census showing 1,310 male and 887 female Jharejas. Mr. Erskine after a careful analysis of all that had previously been done considers the measures adopted superficial and somewhat weak. The sudden action of the British Government in the case of the Raja of Rajkot

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after many years of apathy left the impression amongst the Jharejas that the Chief was a martyr. Let any person inspect the census and it will be evident that the crime was universally practised up to the time of Mr. Willoughby's Agency. No attention was paid to the subject by the British Authorities. When we remember the great objections, on the part of some of the most able Officers of the Hon'ble Company's service, that were made to the suppression of the Suttee, fault cannot be found with the predecessors of Mr. Willoughby. If Mr. Elphinstone had extended to the whole of the natives subject to his control, that system of education which he instituted in Bombay, doubtless a great stride towards the suppression of the crime would have been taken. The system of informers is both destructive and embarrassing. How would any man in England, brook the enquiry as to how many times his wife had been enceinte or how the delivery took place? In our defective system of jurisdiction it is quite impossible to save the life of the informer. False accusations are continually made. The vigorous investigations ordered by Government only produce greater vigilance in the commission of the crime. These strict enquiries enlist the feelings of the other tribes in favour of the Jharejas. To try criminals before the Court of criminal justice, to try the people who commit the crime, by their brothers and instigators would be futile. To use present severe coercion for the suppression of the crime is inexpedient. Penal enactments without the concurrence of the people cannot be of service to the community. The sumptuary system is both ephemeral and partial. With respect to the funds supplied to Jharejas for the marriage of their daughters, their propriety seems still more questionable. The advance of money to a Jhareja, for the marriage of his daughter, keeps alive that arrogance which is the source of the crime. The Jharejas at the time of their inroad from Sind into Kattywar were Mahomedans. They either brought the custom with them, or on the Rajpoots refusing to enter into marriage connection, they sacrificed their daughters. In all Jhareja towns there is a large population of Powyas, whilst in the Jhalla villages, there are none. Although religion nowhere authorizes infanticide, yet the laws which regulate marriage amongst the Rajpoots powerfully promote it. Marriages cannot be contracted with those of the same clan or even of the same tribe. The following measures are proposed for the suppression of the crime:—I. All the Rajpoot Chiefs shall be required to enter into an engagement that they will not give their daughters to any tribe who will not give them theirs in return. II. The Jhareja Chiefs shall enter into a stipulation that the expenses of the marriage

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of the daughters of their Bhyad shall not exceed the amount fixed at a general meeting of the caste; and shall be informed that government will cheerfully assist the indigent. III. A distinctly specified penalty ought to be proclaimed in case of the infringement of their engagements. IV. The principle of the responsibility of the Chiefs for the conduct of their Bhyads should be strictly observed. V. The minute scrutiny by the census to be the test. VI. The Chiefs promised that if a general amnesty were granted to the committers of the crime they would engage most solemnly to discontinue it for the future. Therefore during a period of two years no investigation should be made, and the result of the census at the end of that period should be the test. VII. The assistance of the Rao of Kutch, the head of the Jhareja community should be secured. VIII. The mass of the people should be educated.

The Appendices contain a report upon the difficulty of the suppression of infanticide; a proclamation by the British Government; a circular deprecating the commission of the crime; the receipts of the Mohsullee and Infanticide fund; the resolutions passed by the several Rajas and Rajpoot Chiefs for the better suppression of infanticide, and lastly the establishment of a censor for the Jhareja tribe of Rajpoots in Kattywar.

After a letter from the Assistant Political Agent detailing the investigation of certain accusations of female Infanticide, Mr. J. P. Willoughby animadverts upon the report of Mr. Erskine. Mr. Willoughby gives the census of the Jhareja population in 1836 to be males 1,422, females 409 which is slightly different, as will be observed, from that given by Mr. Erskine. With the first two propositions of Mr. Erskine for the suppression of infanticide, Mr. Willoughby entirely concurs, on the third proposition he says "I think few will agree with the Political Agent in opinion that it is advisable to fix a period prospectively from which to punish the crime." After passing over the fourth and fifth propositions he expresses his extreme astonishment at the sixth proposition. With the remaining measures suggested by Mr. Erskine, Mr. Willoughby expresses his entire concurrence. After copies of certain circulars which have from time to time been distributed amongst the Jhareja Chiefs, we have a list of the Chiefs to whom circulars have been forwarded, with their replies. The Honorable the Governor and the Board in their minutes upon the foregoing reports of Mr. Willoughby and Mr. Erskine express their great satisfaction with the spirit manifested by both, but are at a loss to imagine, how Mr. Erskine should have supposed that the demeanour of the Government

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towards the Jhareja Chiefs has ever been other than conciliatory, and entirely disapprove of Mr. Erskine's sixth proposition. Certain official correspondence relating to the corrupt conduct of the censor for the province of Kattywar follows. In a letter from the Acting Political Agent in Kattywar, dated 23rd October, 1841, we find that the proportion of males to females during ten years has decreased from the proportion of 1¾ to 1 to the proportion of 1 to 1¼ which he considers highly favourable. He suggests that the nearest female relative or the wife of the censor should be associated with him in his office. He asserts that the crime of infanticide is by no means confined to the Jhareja or Jetwa population, it is extensively practised by the Mahomedan tribe of Shetas. With regard to the census as a means of suppression, after animadverting upon the fallibility of its returns he remarks. "We may save life by the census, but how can we protect it from misery and neglect afterwards?" And suggests that 4,000 Rs. should be set apart from the Infanticide Fund for the erection of a school house, and that 1,000 Rs. a year should be devoted to the encouragement of annual vernacular essays upon the subject of infanticide. The Appendices contain the census forming the basis of the foregoing reports with the abstract of the Jhareja population of Kattywar for 1840. In 1833 the number of males was 5,804; the number of females was 603. In 1840 the number of males was 5,760, the number of females 1,370. The number of alleged cases of infanticide which have come under enquiry between 1837 and 1841 is 28 of which 27 cases were not proved. Mr. J. P. Willoughby having been requested by the Hon'ble Mr. Anson to examine the report of the Acting Political Agent, remarks upon the favourable nature of the crime, returns, and proceeds. The Governor in Council remarks upon the small number of convictions incident upon certain cases of alleged infanticide that a preliminary enquiry should be held in private previous to the accused party being placed publicly upon his trial. The arrangement that the wife or the nearest female relative should be associated with the censor should be adopted. Mr. Willoughby thinks that money should not be appropriated from the female infanticide fund for the purpose of building a school. He approves of the proposed essay prize. The Right Hon'ble the Governor in a minute upon both report and memorandum, assents to the carrying into effect the suggestions given in the memorandum of the Political Agent, with the exception that continued prize essays cannot be established. He considers that education is too slow in its effects to be the only instrument employed, and persists in the use of vigorous coercive measures. Between June, 1837 and October, 1841 not a female

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child in Shahpoor was, as appeared from the census, permitted to live. Kallajee, the Chief of this Talooka was fined 1,000 Rs. Upon this slight punishment the Political Secretary remarks that after the severe examples which have been made in Kattywar the mere fine seems scarcely an adequate punishment. In reply dated 28th November, 1842 the Acting Political Agent submits that there were extenuating circumstances in the conduct of the Jhareja Chief, there having been four daughters born during the four years abovementioned, who had all died. He cannot overcome the native prejudices so far as to secure the services of a female censor. In an Appendix to this reply, Captain Jacob, the Acting Political Agent, conveys an application from the Jam of Nowanuggur asking the assistance of Government to facilitate the marriage of 21 members of his Bhyad. In the Appendix attached the census shews, for the year 1841, that 292 female infants had been preserved. The Government sanctioned a donation of 5,000 Rs. for the marriage of the 21 persons mentioned. After some correspondence upon the difficulty of deciding which essay upon female infanticide was most deserving of the prize offered by the Government, and upon the numerous mistakes in the census returns, Colonel Lang, Acting Political Agent at Kattywar in a report dated 25th August, 1846 shews that amongst the Jetwas there is an increase of 165 female children to 202 males for the year 1845. During the year 1845 only three Jharejas required assistance for the marriage of their daughters. Mr. Willoughby proposed in 1834 a reward for all Jharejas who had at that time two daughters living. In 1834 there were only two Jharejas with four female children, thirteen with three, and eighty with two each. In 1845 there were two Jharejas with 5 daughters each, nineteen with four and one hundred and five with three. The reward is therefore purposed to be limited to those with four daughters, and to be 300 Rs. to each. Lieut Colonel Lang proceeds and states that the annual subscription to the Female Infanticide Fund amounted in 1845 to 4,398-13-1 which he considers favorable, and suggests that the school should at once be built.

All the operations of Government for the suppression of female infanticide proceed favourably. No new methods are introduced. The instruments employed are, 1st, Reduction of the marriage expenses. 2nd, Rewards given to those who had four daughters and upwards, 3rd, The promotion of education, and the establishment of a prize for the best essay on this subject. 4th, Coercive measures with the judicious employment of the census. The census returns for the year 1852 shew the per-

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centage which the females bore to the males during the years 1842—1852 :—

Years.	Jharejas.	Soomras.	Jetwas.
In the year 1842,.....	30	40	34
Average of the 5 years ending 1846,	33	48	37
In the year 1847,.....	40	60	44
Average of the 5 years ending 1851,	43	65	52
In the year 1852,.....	47	69	57

These results were considered highly gratifying by the Bombay Government. An account of the trial of certain offenders for the crime of infanticide, with observations upon the best methods for the reduction of the marriage expenses amongst the population of Kattywar, here follows. On the 15th August, 1855 the Bombay Government resolve that the expression of the gratification of government be conveyed to the Rao of Kutch and His Highness the Jam of Nowanuggur on account of the highly favourable declarations which have been made by both these princes upon the reduction of marriage expenses. The intelligence that marriages in Kutch have very much increased is a source of sincere gratification to the Government.

The Right Honorable Governor in Council entirely agrees with the Acting Political Agent that His Highness the Rao must be permitted to hold his own opinions, as to whether the matter of taking Pudloo and marrying by Dhola,* is in opposition to the customs of kings and to the Shasters, or not ?

* By "taking Pudloo" is meant the sum of money given to the parents of the girl about to be married by the parents of the bridegroom. By "marrying by Dhola" is meant the sending of the bride to the bridegroom, who does not come to receive her : this happens when the rank of the bridegroom is greater than that of the bride.

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THE

ANNALS

OF

INDIAN ADMINISTRATION.

EDITED BY

MEREDITH TOWNSEND.

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1857.

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ADVERTISEMENT.

THE Governments of India publish on an average a volume every four days. From Reports affecting the entire Empire to accounts of local drainage, from the opinions of the ablest officers to the cost of a cutcha bye-road in a frontier province, every thing finds a place in these publications. There is scarcely a subject connected with Indian Administration on which they do not exhaust official knowledge. There is no officer in the country who may not obtain from them, in reference to his special task, all the advantages of experience. The information thus vast is, however, widely scattered. The Records of one Presidency are scarcely known in another. The books are not very readily procurable, and above all they are like all other blue books dry, ill-digested, and overlaid with detail. It costs an hour to find a fact, and in India men who care about facts cannot spare hours.

The object of the Compiler is to remove this defect, to do for the official information of India what Mr. Leone Levi is doing for the Blue Books of England. The Annals will comprise every fact, and almost every opinion of importance in the records of the Quarter. A copious Index will enable the reader instantly to refer to the subject of which he is in search, and any peculiarity of opinion and even of style is carefully retained.

A word may be necessary on the arrangement adopted. It is intended that the most important subject should have the largest space, but in estimating the relative importance of the records the Compiler has been compelled to rely on his own judgment. Usually all subjects of imperial interest have the preference, statistics occupy the next place, and subjects purely historical the last. They are not very important, and not at all interesting, but they can only be condensed to a certain point. Of the labour thus saved to the public, but one illustration must suffice. The number contains 122 pages. The books analyzed comprize just two thousand seven hundred and eighty-two.

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THE

ANNALS

OF

INDIAN ADMINISTRATION.

REPORT ON THE TEAK PLANTATIONS OF BENGAL.

Bengal Records, No. XXV.

On the 7th March, 1854, Dr. H. Falconer, the Superintendent of the H. C. Botanic Garden, submitted a Report upon the condition and prospects of the Teak Plantation established at Sylhet and in the Jungle Mehals or Bancoorah. The Sylhet Teak Plantations were sanctioned in 1814. In 1851 only 13 trees survived out of the 1,800 reported to have been standing in 1819. One of the Plantations has entirely disappeared, the ground having been selected for the cantonments of the 70th Regt. N. I. The Teak tree does not attain its full growth in less than 80 years. The trees remaining at Sylhet are not more than half-grown. Sylhet is not a favourable locality for the growth of Teak. The Bancoorah Plantations were sanctioned on the 23rd April, 1814. In 1819 the area of the Plantation was 350 beegahs and the number of the trees about 22,000. The Plantation at present costs nothing, and the Dalkissoor River will furnish in the rains a ready channel for the transportation of the logs. The Rampore Bauleah Plantation was given up in 1832, as also was the Kishnaghur Plantation in 1827. No portion of the delta land of Bengal is suited to the growth of first class Teak. The soil and the rains are both unfavourable, the former causing the trees to throw out horizontal roots. There was however a grave error in the yearly planting arrangements. The trees were planted at intervals of ten feet apart, and never thinned out as they grew up. Planting operations have been commenced in Madras on a large scale. A Teak tree at Gowalparah attained in 25 years a height of 25 feet and was 9 feet 3 inches in girth at 3 feet above the ground. The rapidity of this growth exceeds any thing of the kind.

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NOTES ON THE PRODUCTIVE CAPACITIES OF THE SIAM COUNTRIES.

Bengal Records, No. XXV.

THE countries occupied by the Shan tribes, particularly Siam and the tracts to the North and East, have great productive capacity. The lower ranges of the hills bounding Menam and Cambodia are covered with forests producing teaks, rose-wood, gamboge, a species of gum benjamin, cardamum, saffron, red-wood and sandal-wood. Large quantities of stic-lac are produced. Tea is cultivated largely. The tea when it is sold at Ava is in brick-like masses and is purchased by the piece. Fibrous plants abound, and silk is produced. The minerals of the Shan Territories are tin, lead, antimony and iron. In Moongmeet there is a silver mine which belongs to the King of Ava but is worked by the Chinese. In the vicinity of Moonkong rock crystal is found in abundance and near the sources of the river Ura, "Noble Serpentine" is found. This is much prized by the Chinese under the name of Yueesh or green-stone. In the valley of Hookong on the Assam frontier amber is found in abundance. The bulk of the amber is taken to China, where it is used medicinally and as a varnish. The amber is in colour either red or golden and oil green, one sort is opaque. In the vicinity of the amber mines are brine springs. Gold and Platina or Khumpok are found. The rocks of the Irrawaddy abound in steatite which is used for writing. In arts and manufactures the Shans are far behind the Chinese, they are however great workers in silver. Horses, horned cattle and elephants are common. The great Chinese mart on the Upper Irrawaddy is Bamo, it is situated in Lat. 24° 12′ and 97° E. Long. It is the largest place in Burmah with the exception of Ava and Rangoon. The water of the river under the town is deep and the banks precipitous. The route from Bamo to Yunan is by the line of the Taping Kyoung, a small river flowing into the Irrawaddy. Honey is largely imported from China as also are rich silks, velvets and gold. The staple export from Bamo is cotton, which is grown in the Districts of the Lower Irrawaddy. Of this about 1,75,000 maunds at from Rs. 2-8 to 3 Rs. a maund are annually exported. A Portuguese factory is said to have been established at Bamo about 250 years ago. The transit of Cotton from the Lower Irrawaddy is periodical and is effected by water, in boats of a large size averaging perhaps 150 tons burthen.

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REPORT ON SERAJGUNGE.

Bengal Records, No. XXV.

A. J. M. MILLS, Officiating Judge of the Sudder Court reports upon Serajgunge.

Serajgunge is a Sub-Division composed of three Thannahs, Raegunge, Shazadpore and Serajgunge; these belong respectively to the Zillahs Bogoorah, Pubna and Mymensing. It is under the charge of a Joint Magistrate and Deputy Collector. Monthly statements for each Thannah are furnished to the Magistrates of the several Zillahs, and the results are embodied in their Returns. In 1856 there were 53 cases of heinous crimes and 281 of petty offences, in all 334 cases of 602 persons. At the end of the year there were 21 cases of 57 persons. Mr. Davis, the present Magistrate is not sufficiently speedy in the disposal of criminal cases. One case pending since 1848 has been remanded three times by the Sessions Judge of Mymensing.

The value of the property stolen in 1852 amounted to Rs. 10,296-5-5, the amount recovered was Rs. 881-11-6. There is no regular Jail. The prisoners are confined in the Thannah Guard. Paid persons are employed to attest the confessions of prisoners. This practice is objectionable but so is that of seizing respectable persons, and compelling them to proceed to a distant station to give evidence. Numerous cultivators complain of the Indigo Planters. They charge them with sowing their paddy lands by force, and seizing and confining their cattle. There are eighteen Indigo Factories in the Sub-Division. There is reason to believe that the charges against the planters are often wholly without foundation. There is no Vernacular School in this Sub-Division. A School has been established by private subscription at Shazadpore but the master is very inefficient and the Scholars do not number above 30. Serajgunge is populous and contains about 17,500 inhabitants. The District of each Thannah should be more compact.

The Thannah Dak was placed under the orders of the Post Master on the 1st May, 1852. The Dak to Calcutta occupies five days, whereas the Dak from Calcutta only occupies three days. This irregularity requires notice. Serajgunge situated on the Bermapooter, there called the Juboonah, is a place of great traffic and employs about 20,000 boats. The lands are well cultivated but the soil is not very good. There are no regular roads. A statement of places from and to which goods are exported and imported is annexed.

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CORRESPONDENCE RELATIVE TO VACCINATION.

Bengal Records, No. XXV.

On the 14th August, 1854, the Commissioner of Burdwan writes to the Secretary to the Government of Bengal, and encloses a Report from Mr. G. F. Cockburn detailing the success of Vaccination at Midnapore. Mr. Cockburn recommends that in order to obtain good lymph, two children should be sent to Calcutta, from all Districts within a reasonable distance, to be vaccinated. He recommends, 2ndly, that a book in Bengalee should be published detailing the advantages of Vaccination. 3rdly, that every Collector should in his winter tour be accompanied by a Vaccinator. 4thly, that all convicts should be vaccinated. 5thly, that boys attending the Government Schools should be vaccinated, and lastly that all Native Doctors and Sub-Assistant Surgeons should be required to vaccinate gratis. In 1851 the vaccinations amounted to 1,304; and in the first half of 1854 to 9,495, of which 8877 were successful.

This report of Mr. Cockburn was sent to the Medical Board who approve generally of his suggestions.

CORRESPONDENCE ON THE DISCOVERY OF THE TEA PLANT IN SYLHET.

Bengal Records, No. XXV.

The Magistrate of Sylhet on the 4th January, 1856, announces to Government the discovery of the Tea Plant. The first discovery was made in Pergunnah Chandkhanee, but the plant has since been found to exist in the entire range of hills forming the eastern boundary of the Zillah, from Chandkhanee to the very North westward extremity, as far as Laour. In the event of grants of land being made for Tea Cultivation the leases should be short. The Report then proceeds to enumerate the localities in which the tea plant has been discovered.*

* A map exhibiting the localities of the tea plant in Sylhet and Cachar is affixed.

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REPORT ON THE HON'BLE COMPANY'S BOTANIC GARDEN.

Bengal Records, No. XXV.

Dr. T. Thomson received charge of the Garden on the 17th April, 1855, the report is dated 23rd July, 1856. The absence of the Head Gardener, Mr. Scott on special duty in Pegu caused great injury to the Garden. From the 15th June, 1855 to 29th February, 1856, 15,865 plants were issued to 296 applicants. The issue of plants has now been stopped by Government, in this act Dr. Thomson full concurs. The applications for grafted fruit trees have been far greater than the Garden can supply. During the year 1855, 63 glazed cases of plants were despatched from the Garden, in 1854, the number was 55. These cases have been partly supplied to private applicants and partly to public establishments, such as Kew Gardens, those of Peradenia in Ceylon, &c. &c.

Mr. Scott while on deputation in Pegu greatly enriched the Garden. The Garden Collectors have all with one exception furnished valuable contributions. The one exception is the Collector of Malacca. The young palms, of the Palmetum laid out in 1849 by Dr. Falconer, have attained a considerable size. A Natural and a Medicinal Garden have been laid out. The Garden School instituted by Dr. McClelland in 1847 has not answered the purpose for which it was intended. The Garden rates of pay are not sufficient to induce lads to remain. The Garden Herbarium has been re-arranged. The present establishment was fixed by the Finance Committee in 1830 at Rs. 1100 with a contingent allowance not to exceed Rs. 160 a month. What Kew Garden is to London, that the Calcutta Garden ought to be to the Metropolis of India. The reporter here enumerates what points call for increased outlay. A Glass house should be built. A small increase in the establishment of Collectors is essential. There should be an allowance for the maintenance of a Library. The Garden Library affords no books less than 20 years old!

The Appendix to the Report is a list of the plants in the Herbarium, which was first formed in 1828.

NOTES ON THE PATNA OPIUM AGENCY.

Bengal Records, No. XXV.

Dr. Lyell observes that Opium is a concrete juice obtained by making incisions into the capsule of several varieties of the Papaver

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somniferum. Chemists have succeeded in detecting morphia, codiea and narceia—which are combined with meconic and sulphuric acids. Gum, resin, coloring matter, woody fibre, saline and earthy matters and caoutchouc constitute the great mass of the drug. The quantity and richness of the poppy juice are influenced by the soil. The white poppy yields the least Opium, and the purple most of all. This last contains about three times as much morphia, but only an eighth part of the narcotine of the white. The red poppy is intermediate between the two. Landerer observes that the seeds obtained from the capsules which have been used in the preparation of Opium, if sown, yield an inferior Opium.

The land in the vicinity of a village is usually selected for the cultivation of the poppy, on account of its superior richness, and for facility of irrigation. When the soil is strong the poppy is a second crop, generally succeeding Indian corn. In the latter part of September and the commencement of October the ground is carefully prepared by two or three ploughings, and the lumps of earth are broken. About the middle of October the sowing commences. The seed is sown broad-cast, and from three to four seers are required for each beegah. The ground, divided into oblong plots, is well watered before the plant springs. Water containing saline matter is preferred. The plants are watered according to the quantity of rain which falls; after they have attained the height of 5 or 6 inches they are carefully thinned at three or four successive periods. Great attention must be paid to weedings and loosening the soil. At the first thinning the young plants are sold and eaten as a salad, those of the 2nd and 3rd thinning are seldom used. As soon as the petals of the flower fall off they are collected and made into a covering for Opium cakes. The gummy matter is first extracted by heat. In the third week in January the capsules are scarified by an iron instrument having four prongs about $\frac{1}{8}$th of an inch apart. The operation is performed in the afternoon and the juice collected early on the following morning. The collection is most critical. The condition most favourable is a still atmosphere which allows it to thicken and collect in tears. Strong winds or a cloudy sky preventing the formation of dew greatly reduce the quantity of the produce. When the dew is very abundant the juice is apt to flow off the capsule and become wasted. The average quantity produced in a beegah is from five to seven seers. The Opium receives no treatment at the hands of the cultivators. It should never be kept under ground. The seeds of the poppy yield, by expression a very bland and valuable oil. It sells in the bazar at from 8 to 10 Rs. a maund. The leaves fetch 4 Annas a maund, they are used for packing the Opium.

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The reporter here mentions the manner in which the Opium is received into the Sudder Factory and proceeds. The Opium having been stored in large vats is transferred into small vats and mixed. Whenever the consistence of the drug in the vat is proved to be 75 the caking commences. Each cake is composed of "1 seer 7½ chittacks of Opium at 75 consistence, 3 chittacks and 3 kutchas of Opium at 75 consistence diluted into 51 consistence gives 5½ chittacks of lewa or paste, the material used for agglutinating the covering and 5 chittacks and 1¾ kutchas of leaves, making in all 2 seers and 2¾ kutchas." The number of the cake-maker by whom the cake is made is written on a slip of paper and pasted on the cake. The cakes are turned in their cups every four or five days after their manufacture, subsequently every eight days during the rains, and in dry weather every twelve or fifteen days. When they have become set, the outer surface of the cakes and the inner-side of the cups are rubbed with bruised poppy leaves. This is an operation of great importance, and requires great care. When the cakes are dry, a thin leaf is pasted on their surface. The Chinese pay the highest price for that Opium which in the drug market of Europe is looked upon as of the poorest description. The cakes are never ready for packing until the westerly winds which set in about the end of October. The Report contains a calculation shewing the superiority of the Ghazeepore packing to that adopted at the Patna Agency. In 1845-46 there were at the end of the season Mds. 89-27-6½ of Opium in store, in 1854-55 there were Mds. 1325-30-6½. In 1845-46 there were Mds. 29-19-10 confiscated and in 1854-55 Mds. 53-29-1¼. The greatest care is taken in the choice of boats to convey the Opium and every fleet is under the charge of two Europeans. The report concludes with the method employed for analysing opium.

REVENUE REPORTS OF THE GANGES CANAL.

Indian Records, No. XXI.

Lieut. Colonel R. Baird Smith on the 7th December, 1855, submits his first report on the revenue yielded by the Ganges Canal. The time embraced in the report is the Fussil Khureef* of 1855-56.

In September water was admitted into the Canal. On the 9th signs of failure in the Masonry revetments of the right embankment appeared. At a point about 1000 feet above the Ma-

* Autumn Crop.

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sonry Aqueduct, the rear wall of the revetment was observed to bend into the form of a bow on a length of about 300 feet. Within two hours the Canal was laid quite dry in front of it, and all real danger was at an end. So soon as the water was passed off, the front wall, forming a chord of which the rear wall was the arc, was thrust forward by the same interior pressure. This pressure originated in the core of the revetment being of loose, unconsolidated earth, and not tamped so as to form a water tight puddling. The front wall being previous to the Canal water the whole core was transformed into a semifluid mass. The facts brought broadly into view by these results were two. First, extensive settlements of the Earthen Aqueduct bed were the consequences of the admission of any considerable volume of water, whereby the front walls of the masonry revetment were endangered. Second, that till the right embankment was completed, according to Sir P. Cautley's design, the rear revetment wall could not be secure against accident. The Canal thus closed in April was re-opened in November, but was obliged to be reclosed on the 1st March, 1855 owing to leakage. On the 1st of April the Canal was again opened and the supply was rapidly raised to an average depth on the aqueduct of 3 feet. The Canal except for a day or two during the rains has not been again closed, and the supply has been maintained at from 4 to 5 feet on the aqueduct. The Revenue derived from the Ganges Canal during the period under review amounted to Rs. 8571-8. Of this sum Rs. 7,710-9-9 are revenue and Rs. 860-14-3 Tuccavee collections. The total value of the water applied for was Rs. 3,258-8-0. The value of that utilized was Rs. 144-14-2. These results are very moderate but the Eastern Jumna Canal shows a Revenue of Rs. 4,000 during its first Khureef, of which water rates supplied Rs. 3,000. The Western Jumna Canals shewed at first a Revenue from water rates of less than Rs. 900. The Canal flour mills were not opened until the Khureef was well advanced. Between August and October 5 mills employing 36 stones were opened. At first the Canal mills were worked under the immediate direction of the Canal officers, but hereafter they will be rented by public auction. The transit dues on navigation have been limited to the Returns derived from Government boats, and the navigation has been confined to the line between Hurdwar and Roorkee. The only other point upon which the reporter remarks is the collection of Tuccavee advances. This is a most serious difficulty which will have to be overcome. He

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proposes that the Government suspend all demand for the prime cost of Rajbuhas for three years, from the time at which irrigation may commence upon them. He calculates the gain in returns from increased consumption of water would be Rs. 23,530 and the loss from the suspension will amount to 10,000 Rs. leaving a nett gain of Rs. 13,530. The second report includes the period from 1st November, 1855 to 30th April, 1856. The volume of water maintained during the season gave an average height of 6 feet or approximately 3,000 feet per second in the Canal Channel. The progress made on the extension of the main Channels had been marked and satisfactory. Two sketch maps are appended. One shews the condition of the distribution Channels on the 31st October, 1855 and the other on the 30th April, 1856. The extent actually open on the last mentioned date was 1,252½ miles. As the most convenient way of exhibiting the revenue results of the Rubbee season under review, the Report considers each division of the Ganges Canal separately.

1855-56.	From sale of water.	From mill rent.	From Transit dues.	From sale of Canal Bank produce, &c.	From filling tanks and watering cattle.	From Fines.	Total of each Fussil.	Grand Total of 1855-56.	Tukkavee collections in 1855-56.	Saving to works by use of canal for transit in 1855-56.	
Fussil Khureef,	3,253 8 0	1,061 11 9	1,224 8 0	2,165 14 0	0 0 0	0 0 0	7,710 9 9	0 0 0	860 14 3	0 0 0	15,460 12 11
„ Rubbee,	31,384 13 5	3,212 6 3	1,419 6 8	4,448 7 6	31 1 4	393 8 3	40,889 11 5	48,600 5 2	5,453 8 7	15,460 12 11	
Totals, ...	34,643 5 5	4,274 2 0	2,643 14 8	6,614 5 6	31 1 4	393 8 3	0 0 0	48,600 5 2	6,314 6 10		

The general statement of the revenue from the Ganges Canal during 1855-56 is :—

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The following statement illustrates the extent to which the influence of the Canal has been felt by the agricultural community of the Doab :—

Divisions.	I. Direct Canal Irrigation.								
	No. of villages irrigating.			Effective Irrigation.				Proportions to each village.	
	By contract.	Area.	Total.	No. of pymanahs issued.	No. of beegahs watered under contract.	No. of beegahs watered under rates.	Total area of irrigation in each.	Of pymanah.	Of beegahs.
Northern, ...	134	..	134	95·15	18,507	...	18,507	0.71	138
Upper Central, ...	54	77	131	49· 5	9,628	9,648	19,276	0.91	147
Lower Central, ..	104	...	104	58·16	8,076	...	8,076	0.56	77
Cawnpore Terminal,	...	78	78	...	.....	3,114	3,114	...	40
Etayah Terminal,...	...	12	12	...	.....	190	190	...	16
Total of Canal Villages, ...	...	...	459	Total area of canal irrigation, ...			49,163		
	II. Indirect Canal Irrigation.								
Lower Central, ...	...	340	340	...	.....	16,034	16,934	...	50
Cawnpore Terminal,	...	266	266	...	.....	19,183	19,183	...	72
Etayah Terminal,	...	69	69	...	.....	2,295	2,295	...	33
Total of Escape river Villages,			675	Total of Escape River Irrigation, ...			38,412		
Grand Total of Irrigating Villages, ...			1134	Grand Total of Canal Irrigation, ...			87,575 Beegahs, or 54,734 Acres.		

Assuming that the common average difference in the produce of irrigated and unirrigated land has prevailed over 50,000 acres of the area watered by the Ganges Canal, the gain to the people from this source alone, during the Rubbee of 1855-56, will be found to be 5 lakhs of rupees.

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In his second Report Lieut. Colonel Baird Smith again recommends that the Tuccavee advances should be suspended for 3 years. The Ganges Canal closed its first year of work with 449½ miles of main Channel open for water, 436 miles of rajbuha Channel completed, and 817 miles in active progress. The aggregate revenue has amounted to somewhat more than Rupees 60,000. 98,000 beegahs or 55,000 acres have been watered and 1,66,000 acres have been placed beyond the risk of serious damage from drought. It seems probable that within five or six years the direct revenue of the Canal will cover all current expenses, and that thereafter the Canal will continue to pay a gradually increasing interest upon the capital sunk in its construction. The money sunk up to May, 1856 was Rupees 1,73,55,642-4-1.

IRRIGATION IN LOWER EGYPT.

Indian Records, No. XXI.

The Governor of Bombay, at the suggestion of Major General Waddington, authorised Captain Fife to remain for three months in Egypt in order that he might report upon the new system of irrigation there practised. On the 4th April, 1856, Captain Fife forwards the result of his enquiries and inspections.

At the head of the Delta, the banks of the river are embanked to a height of from 6 to 8 feet, the thickness of the top varying from 8 to 20 feet. Other embankments run in every direction dividing the country into large fields. At the time of the inundation when the canals, which, with the exception of those newly constructed, are full of twists and turns, are full of water, the embankments are cut through and the country inundated to a depth of 3 feet. At other times, the Sakea and Shadoof are employed. About 20 years ago M. Linant Bey perceived the enormous expense attending the raising of water by means of the Sakea, &. and the great gain that would be derived from irrigating the crops, instead of merely inundating the land before sowing the seed. He accordingly proposed the Barrage or Regulating Bridge across the Nile, and the system of canals in connection with it. M. Linant Bey's plan was, to cut two new channels at the head of the Delta, to carry off the water of the Rosetta and Damietta branches, to construct a regulating bridge in each channel, and then completely dam up the old channels.

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M. Linant Bey's plan was never carried out. But the plan now being perfected by M. Mongil Bey, is substantially the same. The canal system is to be the same as that proposed by M. Linant, but the Barrages have been constructed in the natural channels of the Rosetta and Damietta. Both the Barrages rest on a bed of concrete sunk 21 feet into the bed of the river, which consists of loose sand. The foundations are secured by rows of piles. The bridge across the Rosetta consists of 64 arches of 16 feet span, with a lock at one end for the passage of boats. That across the Damietta consists of 74 arches and has also a lock at one end. The head of the Delta, between the two bridges, is protected by a revetment of stone resting on piles. The total length of the two bridges is 1800 feet. The heads of the three canals have been excavated; that on the Rosetta side is about 100 feet in width. The central one for the Delta is 300 feet wide at bottom and about 10 feet deep. The Barrage when this Report was made had cost 1,80,00,000 francs, it was expected before completion to cost 1,20,00,000 francs more. Captain Fife observed nothing in Egypt worthy of adoption which was not practised in Sind. He considers that the outlay on the Barrage was comparatively needless. With regard to the employment of steam power in Sind, he observes that the question is merely one of expense. As labour in Sind is only half the price that it is in Egypt it follows that steam power in the former country cannot be employed with the same advantage that it is in the latter. The report of Colonel Fife was submitted to Lieut. Colonel Baird Smith. The latter says that his impressions of the Nile Works were identical with Captain Fife's. With regard to embanking irrigating rivers in Sind, he strongly recommends that no extensive measures should be sanctioned without the most careful investigation. As regards the systems of distribution and revenue he believes that the best principles may be gathered from the practice in the provinces of Lower Egypt. Steam should not be employed in Sind for purposes of irrigation. The cost of irrigating one acre in Sind by means of Canal works is Rupees 0-8-6 whilst by steam power it would be Rupees 9-6-4. From these reports it is evident that there is nothing to be learned either from the ancient or more costly modern practice of irrigation in Egypt. It would not be advisable to embank the irrigation Channels from the Indus, for, the effect of holding up the water would be to check the current and encourage the deposit of silt.

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COMMUTATION RATES OF THE MADRAS PRESIDENCY.

Madras Records, No. XXXI.

The Madras Board of Revenue on the 8th November, 1852 issued a Circular to Collectors containing a series of questions designed to elicit information on the Commutation Rates. The replies of the Collectors, with an abstract and the opinion of the Board were commented upon by the Governor in Council on the 11th June, 1855.

It appears that Commutation Rates exist only in the ten Districts of Nellore, Chingleput, North and South Arcot, Tanjore, Trichinopoly, Tinnevelly, Salem, Coimbatore and partially in Malabar. The Government observe that the chief use of the replies of the Collectors is that they bring into more prominent notice the vague and uncertain proceedings on which most of the existing setlements were based. The reports have also much use in drawing attention to the imperfect method of taking the prices of grain. It is impossible to say with any certainty what prices were even professed to be shewn on the price statements on which the Commutation Rates were based. Even now there is so little uniformity in the mode of taking the prices, that the price lists in any two places, cannot be safely compared or even the lists themselves relied on. To remedy this uncertainty there should be some fixed standard of measure. On the periodical revision of the Commutation Rates the Government give no opinion. They point out that on this subject the opinions of the Board are inconsistent. The Government further observe that "the money price of all commodities have a tendency to fall with the progress of improvement, but that rents have no tendency to fall, but to increase." Future revisions of the rates of land assessment should therefore be guided less by any necessity of meeting the loss of falling prices, than by the broad and liberal policy of affording scope for the further extension of cultivation and so widening the basis of taxation.

The Board of Revenue on the 3rd of May, 1855 submitted to the Madras Government an abstract of the reports received from the Collectors of the several Districts on the price of grain and state their own views as to whether any general relief is necessary and as to the propriety of some periodical revision of the Commutation Rates. The Board observe that it is only in a few Districts that the assessment was fixed by commutation prices, and that since 1854 the state of the grain market has changed from one of extreme cheapness to one of very high prices.

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A comparison of the alleged Commutation Rates and the prices which have ruled at different times will not in the opinion of the Board prove sufficient for arriving at correct conclusions either as to the condition of the landed interest in any single district nor to the remedial measures which should be adopted for placing it when depressed, in a more prosperous condition. It cannot now be ascertained what grains were taken into the estimate or whether the village, the talook, or the town prices were considered. It is improbable that the price lists of subsequent years have been prepared on the same principles as these which ruled in the original commutation. An instance occurred not long since when the Collector of the District remarked on prices having fallen below the Commutation Rate while the Sub-Collector at the same time was reporting a rise *above* the commutation price. The commutation might have been fair at the period at which it was determined but its efficiency as an adjusting standard of assessment would depend upon the calculations of the amount of produce, to which it was applied, being justly formed and the area yielding such produce being justly ascertained. How far these calculations were correct may be gathered from the fact, that the measurement of a field was but a rough guess and the estimate of the produce was merely a fixed sum levied from the village and distributed over the fields. It is moreover difficult to say how far the decreased profit from the sale of the commoner grains has been compensated by the introduction of new products. The increased cultivation of the sugar-cane in some districts* the indigo of Cuddapah, Salem and South Arcot and the ground nut of the latter district together with the cotton of Tinnevelly, Salem and Coimbatore, the Pepper, Coffee and Ginger of Malabar have doubtless proved remunerative to the ryot. The abolition of the tobacco monopoly has thrown open a profitable culture to the farmer of Coimbatore and Malabar. The Board are however impressed with the conviction that the Government demands press heavily in some districts and they are of opinion that no general measure of relief founded upon the Commutation Rates can be arranged. With respect to the final query of Government the Board observe, that in their opinion it would be better for the Government and the ryot if a periodical revision of the Commutation Rates should take place. Thirty years is the term fixed in the North Western Provinces, and in Bombay, and might be adopted in the Madras Presidency.

The Collector of Ganjam in a letter, dated 27th January, 1853 says that in the sense used by the Board of Revenue "commuta-

* Ganjam, Vizagapatam, Rajahmundry, Cuddapah, North Arcot and Salem.

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tion" does not exist in his District. He therefore merely forwards a list of the prices of grain from Fusly, 1220 to 1229 compared with those from Fusly, 1251 to Fusly, 1260. This statement shews that the position of the cultivator is less favourable now than it was before. But his loss in consequence of a fall in prices is made up by the very large increase that has recently taken place in the growth of the cane and the manufacture of sugar.* The average assessment per acre in 1853 was Rupees 2-5-5. The Collector admits that the condition of the ryot might be improved but is of opinion that no extraordinary measures are required.

The Collector of Vizagapatam in a Report, dated 20th July, 1854 is unable to give any precise information on the effect of past and present prices on the condition of the ryot. The Permanent settlement in this District was based upon the price of Paddy alone, all other species of grain were ignored. On its conclusion the limit to the Zemindar's demands was the capability of the Ryots to pay. In favourable seasons the ryots are able to pay their rents, in unfavourable seasons they fall into arrears. As might be expected under such circumstances, there are very few substantial ryots in the district. Statements of the price of grain from Fusly, 1236 to 1245 as compared with the price from Fusly, 1251 to 1260, are forwarded by the Collector of Rajahmundry on the 19th January, 1853. These shew that the price has fallen. The condition of the ryots has however been improved by a large exportation of grain, the introduction of the joint renting system and by the construction of Public Works.

The Collector of Masulipatam submits on the 6th January, 1853 a statement of the prices of grain. The falling off in the price of grain has been considerable.

In Guntoor there has never been any general survey or any scale of commutation prices. The Collector in a letter dated 31st December, 1852 to the Board of Revenue states that as a general rule the Government share was half the gross produce after deducting fees and perquisites. The prices of grain from Fusly, 1251 to 1254 have ranged lower than at any former period on records. He has no hesitation in declaring that under a continuance of such prices the assessment would be ruinous.

The Collector of Nellore submits his report to the Board on the 13th April, 1853. He states that there are three rates of assessment in his district. The extent of land cultivated in Fusly, 1211 was 2,42,668 acres, in Fusly, 1261 it was 3,56,151 acres. The only product which has of late years been introduced is Indigo. Sugar-cane is no longer cultivated, the farmer not being able to

* Statement of the cultivation of sugar-cane given in the Report, page 50.

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compete with the Ceded Districts. The ryots have suffered much and become impoverished by the present rates of commutation. Dry grains commuted at 30 Rs. a candy shew but an average value during the last 10 years of 19 Rs. A ryot therefore cultivating land assessed at 30 Rs. would on selling the two candies of grain, the estimated production of the land, realize but an average of 33 Rs. leaving him after payment of his 30 Rs. a balance of 3 Rs. or about 25 per cent. of what he ought to realize. The consequence is that agriculture is unwillingly pursued, and the dittum amount is not merely artificially, but compulsorily kept up. Mr. Ratliff therefore suggests that the Commutation Rates be lowered and to commute annually. Mr. Elton, the Collector of Nellore shews that out of every Rs. 100 worth of wet grain produce, the ryot has to himself but 21 Rs. 7 pice or a little more than a fifth to meet the cost of cultivation of seed and labour, of means and of support. The figures below shew this:—

	Wet grain.			Dry grain.		
Ryot's share for 100 Rupees worth of produce in Fusly, 1236,..	42	1	2	40	9	10
Do. do. in Fusly, 1261, ...	32	9	7	24	5	3
Loss to ryot by fall in prices, ...	9	7	7	16	4	7
Additional loss in converting Government share into money, ...	11	9	0	19	14	5
Total loss to Ryot, ...	21	0	7	36	8	0

The cause of the fall in prices is owing to increase of cultivation and to non-exportation. The readiest method by which to relieve the ryot is "to reduce the assessment of each field to a grain demand at the Commutation Rate, convert it again into money at the current market prices in each year, and fix that as the present assessment, remitting the difference between it and the existing demand."

In Chingleput the survey field money assessment prevails in 1652 villages. These were settled at various dates and by different officers. The Government share of the produce varies from 39 to 50 per cent. of the gross. Indigo has been introduced. The dues of the village servants average from 16 to 24 per cent. the rest is the ryot's share. Thus the ryot may get as little as 26 per cent. of the gross produce, and may obtain as much as 51 per cent. The Collector is not prepared to relieve the ryot by a general reduction of the assessment. The average price of grain being above that upon which the ryotwar settlement was based.

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The Collector of Bellary states that shortly after the assumption of the district by the British the lands were surveyed and assessed and that a report on the subject was submitted by Colonel Munro on the 15th of August, 1857. He appends a statement of the prices of grain for 10 years before the settlement and for the 10 years ending in 1853. By this statement it is shewn that the prices of grain have fallen. The ryots are consequently exceedingly poor and of the whole body of the farmers only 17 per cent. are in good circumstances, *i. e.* are able to discharge their kists without having recourse to the money lenders; of the remaining 83 per cent., half are obliged to borrow money by mortgaging their crops and stock and the rest are obliged to sell their crops so soon as they are reaped and even their stock. The remedy has been frequently suggested in a modification of the land assessment as the Board of Revenue are fully aware.

The land tax of Cuddapah, the Collector, in a letter dated 28th October, 1853 says, has been fixed with reference to the average collections obtained, by the former Government and the quality of the soil. On a comparison of the price of grain between the first ten years after the settlement, and the ten years prior to Fusly, 1269, the price of all species of grain has very much decreased, with the exception of Bengal gram .The ryots however have not sustained very heavy losses for Sir Thomas Munro struck off from the original assessment 25 per cent. upon dry land, 33-5-4 per cent. upon land dependent upon wells, and 25 per cent. upon wet land dependent on tanks and channels. Some lands are still left waste on account of their too high assessment. The Collector says that Indigo is now the staple of the district. The whole area is 41,02,356 acres and is assessed at Rs. 46,26,633, out of this but 11,92,645 acres are cultivated upon which there is an assessment of Rs. 22,84,633, leaving 29,09,711 acres, assessed at Rs. 23,42,000, waste. The revenue is collected with great facility.

In Kurnool the Commutation system does not obtain.

The Collector of Salem states that the only source of information on the subject of commutation prices is Col. Read's report on the survey, dated 4th April, 1800. From this he learns that the commutation price was fixed for dry grains at 1 R. for 35·375 Madras measures and for wet grains at 1 R. for 33·8125 Madras measures. Annexed to this report there is a statement of the average price of grain from Fusly, 1202 to 1206 as compared with that from Fusly, 1258 to 1262. This shews that the prices have fallen. The fall averages from Rs. 26-10 to Rs. 48-11-5 per cent. The comparison is however of but little value. The Collector affirms that " over-assessment at the survey has

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had an injurious effect both upon the interests of the Government and the people." He therefore recommends a reduction. He would reduce the higher rates on Poonjah and Nunjah lands and would make a considerable reduction in the garden rates. The above remarks do not apply to the Balaghat talooks of Ossoor and Denkencottah. "The villages in these talooks were divided into three classes with reference to their situation, population and other general circumstances, and a separate scale of rates for dry lands was appointed for each. Each scale consisted of 5 rates. In regard to wet lands, the tanks were divided into four classes, with a corresponding scale of rates, likewise 5 in number, for each class. The garden rate of assessment in the Ossoor talook was fixed at double the poonjah rate, and in Denkencottah, at the highest poonjah rate in each village."

The Collector on 28th August, 1854 reports on the assessment of North Arcot. His remarks do not apply to the 5 Southern talooks and Suttvaid. "In calculating the assessment on nunjah lands, an annual average of the prices of shumbah and of navarah paddy, as they obtained in every village from Fusly, 1204 to 1215, was procured from the Curnums of each talook, and after excluding from these, two years of very high prices, a final average was struck for each of these grains, which, added together and divided by two, formed the commutation rate for all the lands in the talook from whence the lists were procured. In some cases, however, a difference exists in favour of villages remote from large towns. An instance of this occurs in the Cauveripauk talook, where there is one rate for villages within two miles from a large town, a second for those within six miles, and a third for those at a greater distance. In computing the rates for these, it appears, that the actual prices obtaining in the villages belonging to each of these three classes were taken separately. The teerwah dittum and the niraknamah for each talook give the commutation price actually taken and it appears that in most of the talooks, it was the average selling price of ten years. There is nothing whatever to shew how these alleged averages were obtained, or even from what source the yearly prices were taken. The best lands were assessed with reference to the rates selected for raggy and cumboo, and the inferior, with reference to those of the other descriptions of grain." When all demands are paid the ryot, on nunjah land obtains 56·2 per cent. on an average, and on poonjah he obtains 58·3 per cent. The Collector submits a statement shewing the extent of cultivation. Throughout the whole district, including the excepted talooks in Fusly, 1215 there were under cultivation 2,57,504 cawnies and in Fusly, 1262 there were 3,03,809 cawnies. There is

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a return exhibiting the rise and fall of prices on Paddy in which there has been a fall of 33 per cent nearly. The cultivation of indigo and sugar-cane have been greatly extended. The Collector is of opinion that the assessment is too heavy and that the roads should be improved.

The Collector of South Arcot states that the commutation price of his district was fixed at Rs. 70 per garce. The rate appears to have been determined solely upon information obtained from merchants. The statement of annual prices which accompanies the report shews that the "commutation rate is less unfavourable to the ryot than the height of the poonjah assessment, which is based upon a moiety instead of a third portion of the gross produce, and in some instances on two crops instead of only upon one." The Collector begs to be permitted to abstain from expressing an opinion as to how far the ryots require relief. He however considers that the present assessment is unduly high.

In Tanjore the Collector on the 29th January, 1853 informs the Board of Revenue that the system of commutation applies only to the wet lands. In 1832 when Mr. Cotton fixed the Oloongoo assessment for the wet lands he adhered to the existing poonjah and bagayet rates which had been fixed in Fusly, 1217. The average standard niruck is 57·26 Madras measures per rupee. "The standard nirruck was fixed with reference to the price lists of former years which were framed as follows. Every 10 days a price list was forwarded from the talooks exhibiting the quantity of grain sold, the rate at which it sold, the name of the maganum and village, a monthly average for each maganum being struck on the rates thus reported from November to June, including a separate account from the first to the eleventh of July, the close of the season, the price for the *year* being fixed for each maganum, on an average taken from the aggregate *monthly* rates."

But little variation in the kind of grain grown has taken place since the fixing of the commutation prices. Paddy is the staple of the district and has ever been so, the poorer ryots living on rice. They are obliged to sell their produce at once in order to meet the Government demand and advantage is taken of their necessity by the purchaser. A statement is forwarded exhibiting the number of petty land-holders. Decennial price statements are submitted. From these returns it is apparent that the average value of grain falls below the standard, the difference for the last five years being on an average $8\frac{3}{4}$ per cent. The Collector is of opinion that the continuance of the market rates as in 1853 will render a temporary revision of the standard rate necessary.

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After noticing the various systems and rates of commutations which existed at different periods from the first assumption of the country, the Collector of Trichinopoly states, that the average commutation prices were finally determined by Mr. Lushington in Fusly, 1231 at

57 Madras Measures of Vallan paddy for 1 R.
48⅜ ... ... of Caur, .. for ib.
44 ... .. of Peshanum for ib.

Mr. Lushington seems to have acted on no definite principle in adopting these rates. The Government share of the gross produce is on an average 50 per cent. though in some villages it rises even to 60 or 55 per cent. In Fusly, 1212 the whole extent of land cultivated was 2,53,772 cawnies 5 goolies. In 1261 it was 3,22,352 cawnies 28 goolies. No product has been introduced into this district since its assumption by the British. The settlement bears heavily upon the poorer ryots who are obliged to dispose of their harvest at once, in order to meet the Government demand against them. Since Fusly, 1258 there has been a depreciation of the prices of grain as appears from the statements annexed to the report. The ryots complain "not so much against the assessment as the extraordinary deficiency in the fertility of the soil, the scanty outturn of the produce as compared with former years, and the inaccuracy and inequality of the measurement of their fields." The Collector believes that these complaints are reasonable.

The Collector of Madura submits to the Board of Revenue a report relative to the commutation prices fixed in the talooks of Madacolum, Tiroomungalum and Meylore, at the survey. Statement No. 1 which accompanies the Collector's letter contains the commutation prices for dry, wet and garden lands. The principle on which the rate was fixed appears to be that of an average. The extent of cultivation at the time the commutation rates were fixed is not known., the Collector however sends a comparative statement. In Fusly, 1212, 3,43,777 cawnies of land were under cultivation, and in 1261 there were 3,70,564 The assessment may be considered comparatively moderate and lands in general bear a saleable value. The Collector is of opinion that the ryots of this District do not require a special remission but that they should participate in the benefit if any general reduction of taxation were to take place throughout the country.

In Tinnevelly for the dry and garden lands there are no rates of commutation fixed. The highest rate paid by both is Rs. 10-3-0 and the lowest Rs. 0-3-3 per chain. As regards nunjah lands several systems have been in operation. The last of these was the Oloongoo. According to this system the highest rate

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paid for one grain cottah is Rs. 3-6-9 and the lowest is Rs. 2-1-11. Fourty-four per cent. of the gross produce is taken as the Government assessment. The extent of nunjah cultivation in Fusly, 1232 was seed cottahs 97,371, and the average of the 5 years ending with Fusly, 1261 was 98,843. No new produce has been introduced since the former period. The Collector submits decennial price lists. They do not shew any material decrease.

The Commutation Rates in the Northern Division of Coimbatore were calculated from the average prices of the seven years preceding the time of settlement. In the southern division the average selling prices of a few places only, as they obtained 12 years prior to the settlement, seem to have regulated the rate of taxation. In Coimbatore the proportion of the produce taken for the assessment of Government is $\frac{2}{3}$ths with reference to poonjah lands, $\frac{1}{3}$rd for gardens and $\frac{1}{2}$ for nunjah. The Collector forwards a statement shewing the cultivation of the several descriptions of grain now sown. In Fusly, 1260 the amount of land cultivated was 12,58,531 cawnies. The increased value of new products has benefited the ryot, but they require more labour and expense than the generality of the inhabitants can afford. The same grains are sown now (1853) by the poorer classes as 50 years ago. The increase on the price of grain is not much, the percentage averaging for paddy, cumboo, cholum and raghee from Rs. 5-7-5 to Rs. 24-6-10 and for horse gram 60. A statement is appended to the report exhibiting the profit obtained by the ryots from present prices compared with Commutation Rates. Decennial statements of prices are submitted. The Collector says that in some instances the Government demand is "fully as much as the land can bear, in others it is more, again in a few it is favourable." This is pretty clearly shewn by the quantity of waste land to be found in every talook and needs no lengthened explanation. The Collector of Canara in his letter dated 9th August, 1855 replying to the queries of the Board of Revenue, states that he cannot now ascertain distinctly the rate at which the original settlement of the district was determined. The Government portion is $\frac{1}{3}$rd of the gross or $\frac{2}{3}$rds of the net produce of the land; but so enormous a taxation is in practice reduced by the low estimate at which the productive power of the land is estimated, when applications for new lands are received. On the old estates the assessment absorbs the whole of the landlord's share. The fluctuation of prices is severely felt, and the Collector considers that relief can alone be afforded by a fresh examination of the capabilities of the estates. A statement of the price of grain is appended.

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The Collector of Malabar affirms that in his district the commutation prices on the wet lands were fixed at the time of the Mahomedan Government and have since remained unaltered. Those on dry lands were, when the settlement was made, calculated on the average selling prices for the ten years antecedent to Fusly, 1256. On the former, the Circar share of the gross produce ranges from 30 to 50 per cent. and on the latter 20 per cent. for Moddom and Eloo and 12 per cent. for Ponom. The Commutation Rates are unfavourable to the ryots, but they derive returns from so many sources not brought to account that it does not appear that they require relief. Decennial grain prices are affixed.

CORRESPONDENCE ON ATTACHING LIGHTNING CONDUCTORS TO POWDER MAGAZINES.

Indian Records, No. XXII.

THE papers which form this number of the Government Selections are of a controversial character. In 1838, Sir William O'Shaughnessy* was requested by the late Military Board to report upon the expediency of attaching Lightning Conductors to Powder Magazines. He published three reports, all of which were unfavourable to the use of conductors. The two first of these reports were transmitted by the Hon'ble Court of Directors for the opinions of Professors Faraday and Daniell, and the last report was referred to Professors Faraday and Wheatstone. These three gentlemen combated seriatim all the arguments adduced by Sir William O'Shaughnessy.

The subject matter of the report is introduced by a selection from Arago's Meteorological Essays on the general utility of lightning conductors. He says that "if lightning conductors are asked for and erected, it is simply out of deference to the decisions of the Academies" and notices that many object to their use, asserting that they call down the thunder-bolt on the buildings upon which they are elevated, and endanger the neighbouring houses, by inviting the descent of the storm cloud, which might else have passed on and harmlessly discharged its contents. He however, asserts that it is "a matter of fact" that lightning conductors have preserved the buildings upon which they have been established. He instances that the damage done to Strasburg Cathedral by lightning was for-

* Superintendent, Electric Telegraphs in India.

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merly such as to occasion considerable expense. Since the erection of a lightning conductor no damage has been sustained and this item of expenditure has disappeared from the Municipal budget. Many other examples are given. On the 22nd December, 1838 the late Military Board, in consequence of the blowing up of the Powder Magazine at Dum-Dum by gunpowder ignited by lightning, addressed a letter to Dr. O'Shaughnessy requesting his opinion upon the efficacy of lightning conductors. On the 27th December, 1838 Dr. O'Shaughnessy acknowledges the letter from the Military Board. He states that the subject to be reported on, is one of great difficulty. Lightning conductors even when properly constructed are by no means the infallible protection so generally imagined. Biot has affirmed that within sixty feet interval between conductors no accident can happen, yet in Chowringhee alone, in an area of one square mile, where there are upwards of 300 lightning conductors, accidents frequently occur both in protected and unprotected houses. He attributes these accidents chiefly to "the vertical window rods" which have all the danger of ill-contrived conductors.

Dr. O'Shaughnessy is of opinion that a powder magazine, rounded in outline, of trifling elevation, containing no metallic furniture, removed from other buildings and not necessarily in the contiguity of conducting objects, stands scarcely any more chance of being struck by lightning than an equal area of soil. And moreover that from the "lateral discharge"* there is a positive danger in employing conductors near powder magazines. With regard to the materials and dimensions of conducting bars, he observes that it is unnecessary to construct them of copper or to make them one inch in diameter. Iron can be preserved bright by attaching to it small pieces of zinc. If the point be gilt or platinized, the rod will corrode much more rapidly that if unprotected. The arguments brought forward to shew the inexpediency of lightning conductors as applied to powder magazines are :—

1. That these buildings, are not more exposed than an equal area of ordinary ground.

2. That a discharge may occur too great for the capacity of a single conductor, in which case the electricity will divide itself.

3. That though the discharge may pass to the ground, the lateral electric disturbance may occasion an explosion within the magazine.

* The nature of which is explained in Appendix H.

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The Military Board thank Dr. O'Shaughnessy for his report and request to be informed whether in his opinion a series of conductors would add to the security of a Magazine. Dr. O'Shaughnessy in reply states that a multiplicity of conductors, though it would obviate all danger from direct discharge, would increase that from lateral discharge. Professor Faraday in a letter dated 5th September, 1839 acknowledges the full weight of Dr. O'Shaughnessy's paper but is still of opinion that "conductors *well applied* are perfect defenders of buildings from lightning." He recommends copper conductors instead of iron, for, the former metal conducts electricity almost 7 times better than the latter. Conductors should be pointed, should not be placed far from the building and should be connected by plates of copper with moist earth. They should be of a certain height in relation to the area of the roof of the building. There is no fear of a lateral discharge from a *well-arranged* conductor. Professor Daniell on the 24th August, 1839 animadverts upon the report of Dr. O'Shaughnessy. The Professor expresses his surprise that "the question of the efficacy of lightning conductors which has been considered as settled by all the leading philosophers in Europe and America after an experience of 100 years, should still be thought undetermined by some of the scientific men in the Hon'ble Company's service." Nothing can be more unfounded than the supposition that lightning conductors have the power of *attracting* a discharge of lightning to places where without them it would not occur. The path of the discharge is "determined by what may be the line of least resistance in the whole distance between the two great electrical surfaces" of which the conductor can form but a minute part, though it may control sufficient for the protection required. Again the lateral discharge is in fact only a division of a portion of the principal discharge from an insufficient conductor to another which can relieve it. Now the purpose of a lightning rod is to provide a sufficient conductor for the electric fluid which may fall upon it. Professor Daniell thinks that the electrical history of Chowringhee "must be extremely interesting and it would greatly benefit science if authentic facts were published." Dr. O'Shaughnessy however only mentions the facts upon hearsay. Professor Daniell states that the rod should be of copper, both because of its superior conducting power and since it is not liable to oxidation and corrosion. Dr. O'Shaughnessy submits his second report and promises that having once more referred to Professor Faraday he "will bow to a contrary decision with the full conviction that he has acted upon erroneous views" at the same time he deprecates that Mr. Daniell should have wandered from the question, which is simply "are we to attach lightning rods to *powder*

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magazines, and if so how are we to place them so as to ensure the maximum of safety from every accident." Dr. O'Shaughnessy discusses in his second report these two questions :—

1. Would danger be diverted from a building, liable to be struck no more than an equal area of soil, by a lightning conductor?

2. Could the conductor become a source of danger?

Many instances of objects being struck in close proximity to lightning conductors are given in the report and from the facts mentioned, Dr. O'Shaughnessy says it is apparent "that there is more danger in giving one conductor to a magazine than in leaving it altogether unprovided." The report then goes on to explain what is meant by a lateral dicharge and its existence is proved by experiment.

In many instances the lateral discharge has been seen to exist. Thus a flash struck the mast of H. M. ship *Rodney* as she was cruising in the Mediterranean, escaped from the mast 7 feet above the deck and was seen by all to go over the nettings and strike the sea at a short distance from the ship. Dr. O'Shaughnessy promises to collect the electrical history of Chowringhee and regrets that he cannot then appropriately notice the courteous remark of Mr. Daniell upon this subject. In a letter, supplementary to the 2nd report it is proposed to erect in lieu of iron or copper, "conductors of sheet copper attached to masonry pillars 3 feet square at the base, tapering to 1½ feet at 30 or 35 feet high and terminating in a light spar of 10 to 15 feet." Along this support a three inch copper strap should be fixed, which should be led into the ground as far from the building as economy would permit, but never less than 10 feet deep. Such conductors are erected because Dr. O'Shaughnessy is of opinion that it is the surface of conductors and not the mass which is required for the safe conveyance of the electrical discharge. Professor Daniell on the 10th May, 1841 reports upon the above. He observes that he cannot admit that the case of a properly constructed Magazine "arched and rounded and in its outline of low elevation" is altogether different from that of an ordinary house. In the grand system of natural operations carried on in a thunder storm even considerable elevations bear little proportion to the enormous surfaces which are brought under induction and do not influence the discharge to any extent, in proof of which the lightning has often been seen to strike the level of the sea, even in the vicinity of high masts of ships armed with conductors. Professor Daniell states that the only measure of the *capability* of a conductor to convey a discharge is its capability of resisting fusion. If it be fused by the discharge a considerable part must pass to the surround-

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ing object. In the case of non-fusion a small portion would pass through a small interval of air from the main conductor to another good conductor placed at a very short distance from it. But one of the obvious precautions in erecting a lightning rod is to place it at a great distance from any such good conductor. With regard to the dangers to be apprehended from a lateral discharge Professor Daniell is of opinion that with properly conconstructed conductors there is nothing to be feared from it. In erecting lightning conductors it would be a fatal mistake to rely upon the surface without regard to the thickness of the metal. If there be one law of electricity which is better established than another, it is that the conducting power of all bodies is directly as the area of the section. Professor Faraday in his second report dated 9th June, 1841 says there are three points under which all that is for consideration may be arranged:—

First. Whether a good lightning conductor can cause a discharge where there would not be one otherwise?

Second. Whether when the electric fluid falls upon a conductor, a part may not pass from it in the form of lateral discharge and occasion harm?

Third. Whether, at the moment the lightning conductor is struck, it may by induction upon the gunpowder casks lined with copper, cause sparks to pass between them without any actual lateral passage of lightning from the conductor?

With regard to the first Professor Faraday thinks that a good conductor may attract lightning. It is to this quality that it owes much of its usefulness, but that it should cause a discharge upon itself and also upon a neighbouring object, and that not by a lateral discharge, is contrary to Professor Faraday's experience. The most important point is the second. Mr. Faraday repeats the words of his former report upon this subject, and says that a lightning conductor, if not of sufficient thickness and not well arranged as to its termination with the earth, may give lateral discharges, even when the quantity of electricity passing through it is not a thousandth part of that required for its fusion, or which the conductor could safely convey. But for this to happen it requires an arrangement which he has already protested against. He illustrates his position by an experiment. A good lightning conductor should be a copper rod one inch in diameter, should be well connected by copper plates with the moist ground or water and should rise high above and be placed near to the building to be protected. "It should not come near masses of metal in the building, as a metal roof, or an iron column, or leaden pipe or bell wires; or if it does, these should be metallically connected, with

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it, at the same time the stored masses of powder should be purposely separated from each other." Surface has no influence over the power of a lightning rod and copper ribbons may not be used for a copper rod of equal superficies.

Mr. Faraday is of opinion that "the gunpowder casks lined with copper within the magazine" are perfectly protected, from sparks caused by induction, by the roof of the building, as the casks can only be exposed to the induction of the cloud before the spark passes.

The Honourable Court of Directors being satisfied with the opinions of Messrs. Faraday and Daniell directed that all magazines throughout India should be provided with lightning conductors. However on the 31st December, 1844, they again deem it advisable to ask the opinion of Dr. O'Shaughnessy upon the subject of attaching lightning conductors to gunpowder magazines. They adopt this course because Captain W. S. Pillans, Commissary of Ordnance at Cawnpore, in a letter addressed to the Board, had stated that it would not be expedient so to do and his opinion was fully concurred in by Captains Weller and Fraser of the Engineers. Accordingly on the 4th August, 1844 Dr. O'Shaughnessy submits a third report. The report is arranged under five heads :—

1. Can ordinary lightning conductors attract discharges on themselves?
2. Are they capable of exhausting silently the electricity of the clouds so as to render it harmless?
3. In conveying discharges do they ever permit a portion to leave them? If so under what circumstances does this occur ?
4. When lightning conductors convey an electric discharge to the earth can this discharge produce sparks in adjacent metallic bodies by induction ?
5. Assuming an affirmative answer to all these questions, can powder magazines be protected from the effect of lightning?

Those electricians who contend that the conductor is strictly passive, *i. e.* has no attractive power, affirm that the very great area of "excited cloud and earth" renders the action of a mere point inappreciable, that lightning often avoids conductors, that pointed metallic bodies "exhaust the electricity of the clouds and cause them to shrink back and lastly that lightning has seldom been known to fall upon buildings involving in their construction metallic conductors." To all these statements Dr. O'Shaughnessy replies. He maintains that metallic rods have the power of commencing the discharge, that this commencement induces the following discharges to continue in the same route, that pointed conductors are struck with a

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degree of frequency which seems impossible from their smallness, unless they possess attractive power. Dr. O'Shaughnessy under the second heading of his report observes that if the thunder cloud approach rapidly, if its area be great and the quantity of electricity be of that prodigious amount which is witnessed in Indian storms, then the exhausting power of the rod is too insignificant to prevent explosive discharges. The 3rd and 4th divisions of the report are considered together and are answered in the affirmative. With regard to the fifth head whether powder magazines may after all be protected, Dr. O'Shaughnessy observes "that the means of ensuring safety are still obviously within our reach." It is well known that we may discharge the most powerful batteries on a metal powder flask without the slightest danger to the contents. It is impossible to kill a bird in a wire cage by the electric fluid. He therefore recommends that at every six or ten feet of the length of a powder magazine, copper straps two inches wide be attached to the wall and carried over the roof down to the ground. These straps should all be in a vertical line. A similar band should run horizontally along the roof and have parallel bands at every six feet. At the level of the ground another horizontal band should run. All the intersections should be rivetted or soldered together and from each corner a copper rod with branches should be led into the ground. To protect Cawnpore magazine, in this manner, a building 110 feet long, 72 feet broad and 23 feet high would, according to the estimate given in the report cost Rs. 1500.

Dr. O'Shaughnessy again states that he considers a magazine exposed to greater risk with ordinary conductors than without them.

The third report was transmitted to Professor Faraday. Professor Faraday again states that nothing advanced in the report can at all tend to an alteration in his views. He therefore begs that his former report may be considered as an answer to this also. He attributes Dr. O'Shaughnessy's erroneous conclusion to a confusion of the *static* and *dynamic* effects of electricity.

On the 8th of August, 1845 Professor Wheatstone in compliance with the request of the Political and Military Committee transmits his opinion upon the 3rd report of Dr. O'Shaughnessy. He says that Dr. O'Shaughnessy has not adduced a single experiment in support of the efficacy of his system. He agrees with Dr. Faraday that while the plan proposed in the report will have no superiority in preventing lateral discharges, the insecurity will be augmented in "consequence of the liability of the flashes occurring between disconnected portions

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of the ramified conductor itself." He is of opinion that the discussion has been productive of good.

On the 30th June, 1845 a report of by a Committee of Royal Engineers dated 3rd March, 1828 upon lightning conductors is transmitted for the information of the Court of Directors. The Committee in their report state that they requested information from several scientific members of the Council of the Royal Society. The conclusions they came to were the following :—

1. That the conductors should be metallic rods, elevated some feet above the highest ridge of the building to be protected, pointed at top and terminating either in water, which is the best arrangement, or in a moist stratum of earth at some distance from the building and that the lower end of the rod should fork out into more branches than one.

2. That the least oxidable metals are the best conductors. therefore copper is preferable to iron, but a mixed rod having the top of copper and the remainder of iron will answer the purpose.

3. That an iron rod used as a lightning conductor ought to have a diameter of an inch and ½.

4. That the point or superficial application necessary for preserving an iron rod from corrosion will not affect its conducting powers. *Superficial* oxidations are not of much consequence.

5. That insulated conductors at the distance of 10 or 12 feet from the walls of a building are preferable to those which are attached to the building itself.

6. That in the case of conductors being attached to the building all abrupt turns should be avoided. Also that the rod should be in contact with some non-conducting substance.

7. That it is a point of the utmost importance to preserve lightning conductors in good repair.

8. That metallic ridges, hips and gutters may, if connected with metallic water-pipes leading outside into the drains below, answer the purpose of conductors.

9. That the practice of covering roofs with iron plates is not injurious to the safety of the building, provided that the metallic water-pipes be perfect, and that they do not terminate abruptly before reaching the ground.

10. That there is no objection to the use of metallic ridges, hips, gutters, &c. on the roofs of powder Magazines the same precaution being taken. Metallic roofs not connected with the ground are highly objectionable.

11. That there is no objection to the prevailing practice of covering the doors and window shutters of magazines with sheet copper.

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12. That to any building in which more than the usual amount of iron is used there is no danger, provided that a continuity of the metal from the roof to the ground be obtained. After the receipt of this report the Hon'ble Court of Directors "have no hesitation in expressing their desire to the Governor General of India that lightning conductors be forthwith applied to all station Powder magazines at the three Presidencies."

The Appendix consists of extracts from a treatise by Sir William Snow Harris on thunder storms.

MEMOIR OF SATARA.

Bombay Records, No. XLI.—New Series.

On the 1st May, 1854 a Memoir of Satara by Mr. T. Ogilvy, late Commissioner of that Principality, was submitted to Government. At the close of the late war in the Deccan, Satara was bestowed upon a descendant of Sivajee and certain Chiefs or Jageerdars were placed under his authority. They were bound to pay tribute or to aid the Raja with all their forces. The Raja on his part engaged to be at all times guided by the advice of the British Government and in time of war to place his resources at their disposal. The entire territory is divided into two parts by a chain of hills branching off from the Mahadeo Range near Phultun and running North and South for 50 or 60 miles, nearly to the banks of the Krishna near Walwa. The district to the west is hilly, well cultivated and productive, that to the east on the contrary is flat and barren, there is scarcely any rain and the population are predatory. This district, however, yields excellent pasturage. Under the Rajas the land tax was excessively high and the revenue system was ryotwar. Criminal justice was duly administered. Trifling cases were under the cognizance of local officers but important ones were decided in person by the Raja.

The machinery for the execution of civil justice was well organized and worked admirably. Suits to the value of 25 Rs. were disposed of by local officers, those of a more important nature by the Nyadishes, from whose judgment an appeal could be made to the Rajah. The Raja's revenues amounted to about 13,50,000 per annum. His expenditure was as follows :—

Privy Purse, ...	Rs. 5,00,000
Military Establishment, ...	Rs. 5,50,000
Civil and Criminal Justice, &c., ...	Rs. 3,00,000

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He was liberal in his expenditure on public works, endowed a hospital and died on 5th April, 1848. Before death he expressed a wish that he might adopt as a son, a boy by name Bulwuntrao Bhoslay, it was however determined to annex Satara. Mr. Frere was accordingly appointed Commissioner and was instructed to carry on "the business of the State." All proceeded quietly until May, 1850, when the Ranees rejecting the liberal offers of Government commenced a vexatious course of intrigue. At length a final and satisfactory arrangement was made in December, 1851. The lands and private property left by the Raja to the Ranees, which amounted to upwards of Rs. 15,00,000, was restored and divided amongst them. In addition a life allowance of Rs. 1,00,000 a year was settled on them in the following proportions :—

To the Senior Ranee,	...	...	...	Rs. 45,000
To the Second „	...	...	...	Rs. 30,000
To the Third „	...	...	...	Rs. 25,000

And they were allowed to retain for life the old and new palaces. The Ranees gave up to Venkajee Rajee from their own allowances and from their hereditory property Rs. 60,000 a year.

Bulwuntrao Bhoslay retained possession of the property amounting to about Rs. 1,42,471, given to him by the late Raja, and received in addition an allowance of 600 Rs. a month. To the widow, adopted son, and the daughter of the Ex-Raja were assigned liberal pensions, to each Rs. 1,200, a month. An allowance of Rs. 100, per mensem has been given for the support of the mother, widow, two sons and a daughter of the late Moozufur Jung, the illegitimate son of Bhow Saheb, second brother of the late Raja of Satara. The whole of the establishments of the late Government have been remodelled. The cavalry of the late Raja have been partially disbanded and partially enrolled in the lightwing of the Southern Muratha Irregular Horse, which regiment costs about Rs. 2,71,092, per annum. The artillery were disbanded and the "local infantry are to be converted into a police corps." Much has been done to improve the province since its annexation, by roads and works of irrigation. All tropical products flourish, including grapes, figs, oranges, coffee, cotton, sugar, opium and tobacco.

SATARA JAGEERDARS.

Bombay Records, No. XLI.—New Series.

On the accession of the late Raja, the supervision over the Satara Jageerdars, which had been previously exercised by

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the Ex-Raja was transferred to the British Government, who, controlled the financial condition and civil and criminal administration of their estates. The Jageerdars have no longer the power of life and death, neither can their territories be viewed as foreign States, since offences committed in their territories by British subjects or by subjects of the Jageerdars no longer involve important international questions. The Jageerdar of Akulkot owes his title of Raja to the circumstance of his ancestors having been patronised by the house of Satara. Futteh Sing Bhoslay made himself independent of the Peshwa and ruled for 40 years he was succeeded by his son Malojeerao Bhoslay in April, 1823. The present Raja is Shahajee Rajé Bhoslay, he is now 36 years of age and owing to his improvidence the estate is encumbered. He has one, son aged 20 years, and one younger brother. He usually resides at Kusba Akulkot. The Jageer is not tributary but furnishes 93 horsemen to the Honorable Company, they do duty in the Collectorate of Sholapoor. The estimated gross annual income is Rs. 1,46,027, in 1820 the annual revenue from the Jageer was Rs. 3,00,000. The Jageer is situated to the west of the Nizam's territory and contains an area of 986 square miles. The usual means of irrigation is by wells. The roads are mere cart-tracks passable only in fair weather. The Hindoo religion prevails; Murathee, Canarese and Hindoostanee are spoken, the prevailing castes are Brahmins, Wysees and Shoodras. Civil cases are disposed of in the Court of the Nyadish, notices and summonses thence issue. In case of the non-attendance of the defendants decisions are passed exparte. Appeals lie to the Raja if made within a month. Trifling criminal cases are disposed of by the Foujdar, the Raja tries graver offences. Capital cases alone, are committed by the Raja for trial before the Political Court of Criminal Judicature presided over by the Collector of Sholapoor. The rule of the Raja is mild and the people are happy and contented. Indebtedness is the only difficulty this Chieftain has to contend with. To the report is appended an agreement, dated 3rd July, 1820, between the Hon'ble East India Company and the Raja. All persons having committed crimes within the Jageer and who take shelter in the British territories are to be given up to the Raja.

In 1779 the Jageer of PruteeNidhee then valued at Rs.12,00,000 came into the possession of Purushram Punt Prutee Nidhee. He was imprisoned by the Peshwa but was released in 1810 and a territory yielding two lakhs of rupees was restored to him. The present holder of the Jageer is Purushram Punt Prutee Nidhee, Sirdar of the 1st class, aged 23 years. He resides generally at Satara but has residences at Kurar and Anud in the

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Satara districts. He has one son, born 22nd March, 1854 named Krushnrao, the report enumerates the principal persons of his Court. He pays no tribute to Government, but the Punt Sucheo holds Sahotra Babs, equal to about 6 per cent. on the collections, on some of his villages. The gross annual revenue is Rs. 73,014. The Jageer is made up of various estates scattered throughout the Satara territory. The religions are Hindoo and Mahomedan, the languages are as in the abovementioned Jageer. The population in 1850 was 65,929.

Civil and criminal justice are administered in imitation of the mode in the Satara territory. A Schoolmaster from the Board of Education has been appointed at Atparee. In the other villages there are indigenous Schools. In 1820 an agreement was entered into between the Honorable East India Company and the Punt Prutee Nidhee, which placed the latter under the Government of the Rajah of Satara, the report contains the agreement.

In 1822, Chimnajee Shunkur Punt Sucheo was adopted by Shunkur Rao. The name of the present Chief is Chimnajee Rugoonath Punt Sucheo. He is aged 25, and has one son, his usual place of residence is Bhore, the report enumerates the principal persons of his Court. "On his adoption in 1837, he was required to pay a Nuzur of Rs. 53,021-8-0 to the Raja of Satara, and a Nuzur of Rs. 27,703 to the British Government, on account of the possessions held by the Jageerdar within the Raja's and British Territory." He pays to Government an annual tribute of Rs. 5275. The estimated gross annual revenue of the Jageer is Rs. 1,16,075, in 1827 it was Rs. 2,50,000. The country is watered from wells and dams upon the streams. The roads can only be travelled by bullocks or horses. The religion of the people of this Jageer is Hindoo and the language is Murathee. Civil and criminal justice are administered after the mode in the Satara Territory. There are indigenous Schools but no new educational measures have been adopted. On the 22nd April, 1820 an agreement was entered into between the Hon'ble East India Company and the Punt Sucheo, when the Punt was placed under the dominion of the Raja of Satara. The report contains the treaty, as also another dated 3d February, 1839 consequent on the adoption of Ramjee Appa by the late Punt Sucheo Rughoonath Rao.

The Chief of the Jageer of Phultun is Moodojeerao Naik Nimbalkur, Sirdar of the first class, now aged 19. On the 22d April, 1821 an agreement was entered into with the Nimbalkur by which he was to be considered as a Jageerdar of the Raja of Satara, but under the guarantee of the British Government. The report contains the treaty. The usual place of residence of

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the present Chief is Phultun, he had in 1854 no issue. The report enumerates the principal persons of his Court. This Jageerdar supports 75 irregular cavalry, for the service of Government, at an annual expense of Rs. 23,304. The estimated gross annual revenue is Rs. 70,621. The area of the Jageer is about 400 square miles and is bounded on the North by the Poona Zilla, on the other sides by the Satara territory. There are 3720 beegas under cultivation, these are irrigated by wells. The only road practicable for carts is from Sholapoor to the coast. "The finances of this Jageer have been so arranged, that whilst provision has been made for the liquidation of the debts in a few years, Rs. 3,000 a year are to be set apart for the construction of roads, which are much wanted to develope the resources of the estate." The religions are Hindoo and Mahomedan, the languages spoken are Murathee, Canarese, and Hindoostanee. Civil and criminal justice are administered as in the Satara territory. Measures are being taken for the establishment of an English School at Phultun. A Vaccinator was appointed in A. D. 1845. In A. D. 1854 he had vaccinated about 7,219 children, one-seventh of the population.

The Jut and Kurjee Mahals were in December, 1823 conferred upon Ramrao Duflé. They were then estimated at Rs. 1,90,000 but owing to mismanagement they did not yield above Rs. 4,0000. The present Chief is Amrootrao Duflé and his age is 24. In 1854 he had no male issue, the report enumerates the principal persons of his Court. He pays a Deshmookee Bab of Co's. Rs. 4,738-14 a year to Government, and supports for their service a contingent of 50 irregular cavalry at a yearly expense of Rs. 12,310. The estimated gross annual revenue is Rs. 61,652. The Jageer is situated to the South of the Satara territory and its area is about 700 square miles. "It is of the greatest importance to this Jageer that, notwithstanding its debts amounting to Rs. 46,651 a portion of its revenues should be devoted to the development of its resources by means of public works." The population in 1848 was estimated at 58,794, the religions and languages as in the Jageer of Phultun. Civil and criminal justice as in the Satara Territory. Measures are being taken for the establishment at Jut of an English School. There are indigenous Schools in the Jageer. A Vaccinator was appointed in 1849. In May, 1854 he had vaccinated 1-14th of the population. A treaty was entered into with the Duflé Kur on the 22d April, 1820 by which he was "considered a Jageerdar of the Raja of Satara, but under the guarantee of the British Government." "Some pains have been taken to give the minor Chiefs in the Satara territory an education that may enable them to conduct with credit the

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important duties they are destined to discharge. The tendency of Muratha Chiefs is to fall into sloth and self-indulgence, and to leave their estates to be mismanaged by clever but unprincipled officials. It requires, therefore, constant watchfulness on the part of the Agent for the British Government to prevent the finances from falling into confusion, and the pay of the establishments from getting into arrears. The British Government being bound, not only by treaties with those Chiefs, but by the supremacy they hold in India, to require good government at their hands, a careful supervision over their affairs is absolutely necessary, for the sake of the Jageerdars themselves, as well as of the people subject to their authority."

HISTORY OF THE RAJAS OF SATARA.

Bombay Records, No. XLI.—New Series.

On the 1st January, 1827 Major General Briggs transmits to Government a few brief notes relative to the History of the Rajas of Satara and of the Satara Jageerdars.

In 1707 when Sahoojee was released by the Moguls, his aunt Tarabaee ruled as Regent in the name of her son over the territory acquired by Sivajee. The dissensions between Tarabaee and her nephew Sahoojee led to a division of interests, and Sumbajee, the half-brother of her son Raja Ram kept possession of the southern tract, till at length his title to a separate kingdom was admitted and a Partition Treaty was drawn up on the 26th April, 1731. The treaty is appended to the report. At this time the Peshwas of Satara made demands for Chouth on the Empire of the Mogul and began to make those conquests which contributed to the extent of their sway. In 1749 the house of Sivajee reached the plenitude of it's power. The sum for the privy purse for the Peshwa then scarcely exceeded 6 lakhs as appears from a document (Appendix B) attached. On the death of Sahoojee the expenditure was still farther reduced as is shewn by an abstract account of the receipts and disbursement prepared in 1760 by Nana Saheb, a translation of which is appended. The Rajas of Satara were always respectably and even liberally treated by the Peshwas. Nana Furnavees directs, in a letter still extant and dated 17th May, 1791, Sudaseo Anund "not to allow the marriage ceremony of the Raja's daughter to exceed 50,000 Rs." The movements of troops, preparations for war and the favourable results of battles and campaigns were regularly reported to the Raja. However, after the effort made by the Raja of Satara to emancipate himself in February, 1798, the treat-

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ment of the Rajas underwent a change. Henceforth they were close prisoners and allowed only a mock dignity. At the close of the war motives of policy induced the British Government to raise the fallen dynasty and a territory was accordingly assigned to the Raja of Satara. The history of the Satara Jageerdars has been summarised above.

HISTORY OF THE BHONSLAYS OF SATARA.

Bombay Records, No. XLI.—New Series.

On the 15th April, 1848 Mr. H. B. E. Frere, the Resident at Satara transmits to Government a narrative of the early history of the Bhonslays.

The heroic genealogy of this house is traced through the Ranas of Odeypoor and Cheytore to the Sissoday Raja of Asseer conquered and slain by Shahlivahan whose era commences in A. D. 77. The only historical value of the legend is, that it corroborates other proofs that the Bhonslays were of Rajpoot origin. Their authentic history commences with Kellojee who was succeeded as head of the house by Mallojee. Mallojee built the tank at Mahadeo and was, with the title of Raja, "commander of 1,000 horse in charge of the important fort at Sewnere with the Poona and Soopa Purgunas in Jageer." He was succeeded in his Jageers by Shahjee, the father of Venkajee and Sivajee. The history of Sivajee is detailed at length in the report, he was engaged in constant warfare with Aurungzebe and with the Beejapoor Government from which, just before his death, he exacted as the price of his alliance, the cession of the claims of sovereignty over the Carnatic and Tanjore districts. Sivajee died on the 5th April, 1630. His son Sumbajee was then in the fort of Punala. A conspiracy was entered into by his step-mother Soyerabaee to seize his person and to place her own son Raja Ram on the throne. Raja Ram obtained the throne, but the attempt to seize Sumbajee failed. Dissension soon broke out amongst the conspirators and Sumbajee ascended his father's throne. He behaved with great cruelty to his opponents and imprisoned Raja Ram. Finally he gave himself up to sensuality, was captured in a state of intoxication by a party of Mogul troops and was publicly tortured and executed by the orders of Aurungzebe at Tolapoor. Raja Ram succeeded as Regent during the minority of Sumbajee's son, Shahoo, who was not long afterwards taken prisoner by the Moguls. Raja Ram died at Singur in March, 1700. Immediately on his death Tarabaee his "elder widow" proclaimed her own

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son Sivajee. But on Aurungzebe's death in 1707 Shahoo was released by his successor and promised great additions to his kingdom if he would remain faithful to the Moguls. Shahoo quickly made himself master of Satara and imprisoned Tarabaee. But bred up in the indolence of a Mogul Court he left all affairs in the hands of an able minister. He died in a state of imbecility, childless but leaving an adopted son Ram Raja the grandson of Tarabaee. Before his death he engifted the Peshwa with the sole management of the Muratha empire, he also directed that Kolhapoor, then governed by Sumbajee the son of Raja Ram, should be always considered as an independent kingdom. A partition treaty was in 1731 executed between the two kingdoms, a translation of which is appended. Ram Raja, who succeeded, died on the 12th December, 1777, having a short time before his death adopted Abba Saheb the son of Trimbukjee Bhonslay. This adopted son was formally enthroned under the title of Shahoo. He was always kept a close prisoner. His son Purtab Sing succeeded and was closely confined by the Peshwa Bajee Rao. He and his family were captured after the action of Ashteh, 20th February, 1818, by the British and on the 11th April he was formally enthroned by the Commissioner. On the 25th September, 1819 a treaty was concluded between the British Government and the Raja ceding to him the districts he subsequently possessed. On his part he was bound to hold his territory subordinate to the British Government, not to increase or diminish his military force without its sanction and to abstain from holding all intercourse with persons not his subjects excepting through the Resident. The British Government charged itself with the defence of his kingdom. The Raja violated his treaty, was deposed in 1839, and died at Benares in 1847. He left only one daughter but was reported to have adopted Bulwunt Sing Bhonslay, as his son. His next brother having in 1821 died without issue the third brother Shahjee alias Appa Saheb succeeded in A. D. 1839 and died 5th April, 1848, leaving no issue. The report contains a proclamation issued on the 11th February, 1818, by the Honorable Mountstuart Elphinstone and the propositions made to Bajee Rao on the 1st of June, 1818, and accepted by him.

CLIMATE OF SATARA.

Bombay Records, No. XLI.—New Series.

THE small tract of Satara comprises from west to east three different lines of climate. The mountain climate of the chain

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of the Western Ghats "characterised by a highly rarefied air, a cool temperature, and almost continuous heavy rain, with dense fogs, during the south-west monsoon." The second division comprises a tract of from 30 to 40 miles in breadth lying between the base of the Western Ghats and a range of hills which branch off from the Mahadeo Hills about six or eight miles east from the Salpa Ghat and run nearly parallel to the Western Ghats. This tract consists of a succession of valleys at an elevation of from 2,000 to 2,500 feet watered by the Upper Krishna, the Koina, Yena, and Wasna. Here the heat and aridity of the summer months are moderated by regular sea-breezes; while a moderate fall of rain and an agreeable temperature characterise the climate.

The eastern and largest section of Satara consists of open inland plains. The climate is marked by dry bleak winds in the cold months, by great heat, untempered by sea breezes and extreme aridity in the hot months and by scanty rains and frequent droughts the influence of the south-west monsoon being scarcely felt. The cantonment of Satara lies in Lat. 17° 40′ N., and Long. 74° 2′ E., nearly in the centre of the second division. It is built upon a gently rising ridge. The town of Satara is situated immediately under the hills and is exposed to greater heat and receives more rain than the cantonment. It is supplied with excellent water conveyed by aqueducts from the summit of Uteshwur, whereas the water of the cantonment is brackish and is supplied by wells. The hot season sets in about the beginning of March and the rainy season lasts from the 10th to the 20th June. In this season there is liability to excessive transitions of temperature between the day and the night. The average fall of rain from 1850—54 was 39¼ inches of which two-thirds fell during the monsoon months. The month of October connects the rainy and the cold season, which commences in the first week of November. The temperature in the four winter months, excluding October, ranges from 68½° to 76½°. The climate of Satara in its physical and physiological properties holds an intermediate place between the low-lying provinces of Guzerat and the Konkun and the mountain stations. A table of meteorological observations from 1844 to 1847 is appended.

DISEASES OF SATARA.

Bombay Records, No. XLI.—New Series.

Satara has proved singularly healthy to European officers and their families. Fevers are rare except in the case of those

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who have contracted them elsewhere. When a case of primary remittent fever occurs it is generally of an insidious and dangerous character. Sporadic bowel complaints, are less common than at Poona. Of the diseases incidental to natives fevers stand at the head of the list. They amount to nearly one-sixth of the whole cases treated, cutaneous diseases are next in point of frequency and constitute about one-tenth of the cases treated. Rheumatism is seldom met with. Dysentery and diarrhœa are neither frequent or common, and occur only during the rainy season. Dyspeptic affections and dracunculus are very prevalent. In the Company's 3 regiments stationed at Satara the cases of guinea worm have usually increased during each successive year of residence, whilst in the Raja's infantry regiment there has been comparatively little increase. Scrofolous affections are of frequent occurrence. Pulmonary diseases and hepatic affections are rare. Paralytic affections are frequently met with. Hemiplegia is the most common form which the disease assumes and the speech is much less frequently affected by it than in Europe. Humid asthma is not unfrequently met with amongst the aged. Few other diseases are deserving of particular notice. The discharge of larvœ, from the nose and more rarely from the ear is not at all an uncommon affection with the natives.

CENSUS OF THE SATARA DISTRICTS.

Bombay Records, No. XLI.—New Series.

The Census under the supervision of Mr. H. B. E. Frere was taken on the 15th September, 1848. The month of September was chosen as being a general harvest month and one of the best for ascertaining the stationary population. The Census tables are appended to the report. The total population of the lapsed Satara districts was 9,63,069, of the Jageers was 3,61,453 thus giving a grand total of 13,24,508, of this number 6,89,286 were males and 6,35,222 were females. The number of houses in the lapsed districts was 1,50,608, that in the Jageers was 62,954 from which we have a total of 2,13,562, of these only 65,709 were tiled. The number of vehicles in the lapsed districts was 8682 and in the Jageers 1633. Out of these 10,315 carts, 6,614 had wheels of stone. In the Jageers and lapsed districts there were 67 elephants, 28,359 horses, 270 camels 7,69,163 cows and bullocks, 1,92,978 buffaloes, 7,35,769 sheep and goats and 8630 asses and mules. From the tables it is apparent that the females above 60 years of age are every where in excess of the males, in the general proportion of about 11

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males to 17 females. Between the ages of 13 and 60 the males are every where, except in the Walwey and Koregaum Petas and Phultun Jageer in excess of the females, the proportion being 56 males to 53 females. Under 12 there are 63 male children to 47½ females. On the whole males are in excess of females in the proportion of 86 to 79. The general proportion of persons in a family is 5⅔ths and of children under 13 about 1⅔ths. The great paucity of the means of transport as shewn by the returns of vehicles will "hardly escape the notice of Government." Akulkot with 77,000 inhabitants has but 100 vehicles and several of the Satara districts are as badly off. The small Jageer of Phultun possessing three lines of road passable for carts is the best in this respect. With a population of 47,000 it has 568 carts. The reason for this deficiency of the means of transport is the want of good roads.

REVENUES AND RESOURCES OF THE LAPSED SATARA TERRITORY.

Bombay Records, No. XLI.—New Series.

Mr. T. Ogilvy, late Commissioner of Satara reports upon the revenue settlement of that territory for the official year ending 30th April, 1851. From the report it appears that under the Ex Raja, the late Raja and the British Government, the gross revenues averaged Rs. 31,80,377, Rs. 31,20,350, and Rs. 30,80,746 respectively. The actual realisations were Rs. 14,33,241, Rs. 13,64,280 and Rs. 15,72,173 under each, whilst the disbursements were Rs. 13,79,549, Rs. 13,76,895 and Rs. 14,25,052. There was a surplus during the first period of Rs. 53,692 a deficiency during the second of Rs. 12,615 and a surplus during the last period of Rs. 1,47,121. At the time of the report it was anticipated, that revenues to the amount of Rs. 1,50,000 would be abandoned, as arising from objectionable sources, but, as the pensions then amounted to Rs. 3,23,329-11 per annum it was thought that when they were reduced to the ordinary average of 6,000 Rs. there would still be a surplus of about Rs. 1,50,000 a year. The outstanding balances which have accumulated since 1825-26 amount to Rs. 11,36,027-9-10, exclusive of Rs. 83,359-10 on account of fees leviable from caste suitors, of these a small portion only will be recoverable on account of the time elapsed and the defective state of the revenue records.

The territory of Satara comprises the 11 districts of "Satara,

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Turgaum, Kurar, Walwey, Jowlee, Waee, Koregaum, Khanapoor, Khutao, Punderpore and Beejapoor, exclusive of the territories of independent Chiefs." The first six named are the most populous and fertile, the last four have been depopulated by war and famine. In the western division of Satara the irrigated lands produce four crops and the unirrigated lands two crops in a season, whilst in the east the irrigated lands produce only two and the unirrigated but one. The culturable land in the territory contains 29,23,167 beegas of which 26,62,283 beegas are cultivated. The land under cultivation yields Rs. 31,60,795 or Rs. 3,58,333 less than the Kumal. Of that little more than half is due to Government. The culturable land lying waste would if cultivated yield Rs. 78,930. The assessment is in all cases upon the land and not upon the crop. On irrigated land it averages Rs. 20-8, on unirrigated Rs. 14, on rice land Rs. 17 and on hill side land Re. 1-13 a beega. A reduction of the assessment is necessary on account of the fall in prices. Under the Rajas the emoluments of hereditary officers were very inadequate, they are now raised to a standard more commensurate with their responsibilities. The village accounts which were kept on loose leaves and never balanced at the end of the year, are now regularly kept. The day books are balanced daily and the accounts of individuals yearly ; receipt books are given to each cultivator, in which their payments are regularly entered. The same improvements, have been introduced into the mode of keeping district accounts. Formerly no care was taken to realise the revenue by instalment and the ryots were pressed for payment when they should have been left undisturbed to their agricultural pursuits. Instalments are now collected at those seasons when it is most convenient for the cultivators to pay them and the district officers are made responsible. It was always necessary under the native rule to make large yearly remissions which however rarely reached those who needed them. Fields whose crops are stated to have failed are now minutely inspected by the village and district officers and remissions are granted after careful enquiry. Annexed to the report there is a list of the cereals and pulses and of the oil and fibrous plants which this country now yields. In 1851, 9515 beegas of native sugar-cane and 5,535 of Mauritius cane were grown. Of tobacco there were 5,884 beegas and of cotton 11,155 beegas. It is estimated that about 36,727 acres might be cultivated with cotton in the Satara district. But in 1851 upwards of 4,000 beegas of land, sown with New Orleans cotton seed, owing to an unusually adverse season almost entirely failed. Works for the improvement of old roads and the creating new ones are proceeding most energetically. The report touches upon

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the flax, fruit trees, timber and salt of the district and proceeds to name the objectionable taxes. The native sheep are good, but the attempt to improve the breed by crossing them with the merino sheep failed. The country still furnishes a small supply of horses for exportation to the Nizam's territory. Mr. Ogilvy strongly recommends the adoption of Captain Hart's proposition to devote Rs. 1,00,000 a year to irrigation. The reporter suggests that he may be permitted to grant land on Meeras tenure, which compels the Ryot to pay the rent of his land even when it lies waste. The quit rents in the Beejapoor district require revision. Statements of the quantity of cotton grown from 1849 to 1851 are annexed to the reports as also are appendices whose contents have been summarised above.

OLD PUBLIC BUILDINGS AND MANUSCRIPTS OF BEEJAPOOR.

Bombay Records, No. XLI.—New Series.

THE report commences by giving extracts from certain letters which passed between the Resident and the late Raja relative to the preservation of certain ancient buildings.

In 1849 Mr. Frere submits a report regarding the Arabic MSS. at Beejapore. He says that they are apparently the remains of a Royal Library. They are kept in the Assur Mahal one of the few large buildings which are still in tolerable preservation. It stands upon a large tank and consists of a great hall enclosed on three sides and open only to the east, on which side the roof is supported by lofty wooden columns of great size, between these formerly hung enormous screens of rich cloth. The hall is 120 feet long by 35 feet broad. The remainder of the building is divided into two stories. The upper floor contains some rooms one of which is used for stores and the other is the shrine of the Tubrook. Between them is "the usual T-shaped audience chamber, the horizontal portion occupying the length of the building, and the perpendicular opening out as a kind of gallery or balcony, looking into the great hall. From this gallery the relics are annually exposed to the view of the crowd below.

The lower or ground-floor is occupied by a room under that in which the relics are kept, whence unbelievers are excluded, lest they should do disrespect to the relics above. Adjoining this room is the one appropriated to the library.

This latter is a small apartment, fitted up with shelves, divid-

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ed into cupboards, in which the books were formerly arranged ; but the white-ants had found their way through the walls in various directions, and the books are now kept in boxes.

They appear to have been entirely neglected of late years, till visited by the late Mr. C. D'Ochoa, a French subject of Spanish descent, who travelled in this country six or eight years ago." A translation of the catalogue drawn up in 1849 by Humeed-ood-deen Hukeem of the manuscripts of the Library prepared by Mr. J. C. Erskine is appended.

On the 10th December, 1852 the Rev. J. Wilson, D. D. says that the collection at Beejapore is one of considerable value. Its special interest consists however in its forming the body of the works which were the fountains of religion and law to the Beejapoor dynasty from A. D. 1489 to A. D. 1672. In Grammar and Lexicography it contains few manuscripts of any value, in Logic it is copious, in Arithmetic, Mathematics and Astronomy it does not offer much of interest, though only a few of them are known, of works of poetry, geography and history it is nearly entirely destitute. Dr. Wilson recommends that the entire collection should be sent to the Court of Directors, it should not be broken up in Bombay.

On the 23d February, 1850, Mr. Hart prepared an estimate for the probable expense of repairing the Ebram Roza, the Taj Bowree, Mehtree Mahal, Jumma Musjid, Assur Moobaruk, Goola Goomuz, Begum Tulao and Torwa Null. The estimate amounted to Rs. 5200, which sum however will not put the buildings in efficient repair but will merely stop the leaks and support the portions most injured. Captain Hart did not recommend the expenditure of even this sum being of opinion that it was more urgently required for works of practical utility. In this Mr. Frere differs from Mr. Hart. He says that the ruin of buildings which are both larger and finer than anything to be found at Ahmedabad or Aurungabad and inferior only, if inferior, to the finest buildings at Delhi and Agra will be "certain, speedy, absolute, and irremediable." He therefore trusts that for the sake of art and for the character of the Government the amount applied for may be sanctioned. He further mentions that Captain Hart having had occasion to remove the library from the Assur Moobaruk the fragments of a black, letter quarto English Bible and a black letter Portuguese book were discovered, these give further evidence of the magnitude of a library which 200 years ago was thus not without specimens of the literature of foreign nations and creeds. The report concludes with a translation of a letter, from the last Mahomedan King of Beejapore to Aurungzebe, the date of which was some time previous to A. D. 1686.

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ASSESSMENT OF THE OMERKOTE DISTRICT.

Bombay Records, No. XL.—New Series.

Lieutenant Colonel John Jacob, c. b. in a letter to the Governor of Bombay dated the 11th June, 1856 remarks upon Lieut. Tyrwhitt's reports on the settlements effected by him in the Omerkote district. This district is divided into the lands lying contiguous to the Narra and to those bordering upon the tract of sand-hills. To the latter Lieut. Tyrwhitt's report is confined. Until two years ago all these lands were held in lease by the heads of the Soda tribe, and though the revenue collected by Government was but 6000 Rs., yet under this arrangement there was much oppression. In 1854-55 the fields were leased to a Syud for Rs. 12,500. In 1855-56 a light assessment was fixed which amounted to Rs. 24,000, or quadruple of that which was realised under the lease of the Sodas. Fields of from 1 to 10 beegas in extent pay 2 Rs. annually, those containing from 10—20 pay 3 Rs., those from 20 to 60 pay 5, whilst all above 60 pay 8 Rs. The average assessment is therefore 3 annas a beega. Cultivation under this light assessment has greatly increased. Lieutenant Tyrwhitt further states that many old pukka wells are being brought under repair. Many roads have been made. Of these a statement is annexed as also is a list of buildings constructed since the conquest. To the report are attached, a memorandum of Mr. Frere's regarding the assessment of the desert lands of Omerkote, a statement shewing the amount of land occupied free of assessment and a table exhibiting the annual revenue from 1843 to 1856. In 1843 it was Rs. 411-11-3 and in 1856 Rs. 20,663-10-6.* There is a further statement of the average size of all the fields of the Omerkote district from one beega and upwards.

REVENUE SETTLEMENT OF THE THURR DISTRICT.

Bombay Records, No. XL.—New Series.

On the 3rd June, 1856 the Acting Commissioner of Sind transmits to the Governor of Bombay letters from Lieutenant Shortt reporting the completion of the Revenue Settlement in the Thurr. The areas brought under survey and settlement consist of a light sandy soil, generally poor, and barely remu-

* Of this sum Rs. 5,133-8-11 form the revenue of Nubbesur, previously included in the Jooda Talooka.

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nerative. The cost of the survey has been Rs. 1308-7-6. The population is estimated at 29,700 of whom some 3000 are merchants, 3000 Mussulman shepherds and the remaining 23,700 are cultivators or herdsmen. As a whole the people are emphatically pastoral in their habits. The pasturage in the sand-hills is nutritious and the breed of cattle is fine. The assessment has been calculated upon the average price of the staple produce bajree—as this grain has been selling in the cheapest markets of the district. The capabilities of the soil do not vary so as to cause any great difference between the rates levied in any two localities. In no instance is the assessment higher than 8 annas a beega, whilst the average is 3 annas. The term of the settlement is 10 years. The financial result of the settlement is satisfactory. The statement appended to the report shows that the annual assessment now recommended will amount to Rs. 16,428-11-3. The largest revenue collected during the past ten years has been Rs. 10,527-4-11 thus shewing an increase of Rs. 5901-6-4 under the proposed settlement. This increase is owing to the extended cultivation and the abolition of customs and frontier dues. In a country so entirely dependent upon rain as the Thurr, the reporter suggests that "the cultivators should be relieved of the chance of the total failure of crops in years when no rain falls or so little as not to admit of the grain being sown." Out of 13 years from 1843 to 1856, 7 have been years of famine. The whole of the land under cultivation in the Thurr is about 46 square miles. The area of Thurr is 4,500 square miles. At present immense tracts of land are kept without cultivation and without water, merely from the opposition of the headmen of the villages whose chief and indeed sole wealth being cattle, they oppose any efforts towards cultivation. Lieutenant Shortt recommends that to each village a Patel should be appointed who should be paid by having a small portion of waste land rent free. Various statements are affixed to the report which have been summarized above.

THURR AND PARKUR DISTRICTS.

Bombay Records, No. XL.—New Series.

On the 21st January, 1856 the Commissioner of Sind forwards a report from Lieutenant Raikes on the Thurr and Parkur Districts to the Governor of Bombay. Mr. Frere remarks that these districts comprise an area of 6,100 square miles and a population of 44,000 souls which he esteems below the truth.

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Geographically they are nothing more than the Southern extremity of the Great Desert which from Ferozepore to the Runn of Kutch separates the Valley of the Indus from the rest of India.

The Thurr consists of a tract of sand-hills shaped like the waves of the sea. They are not composed of moving sand and have probably been thrown up by volcanic action. They are covered with coarse nutritious grass.

The Parkur district forms a sort of Peninsula, jutting out into the Runn. Here primitive rocks take the place of sand-hills and the level country differs but little from that of Northern Guzerat. The western portions of Thurr are inhabited by tribes cognate to those of Sind. In Parkur there are no rivers, the surface is however covered with tanks of which very few are now perfect. They however appear to have been in use until within the last century and a half. Probably the decline of the Mogul Empire led to the dissolution of social order in the distant dependencies of Thurr and Parkur.

On the conquest of Sind the principal men of these districts went in a body to Colonel Roberts, then Resident at Bhooj and begged that they might be under his jurisdiction. Their request was submitted to the Governor of Sind and as no more politic arrangement could have been made, it was granted. Colonel Roberts determined to raise from the Khosas a body of irregular horse, to provide means for the subsistence of the Soda Chiefs and to abolish the transit duties. On the departure of Colonel Roberts, Lieutenant Raikes under the title of Deputy Magistrate and Collector of Kutch, fulfilled the duties of an office entirely distinct from the Kutch Agency. For some years past the expenses of the Thurr and Parkur districts have exceeded the income. In 1848-49 the revenue was 23,277 and the expenses 43,728, in 1854-55 the revenue was 7,172 and the charges 35,392. As there was little prospect of increasing the income, a proposition was made to the Rao of Kutch to undertake the management of the districts. Mr. Frere, before the arrangement was carried into effect, in the cold weather of 1854-55 visited the Thurr. There the principal Chiefs and leading men expressed strongly their opinions against the measure. They said "'that the supposed wish of Government to get relieved from so unprofitable a possession was not unreasonable; that the Rao was an excellent ruler, and that they had great confidence in his governing them with justice,—but that he was mortal, and they had no guarantee for the character of his successor; that they had been now for some years under the British Government, in the enjoyment of a degree of peace and good government of which the memory of

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man in their remote corner of the world afforded no precedent,—person and property were more secure than in any of the provinces around, and this was particularly the case in comparison with the neighbouring States of Marwar or Kattywar; crime of any kind was rare, violent crime almost unknown;' and they always wound up with an urgent prayer that 'Government would leave them as they were under Lieutenan Raikes, and *not sell them* to any one, neither to the Rao of Kutch nor to their own Chiefs collectively, nor to any one of them.' On this latter point there seemed no difference of opinion between the Chiefs themselves and the lower orders. As Mr. Frere felt that the Government would not refuse their request, he, in conjunction with Lieutenant Raikes, considered what could be best done towards equalising the expenditure. The town duties, which had been relinquished soon after the conquest of Sind, could not again be imposed. Their abolition had been attended with the best effects. It has been reported more than once by the Deputy Collector "that in seasons which under the old system would have been years of famine, and when all the people would have quitted the country, they have left their familes behind, and fed them with imported grain, sent in from the neighbouring provinces, to which a few of the men drove their cattle, instead of the whole tribe being obliged to emigrate bodily, as would have been their only resource while the town duties acted as a heavy tax on importation."

The Mookyee Salt Lake was in former years a source of considerable revenue to the Chiefs. Mr. Frere accordingly proposes that the export of Salt from Mookyee be again allowed. Another method which Mr. Frere considers perfectly feasible is to "impose an excise on Ghee which is one of the few staples in Thurr."

The money derived from these sources may with a better management of the land revenue, equalise in some measure the receipts and the expenditure.

The collections on account of the land revenue during the ten years 1845—55 inclusive varied from Rs. 2,432 to Rs. 10,527 and averaged about 7,000 Rs. per annum. Nearly all the fields in Thurr have been registered and a cash assessment has been fixed at a moderate rate. Mr. Frere suggests that a sum of 500 Rs. per annum be devoted to the repair of the tanks, he is of opinion that much in this way might be done to improve the revenue. The district is far from being a useless possession.

1st. It is a great cattle breeding country.

2nd. It affords a route for merchandise between Mandavee and Marwar. Mr. Frere suggests that the Thurr and Parkur Dis-

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tricts be placed under a Political Agent and no longer be administered by an officer attached to another Agency. Mr. S. N. Raikes observes "that portion of the Thurr Dhat, or Little Desert, under my charge is a strip, as it were, lying on the northern side and along the Runn of Kutch." Along the edge of the Runn water may be obtained at the depth of one or two fathoms, in some places it is brackish but generally drinkable. The extremes of heat and cold are greater in Thurr than in Kutch, while the rainy seasons generaly correspond.

The chief towns in Thurr with thlir populations, are noted below :—

"Vecrawow, ..	1,537	Ballearee, ...	212
Mittee, ...	2,055	Peetapore, ...	458
Islamkote, ..	622	Guddra, ..	228
Deepla, ..	664		

The population of the Desert portion of the Deputy Collectorate is about 29,700, as before stated, of which 12,000 may be estimated as the number residing in the larger villages ; the remainder are scattered over the sand-hills in small hamlets or Thurrs, consisting of from five to fifty families."

About two-thirds of the inhabitants are Mussulmans, the remainder are Hindoos. In Parkur there are 26 villages and 10,700 inhabitants. Thus Lieutenant Raikes estimates the population at 40,400, whilst Mr. Frere states it at 44,000 which he considers "below the truth." Lieutenant Raikes after enumerating the relation of these districts to the Ameers of Sind at the conquest, proceeds to make the same suggestions as Mr. Frere. The appendix gives the present and proposed establishment for the Thurr and Parkur Districts. Lieutenant Colonel Jacob in a letter to the Secretary of the Government of Bombay, dated 28th June, 1856, states that the present method of governing these districts is most unsatisfactory. An officer is performing a work for which he receives nothing and which he can only do at the expense of the duties for which he is paid. Therefore in the spirit of Mr. Frere's report he suggests that a Political Superintendent should be appointed for the whole of the Western desert. The Hydrabad Collectorate might then dispense with an Assistant whose salary would partly cover the expense of the new office. In a further letter dated 10th July, 1856 he says that "the people of this district have the most strong and invincible objection to being transferred to the rule of Kutch." The Governor of Bombay in Council entirely concurs with all the suggestions of Mr. Frere with the exception of creating a Political Agent for Thurr and Parkur and is of opinion, that the officer in charge of these districts should be a first class Deputy

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Collector and that his salary should be in proportion to the revenue he may derive therefrom.

THE BIGAREE CANAL, UPPER SIND.

Bombay Records, No. XLII.—New Series.

On the 6th December, 1856, Lieutenant Colonel John Jacob, submits to the Bombay Government a report by Captain Merewether upon the enlargement of the Bigaree Canal. In 1851 this canal though one of the largest in Upper Sind was fast silting up. The supply of water brought down was barely adequate for the small amount of existing cultivation or for the supply of the villagers dependent upon it for their drinking water. For want of an adequate supply of fresh water the wells became sometimes as salt as brine. From this cause not only was there at times the greatest distress but hundreds of acres of most excellent land were lying waste. Lieutenant Colonel Jacob having brought to the notice of Mr. H. B. Frere the immense benefit which would accrue to all the country north of Shikarpore, if the Bigaree Canal were enlarged, his scheme was recommended to the Government by the Commissioner of Sind and their approval was obtained. The work may be considered under four different heads. The enlargement of the Bigaree and Noorwah at their mouths, the enlargement of the Noorwah, throughout, the clearing of the Boodwah from its mouth to Jacobabad and the enlargement of the tail of the Bigaree. The estimate for the first work was Rs. 1,30,094, for the second and third was Rs. 25,344 but an additional grant of Rs. 10,000 was obtained for extending the Bigaree ten miles further to the westward of Kouroja to where the Jacobabad and Larkhana road passed and the grant for the execution of the fourth was Rs. 30,000. The first three works were performed by contract, but the last work was undertaken by the Zemindars holding or wishing to hold lands on that part of the canal. An agreement was entered into and each Zemindar was to perform a certain portion of the work in proportion to the area of his holding which would be watered by the new canal. In May, 1855 the agreement was signed and the work commenced after the inundation. The work of excavation apportioned amongst the Zemindars was 2,61,69,920 cubic feet. It was no easy task which they had to perform. In one part, the soil was all loose fine sand, where the banks crumbled and often fell in as fast as they were made, and a dust storm

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nullified the works of days, by blowing the sand back into the hollow just dug. In another part, the soil would resemble rock, and it had to be loosened and taken out in blocks like stone. This was particularly the case in one spot part of the share allotted to a Belooch settler, Dad Mahomed Khan, Jukranee, nephew of the Chief of that tribe. In the year 1844 he had been a principal performer in the sack of Kumber, a village only fourteen miles from Larkhana. This man and his people pointed to the rock almost in despair. When the powra touched the ground, it recoiled as if from hard rock, yet with a little encouragement these men steadily persevered and ultimately finished their work. When the final inspection took place they pointed with just and honest pride to the success of their continued efforts and to the manner in which they had overcome the difficulty. From the enlargement of the tail of the Bigaree a fact of great importance has been learned and proved, viz. that without altering the capacity of the upper portion of a canal, merely having it clear and free of impediment, the capacity of the tail may be doubled without lowering the level of the water in any part one inch. Besides giving an abundant supply of water, this plan of canal cutting has the great advantage, by the increased rapidity of the stream, of preventing the deposit of silt in the channel; by causing it to be carried on and spread over the lands at the tail. The Bigaree now presents a channel 76 miles in length navigable throughout by the largest boats on the Indus. Recently, on the occasion of a present of artillery, arms and ammunition being sent by the British Government to the Khan of Khelat, these stores, instead of having to follow the old route from Sukkur via Jacobabad to Gundava, a journey of 120 miles, were conveyed by boats from Sukkur up the river to the mouth of the Bigaree and then were floated down to Khyra Ghuree. The astonishment of the people was very great and they flocked from all directions to see the fleet of sixteen boats in the heart of the desert, where boats had never been before. The advantages derived from so extensive an enlargement of the Bigaree Canal are of course numerous, but the principal one is the increase of revenue and consequent improvement in the condition of the people. In 1852 the gross revenue derived from both sides of the Bigaree and its branches was Rs. 65,000 the very next year when the works had been only partially completed it increased to Rs. 78,127. Last year the revenue amounted to Rs. 1,18,576 and in 1857-58 it is estimated that this will further be increased to upwards of a lakh and a half. Since 1852, nearly two lakhs of beegas have been given away in grants, under the terms of the new revenue settlement introduced in the frontier districts; that an annual

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tax of Re. 1-4-0 per beega should be levied on one-third of the land in possession. This tax is not levied at once. The Zemindar is allowed the first year free, the second year he pays 15 annas and afterward the full amount, thus he is enabled to dig new canals and clear the ground. Another great advantage is the increase of fresh water. In 1847 the well water in the camp at Khanghur was so intensely salt that the horses would not drink it, but now the water in the wells remains as sweet and pure as may be found in any well in the immediate vicinity of the Indus. A map of the Bigaree Canal and its sections before and after enlargement is appended.

In a letter dated the 21st April, 1851, Lieutenant Colonel John Jacob estimates that the increase of cultivation consequent upon the enlargement of the Bigaree Canal will be in a year or two 5000 beegas and the increase of revenue to His Highness Meer Ali Morad will be Rs. 30,000 and that to the British Government will be Rs. 89,000. In a further letter he observes "that certain Zemindars, subjects of the Khan of Khelat are with my permission, making Canals, from both the Bigaree and Noorwah, those from the former to supply the lands near Rojan and the others leading into the heart of the desert ten miles north of Jacobabad." One-half of the revenue of all lands so cultivated beyond the British boundary accrues to the Government.

On the 17th July, 1856 Captain W. L. Merewether transmits to Lieutenant Colonel H. B. Turner, the Superintending Engineer in Sind a proposition for enlarging and clearing the Meerzawah, a large offshoot from the Bigaree Canal. To ensure a full outturn for the annual Government expenditure, he recommends that the Canal be put into thorough order, the channel cleared, tanks sloped and the spoil banks thrown back some distance and estimates the expenditure for these works and for making a new mouth at Rs. 14,771-8-10. Lieutenant Colonel Turner conceives that a very large increase of water cannot be withdrawn from the Bigaree for the Meerzawah without reducing the volume of the water on the Bigaree below the junction and that the shifting of the mouth of the Meerzawah will still further affect the volume. Lieutenant Colonel Jacob however recommends the scheme and says, that the Bigaree is certainly able to supply the water and the increased drain from the main feeder will prove advantageous. Drawing off more water down the Canal is equivalent to increasing its fall and thus augments the velocity of the stream. He estimates that the proposed work would return 50 per cent. annually upon its cost. Major General C. Waddington, Chief Engineer of Public Works observes, that there can be no doubt as to the truth of the statement of Lieutenant Colonel John Jacob, that the increased drain from the main feeder, consequent

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on the clearance of the Meerzawah, will be equivalent to increasing its fall, but at the same time he considers, that the present channel of the Bigaree Canal will be insufficient to furnish a full supply both to the Meerzawah and to the lower part of its own channel. On the 2nd of September, 1856 the Government approve of the provision for the proposed cut being made in the general statement preparatory to the next budget, and, on the 6th December, 1856 pass a high encomium upon the merits of Captain Merewether and observe that the zeal and energy of Lieutenant Colonel Jacob appears to be participated in by all the young officers who have had the good fortune of being subjected to his instruction.

CASES INSTITUTED IN THE MADRAS COURT OF SMALL CAUSES.

For 1856.

On the 3rd February, Mr. R. Burgass, the 1st Judge of the Madras Court of Small Causes forwarded to the Secretary of the Government, Fort St. George the returns for 1855-56. The Court has now been in existence for a little more than six years and the report is for the sixth year of its establishment. The number of cases was 22,869 of which 19,340 were instituted by natives and the remainder by Englishmen. Thus the proportion which English suits bear to Native suits is as 1 to 5·480. Of the whole number of the suits instituted 15,455, *i. e.* more than half, did not involve property to a larger amount than 10 Rs. The Court set for 289 days and heard and decided in that time 21,985 cases. Of the remaining suits 46 were undecided at the end of the year and 9,164 were compromised. Judgment was given for the plaintiff in 10,582 cases and 1,155 were non-suited. In 1855, 25,171 cases were decided, thus 1856 shews a falling off of 3186 suits for which no reason is assigned in the report, an explanation has however lately been afforded which the Government have declared perfectly satisfactory. The amount of fees and costs was Rs. 52,812-1, the value of the property involved in the suits instituted was Rs. 3,29,043-13-6, the amount repaid to suitors on account of compromised cases was Rs. 9,140-2-6, and the total net amount of fees actually carried to the credit of Government was Rs. 43,671-14-6. The expenses of the Court were Rs. 75,294, thus the expenditure was Rs. 31,622-1-6 in excess of the receipts. In 1855 the fees realized

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and credited in the Cash Accounts amounted to Rs. 51,754- 12 therefore in that year the excess of expenditure over the receipts was considerably lower.

CASES INSTITUTED IN THE SUPREME COURT SMALL CAUSE SIDE.

For 1856.

On the 23d January, 1857 Mr. William A. Serle transmits for the information of Government the returns of cases instituted in the Supreme Court Small Cause Side. In all there were 442 suits so instituted of which 90 involved a value of less than 100 Rs. 196 a value of more than 100 Rs. but less than 200 Rs. and 42 a value of more than 400 Rs. but less than 500 Rs. The judgments in 204 suits were for the plaintiffs, 43 were non-suited, 147 were compromised, 19 remained undecided and 5 were struck out. The maximum value litigated for in any one suit during 1856 was Rs. 500, the minimum Rs. 100 and the average value Rs. 202-13-7. The whole expenditure was Rs. 11,794-14, the net receipts were 12,783-2.

REVISION OF THE CHOWKEEDAREE ASSESSMENT, ZILLAH BAREILLY.

N. W. P. Records, No. XXIX.

Mr. Horne on the 28th January, 1846 reported the completion of the revision of the Chowkeedaree tax. In order that the nature of the revision, may be clearly understood, he gives a short resumé of what "had been done previously in this field." When the tax was first introduced a serious riot occurred but order having been enforced "the people seeing that the tax was for their good submitted." In 1844 Mr. Clarke appointed a Sudder punchayet, who increased the amount of the assessment 25 Rs. per cent. The great objection to Mr. Clarke's method was, that the Sudder punchayets usurped the functions of the Magistrate. This it has been Mr. Horne's chief endeavour to remedy. After the revision by Mr. Clarke the tax which had stood at Rs. 945-1-6 reached Rs. 1321-5-6 and the number of houses was

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15,517. In 1815 however though the number of houses borne upon the register had reached 21,646, yet the amount of the tax had fallen off to Rs. 1,101-5-9. Nothing could prove more fully than this that the system was at fault, accordingly a revision was made and the result has been that the number of houses on the new register is 28,537 and the tax has nearly reached Rs. 2,000. The first point which strikes attention in the tabulated statements, which accompany the report, is the number of fresh discovered houses amounting in all to 6,591. This was owing to the fact that the punchayet always formed reserves, so that when any one favoured by them petitioned the Magistrate for a diminution in his rate of assessment, and the petition was referred to the punchayet, they reported accordingly and gave in the names of one or more of the reserves as able to pay the remitted tax. Thus no increase to the tax occurred and the amount fell off by deaths and removals. The revision of the assessment was carried out in the following manner. First a fair copy in Oordoo and English was separately prepared of the register of the first 13 gushts or divisions of the city. This done, Mr. Horne, having called together the residents of the Mohullah by beat of drum, proceeded to test the number of the houses on the register with the actual tickets which each resident, according to the order of Mr. Williams, was obliged to bear upon his house. Objections were then proposed against the assessment and were heard by the punchayet under the sanction of Mr. Horne. The revised Oordoo copy of the register was afterwards posted in the most central spot of the city and an officer was appointed to shew every one their particular assessment. Mr. Horne's rates differ but little from those prepared by Mr. Clarke in 1844 who assessed

Malgoozars at the rate of ¼ per cent. on a Jumma of Rs. 500, exceeding that sum at	One anna per cent.
Persons receiving monthly salaries at	One rupee per cent.
Dealers in Sugar, Europe goods, Bankers, &c. on each house from	One to two rupees.
Punsarees, Dealers in brass, iron-ware, each house from	4 to 8 annas per cent.
Dealers in Cloth, Shoes, Taulivallahs, Lohars, Carpenters, &c. each house, from	2 to 6 annas per cent.
Workmen, ...	One anna.

N. B.—The tax is in no instance to exceed two rupees.

The chief difference in the present rates is, that workmen are entirely exempted, gold and silver wire drawers are taxed at one anna per wheel instead of four annas and the rates upon prostitutes, shroffs, Government employees, brahmins, fuqueers, &c. have been enhanced. Up to the date of the 1st report 31 petitions against the assessment have been made to the Com-

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missioner. In two of these there had been mistakes, in three the appellants had made false statements and the remainder were men of large incomes. Mr. Horne does not consider that the tax weighs heavily upon the mass of the people, there are 28,537 houses and the present assessment only reaches Rs. 2000 which is less than two annas a house, or if the population of Bareilly which is estimated at 1,32,401 persons be considered, 2000 Rs. per annum is not a large sum. The report then proceeds to explain how the Chowkedaree tax is to be expended. In July, 1855 the cost of the establishment was Rs. 1000, but only the dregs of the population would serve as Chowkeedars at 3 Rs. a month, so Mr. Horne recommends that their pay be increased to 4 Rs. a month, this will entail an additional expense of 560 Rs. Mr. Horne further proposes that the collecting establishment be increased, that the duties of Policemen, Jemadars, and Collectors of Tax be separated and that these should receive emoluments in proportion to the extent of their division and responsibility of their office. These reforms entail an additional outlay of 157 Rs. Thus there will be a balance of 283 Rs. for local improvements. Mr. Horne observes that it would be very desirable, did the funds admit of it, that there should be 100 more Chowkeedars and the report concludes with some minor suggestions. The appendices have been summarized above. Mr. Alexander, the Commissioner of Rohilcund in transmitting Mr. Horne's report to Government observes, that the Chowkedaree tax has ever been unpopular with the native population and he very much doubts that the people "see that the tax is for their own good." He designates Mr. Horne's proceedings as useful, systematic and laborious. The Lieutenant Governor of the North West Provinces considers, that Mr. Horne's measures have been conducted with great judgment, moderation and fairness and that they deserve the approval of superior authority. Mr. C. Horne in a letter dated September 27th, 1856 supplies certain omissions in his report and observes that the revision has stood very fairly and "increased efficiency in the Police force has resulted."

SUICIDE IN BUNDELCUND.

N. W. P. Records, No. XXIX.

On the 3d of March, 1856, Dr. Clarke proceeded into the Bundelcund district but owing to the extreme heat, he was compelled to return after a tour of 17 days. In so short a time Dr.

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Clarke was unable personally to enquire into the sanitary condition of the people or to see any of those diseases said to be common to the people of Bundelcund. But, by examining the Police records from 1851 to 1855 he has been enabled to tabulate the diseases. He moreover held frequent conversations with the "baids" and endeavoured to elicit from them the native symptoms of the diseases known under the popular terms of "*baee gola*" and "*baee soolh*" which are assumed to be peculiar to Bundelcund and are so violent in their nature as to urge those attacked to self-destruction. Dr. Clarke considers that the "*baee gola*" and "*baee soolh*" are often nothing else but severe attacks of colic and he does not regard them "as either specific or as peculiar to Bundelcund." During 5 years from 1851 to 1855, 161 persons are reported to have committed suicide of whom 33 were males and 128 females. In 1150 of these cases physical causes and in 46 of them moral causes led to self destruction. Suicide prevails most in Punwaree pergunnah, where apparently the people are poorer and are compelled to live on food which generates abdominal disease. The police records do not afford sufficient data to judge of the effects of the seasons in developing suicidal tendencies. It is remarkable that more persons between the ages of 20 and 30, both male and female, have committed suicide, than at any other period of life. Dr. Clarke expresses his belief that though physical and moral causes may be regarded as incitements, yet they in no wise explain the *proneness* to suicide. He affirms that as a hereditary taint is passed on from parent to child, so is this peculiar habit of self destruction. The habit will continue to develop itself until some stringent and effective means are used to root it out which might be more readily discovered if every thannadar were furnished with a medical form at every inquest. Mr. C. Chester in forwarding Dr. Clarke's report to the Government of the N. W. Provinces thinks, that a want of moral sense and an ignorance of responsibility are the remote causes for so many suicides, and knows of no remedy but education. The proximate cause is apparently sickness, on which account he recommends the establishment of dispensaries.

To Dr. Clarke's report are appended certain remarks by Mr. F. O. Mayne and Mr. G. H. Freeling upon the same subject, but no new facts are elicited. Both of these gentlemen think that to punish self murderers for unsuccessful attempts at crime would be useless and that to cure their disease, their mental capacity and means of subsistence must be improved. The Lieutenant Governor in an answer to the reports of Messrs. Mayne and Freeling considers, that every case of suicide and its concurrent circumstances should be noted by every Tehsildar and that penal infliction should be reserved for cases of hardened feeling. He

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further recommends the establishment of dispensaries, and notices that the lightest assessed pergunnahs shew the greatest number of suicides.

MEMORANDUM REGARDING TALOOKA KOTE.

N. W. P. Records, No. XXIX.

Talooka Kote in Pergunnah Ekdilla, Zillah Futtehpore, consists of 16 Mouzahs assessed at Rs. 18,805.

The tenure is extremely intricate and perplexing and to such an extent have lands become subdivided, that some of the proprietors are responsible for an assessment of only a pie or a fraction of a pie. The most embarrassing of all the Mouzahs is Kote Khas where a field is shared amongst some 20 proprietors. Sales and mortgages consequently create much perplexity and perhaps half a dozen proprietors will unite together to purchase another proprietor's share or half of it. Each pays what he can and each becomes a sharer in the *proportion of his payment*. The collections of this Talooka have always been effected with great trouble. Formerly at the time of the collection each sharer before the new settlement gave to the Jumokdar, his Jumoke of the amount for which he was responsible, which would be composed of a large number of items of shares or parts of shares in all or nearly all the villages of the Talooka. The account of each proprietor had then to be adjusted for shares mortgaged or held in mortgage. The settlement did not mend matters. The attempt to enforce Mouzahwar collections entirely failed and the old Jumoke system remained. The whole Talooka contained in effect one village and it was impossible to say that any single Mouzah was in balance or solvent. Now, a record of holdings and the distributions of proprietary right in them have been made in fourteen out of the sixteen villages and the late Rubbee was collected in other villages. The Jumoke system is confined to only Kote Khas assessed at Rs. 4,514 and Khurkhur assessed at Rs. 786. For the latter after innumerable difficulties the Khewut is being prepared and for the former a record of possession is being drawn up. The Jumoke system will soon be entirely abolished.

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SUSPENSION BRIDGES IN THE NORTH WEST PROVINCES.

N. W. P. Records, No. XXIX.

COLONEL J. T. Boileau observes that the great desideratum in Suspension Bridges is the substitution of a road-way of more durable materials than those now in use, which consist for the most part of beams of wood, crossed by planks and metalled. Bar chain Suspension Bridges should be employed rather than wire cable especially in the hills. The total amount expended in the annual repairs of the Suspension Bridges in the North West Provinces has been Rs. 11,542-8-10 of which nearly a third was expended on the road-way. The sum expended for renewals and extensive repairs is Rs. 43,356-7-1 and for petty repairs Rs. 2,102-10-2. Thus there has been a total expenditure of Rs. 5,77,001-10-1 and as the total cost of construction was Rs. 1,88,405-5-11 the total expenditure is rather more than 305 per cent. upon the cost of the construction. The statements contain the details of the expenditure, cost and the time of building of every Suspension Bridge in existence in 1855, in the N. W. Provinces.

COMMERCE AND SHIPPING OF THE PORT OF RANGOON.

All imports into Rangoon pay duty at Rangoon, excepting goods for the use of the Company's or Her Majesty's forces and those which have already paid duty at one of the Indian ports or are for re-exportation.

The value of the imports from foreign ports and ports not subject to the Bengal Presidency was in the official year 1856-57 Rs. 26,86,576-5-2. The value of the goods which paid duty at Rangoon was Rs. 20,64,701-15-1. The duty amounted

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to Rs. 1,10,108-6-7½.

United Kingdom.		Straits of Malacca.		Nicobar.		Mauritius.		Ceylon.		Coast of Africa.		Antwerp.		Bremen.		Holland.	
Rs.	A. P.	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.
15,21,759	15 1	4,80,101	5 4	28,057	8 9	300	0 0	2,156	11 2	982	12 9	6000	0 0	16,505	6 0	8,838	4 0

The chief imports are cotton goods, spices, spirits, manufactured metals and iron. The value of the cotton goods imported was Rs. 12,51,558-7 10 and the amount of duty levied was Rs. 58,059-2-10¼.

The value of the Free imports by Sea into the Port of Rangoon was Rs. 6,21,874-6-1 of which there was treasure to the amount of Rs. 1,11,343.

The imports are from the United Kingdom, Straits of Malacca, Nicobar, Mauritius, Ceylon, Madras, the Coast of Africa, Antwerp, Bremen and Holland.

The accompanying table shews the relative value of the dutiable imports from each of the above places for the official year Rs. 1855-56

The export trade of Rangoon may be considered under two heads first those exports which pay duty and second those exports which are free or which are imports re-exported. The statement of the export trade of Rangoon does not include the ports subject to the Bengal Presidency.

The total value of the exports was Rs. 19,30,059-0-3. The duty levied amounted to Rs. 46,490-0-11¾. The principal exports are Rice, Cutch, and Lead. The value of the Rice exported was Rs. 17,98,322-7-4 and the duty paid at the rate of one anna per bag of two maunds was Rs. 42,514-0-10½. The value of the Cutch exported was Rs. 66,000-0-11 and of the lead Rs. 13,206-11-11. Upon each of which a duty of 3 per cent. was levied.

The value of the free exports to foreign ports and to ports not subject to the Bengal Presidency was Rs. 1,85,013. The most noticeable exports under this head are Cutch and Timber, the value exported of the former was Rs. 18,997 and of the latter Rs. 34,510-2-11. The Cutch had paid "Frontier Duty."

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United Kingdom.			Straits of Malacca.			Hongkong.			France.			Antwerp.			Rotterdam.			Nicobar.		
Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
11,05,589	1	8	4,06,643	10	2	63,172	8	0	34,013	7	2	1,79,776	15	3	1,35,671	6	0	192	0	0

The amount of specie exported was Rs. 1,06,696-4 of which 81,000 Rs. went to the Straits of Malacca, the remaining sum Rs. 25,696-4-0 was sent to Madras. The value of the goods re-exported to Ports not subject to the Bengal Presidency was Rupees 2,2360-4-2.

The statement appended shews the value of the exports received by all foreign and Indian ports not subject to the Bengal Presidency.

The total number of the ships that arrived at the Port of Rangoon from ports not subject to the Bengal Presidency was for the year 1855 56, 165 possessing altogether a tonnage of 67,263 tons. Of this number 16 were native craft affording a tonnage of 1526 tons and 35 were for Home Ports having a capacity for tons 21,269½. The number of ships under British Colours was 91 and their amount of tonnage 34,425 tons and the number of steamers was 11 with a total capacity of 6,10,842 tons.

The total number of square rigged vessels which departed during the year was 151 and their tonnage was 54,405 tons. Of this number 7 steamers of 6,348 tons and 82 ships of 25,944 tons were under British Colours, 18 were native craft and 44 were from various foreign ports.

COMMERCE AND SHIPPING OF THE PORT OF BASSEIN.

In the official year 1855-56 the total value of the dutiable imports into the port of Bassein was Rs. 34,020-15-2 and the gross amount of duty levied was Rs. 1770-1-9½. The chief imports were betel-nuts and tobacco, but they were numerous rather than large. During the same year Rs. 2,08,986-5-0

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was the value of the goods imported for re-exportation or for the use of Her Majesty's forces and therefore paying no duty; out of this sum however, there was treasure to the amount of Rs. 62,924-8.

The exports by sea for 1855-56, which paid duty, were of the value of Rs. 3,91,209-9-6 and the value of the free exports by sea was Rs. 1,34,240-6-4 including treasure to the amount of Rs. 5800.

The chief export is rice, of which grain Qrs. 11,66,949-2-4 valued at Rs. 3,87,915-1-4 were exported. The duty levied was 1 anna per bag of 2 maunds and the gross amount realised was Rs. 12,539-13-3. The value of the rice exported duty free was Rs. 70,172-7-4. By far the greatest portion of the rice was sent to the United Kingdom and to the Straits Settlements. The amount exported to the United Kingdom was Qrs. 9,42,217 valued at Rs. 3,00,545-0-8, that sent to the Straits Settlements was Qrs. 2,24,132-2-4 valued at Rs. 86,767-7-8. Goods are chiefly imported from the United Kingdom, Arracan, Straits Settlements, Nicobar, Rangoon, Moulmein, Fort St. George and Coringa.

The value of the imports from foreign ports and from ports not subject to the Bengal presidency for the official year 1855-56 is denoted by the following table :—

United Kingdom.			Arracan.			Straits Settlements.			Nicobar.		
Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
6,592	0	0	16,986	4	0	9,962	11	2	480	0	0

The United Kingdom, Arracan, Straits Settlements, Fort St. George, Nicobar, Rangoon, Moulmein enjoy the export trade. The value of the dutiable exports to the above places, for the official year 1856-57, is shewn by the accompanying table :—

United Kingdom.			Arracan.			Straits Settlements.			Nicobar.			Fort St. George.		
Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
3,01,299	1	10	1,505	0	0	37,305	7	3	100	0	0	1,000	0	0

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During the course of the year 76 square rigged vessels arrived. Their gross amount of tonnage was 19,482½ tons.

The departures during the same time were 80 square rigged vessels with a tonnage of 16,727 tons.

CENTRAL AND LOCAL MUSEUMS IN THE MADRAS PRESIDENCY.

Madras Records, No. XXXIX.

Surgeon Edward Balfour, the officer in charge of the Government Central Museum at Madras reports that the increasing popularity of the Museum is shewn from the increased number of visitors. The number of visitors during the year ending 31st June, 1856 was 3,68,873, two-thirds of the visitors to the London Zoological Gardens in 1854 and more than those to Kew Gardens or the British Museum in 1855. The expenditure for 1856-57 was Rs. 10,000, which gives only three pice for each visitor. The great change during the past year has been the formation of Zoological Gardens, there are now 360 animals out of 812 which have been purchased. Catalogues of the minerals, in illustration of systematic mineralogy, have been printed, as also has the catalogue of the Molluscous Animals in the Museum, now embracing 2,378 species and varieties. The catalogue of all the geological specimens has likewise been completed. In obedience to the orders of the Court of Directors the lime-stones in the Madras territories have been examined and Mr. Balfour is of opinion that the whole of the compact magnesian lime-stones which occur in the water shed of the Kistnah river and its tributaries are suitable for lithographic purposes. These stones are capable of being delivered in Madras at a twentieth part of the price of the German ones, the importation of which should therefore be discontinued.

No Museum had in June, 1856 been established in Bellary, but a Committee has been formed and there is a reasonable hope that there will be one before the close of 1857. At Coimbatore, the want of a suitable building at first delayed the commencement of the Museum and the Committee are now of opinion that it will be better to assist that at Ootacamund than establish a fresh one at Coimbatore.

At Cuddalore, a Museum has been established, but in 1856 there were only a few specimens and these of but little interest. There is, however, a well arranged series of characteristic rocks

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presented by Dr. Burrell. The Museum was opened in February, 1856 in which month there were no less than 6827 visitors, in June there were but 369. The expenses for the year amounted to Rs. 546-15-8 and the Government allowance was Rs. 818-3-5. A house is being prepared for the Museum at Mangalore, 340 specimens of stuffed birds from Malabar and 130 shells from Ceylon have already been presented. Two cases of Mineralogical and Geological specimens have likewise been forwarded to the Museum, but at the time of the report had not been received. The expenditure during the half year ending 30th June, 1856 was 805 Rs.

The Ootacamund Museum was opened on the 19th May, 1856 in which month there were 197 visitors and in June 270. There is already a considerable collection of minerals, shells and woods besides various stuffed birds and animals. The Rajahmundry Museum was opened in a shed erected at a cost of 157 Rs. on the 7th June, 1856. The cost of a building suitable for a Museum is estimated at 4000 Rs., the Committee have raised for this purpose 1,000 Rs. and have asked from Government a grant for the remainder. The amount expended in 1855 was Rs. 632-13-7 and the sum received from Government and from private subscription was Rs. 1218-11-5. From the 1st January, to the 30th June, 1856 the expenditure was Rs. 225-2-4 and the receipts were Rs. 375-4 of which 275 Rs. were received from Government.

At Saugor on the 28th of July, 1856 no Museum had been established but a prospectus had been issued requesting subscriptions. The country is well adapted for geological and mineralogical research.

THE GUTTA PERCHA OF SOUTHERN INDIA.

Madras Records, No. XXXIX.

According to Dr. Montgomerie, the word Gutta Percha is pure Malayan, gutta meaning the concrete juice of a plant and percha the name of the tree from which the juice in question is obtained. The tree which yields gutta percha is a native of the shores of Malacca, where the natives construct whips, buckets and vessels of various kinds out of the hardened juice. The first person who noticed the native use of this substance was Dr. Montgomerie in 1842. The tree which produces this substance is from 40 to 60 feet high and three or four feet in diameter. Its foliage is of a pale green colour on the upper side and covered with reddish brown hairs beneath. The tree flourishes luxuri-

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antly in alluvial tracts at the foot of hills. It is found in the Travancore forests under the name of Pauchontee and in the forest tracts of Cochin it is called Pauly and on the cardamom table land Thempullay. The native method of procuring the juice is most destructive. They fell the tree and then make rings in the bark at distances of 10 or 12 inches, under each they place a cocoanut shell as the receptacle for the milky sap, which begins to flow instantly. The sap is collected in bamboos and boiled in order to drive off the watery particles. At Singapore, where the tree was formerly abundant, only a few small plants are to be found. Dr. Oxley estimates the produce of one tree at from 5 to 20 catties so that taking the average of 10 catties, it will require the destruction of 10 trees to produce one picul. Now from 1st January, 1845 to July, 1847, 6918 piculs were exported from Singapore, consequently 69,180 trees must have been destroyed. Gutta Percha is the best and easiest application for the management of fractures and from its great strength is peculiarly adopted for water conveyance. It has been found to possess "high insulating power" and is thus useful in electrical experiments but perhaps the most ingenious adaptation of the substance is to making stereotype plates. "A mould is taken by pressure, of a page of type in Gutta Percha, from this mould a cast is obtained on a cylinder of Gutta Percha and from this last the printing is carried on. The cylinder and mould are both made in about an hour." The other uses of gutta percha are too numerous to be mentioned here.

MATERIALS OF THE MADRAS PRESIDENCY FOR GRIND-STONES.

Madras Records, No. XXXIX.

On the 24th May, 1856, Mr. Balfour submits to Government the results of his investigations as to the materials useful for grinding and polishing mineral or metallic substances which are to be found in the Madras territories. From North Arcot 5 specimens have been received into the Central Museum and judging from the extensive "tracts of fossiliferous rocks met with in South Arcot, this district will probably be found capable of furnishing from its sand-stone and schistose strata, materials suitable for grind-stones and hones." In the Bellary District there are lime-stone, clay "and chlorite slates, and sand-stone strata of the Palæozoic period, with solitary hills of granite rocks rising abruptly from the level

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country, and dykes of green-stone traversing the whole in an easterly and westerly direction." Nearly the whole of Cuddapah "consists of Palæozoic rocks, clay-slates, &c. the prevailing colour of which is blue; lime-stones compact and granular, and sand-stones capping the highest hills. There are very few specimens of these rocks in the Museum, but it may be stated, generally, that hone-stones may be had almost throughout this large district." The greater portion of Chingleput consists of Plutonic rocks and one or two specimens of rock suitable for grinding purposes have been found and lodged in the Central Museum. Ganjam and Hydrabad specimens have also been obtained and the Guntoor district consists of sedimentary rocks, lime-stones, clay-slates and sand-stones; "many of the lime-stones are compact, some of them ornamental and fit to be used as marbles; some promise to answer as hone-stones, and some as lithographic stones." The prevailing rocks in Kurnool are compact lime-stones, sand-stones and clay-stones. The whole country could furnish slabs more or less suitable for hone-stones.

The hand specimens of sand-stones from Madura, now in the Museum, are all too small to allow of decided opinion as to their properties, but there are some rocks which merit attention. Mysore, Nellore, Rajahmundry and the Saugor and Nerbudda territories all furnish materials both for grind-stones and whet-stones. Mr. Balfour observes with regard to the Malayan Peninsula that it may be safely predicated that many sand-stones will be discovered therein suitable for grind-stones, and that one specimen has been received from Singapore. The Corundums of the Madras Presidency are not unworthy of notice. Their applications as grinding and polishing materials are well known to the natives, who use them in mass or mixed in lac. The origin of the word "corundum" is unknown. Sapphire, corundum and emery are only surpassed in hardness by the diamond and the only difference between the two latter seems to be that corundum contains no oxide of iron. The selling price of emery in London is from £10 to £15 a ton, and corundum is bought by Arab merchants at Mangalore and Tellicherry, at from £4 to £12 a ton, according to its quality. Corundum is found in Salem, North Arcot, Mysore and Travancore. In Southern India garnets, only one variety of which is valuable as a gem, are almost universally employed by the cutler, they are however very inferior to the corundum in hardness. Garnets are very common in the Southern parts of India and in the Hydrabad dominions at Gharliput, a mine of precious garnet occurs. The precious garnets are found at the depth of from 8 to 10 feet and when collected are gently pounded, those that break are thrown aside as worthless whilst those that survive the blows are rec-

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koned of good quality. There is an appendix to the report on "abrasive and grinding materials" being extracts from Holtzapffel, Volume III. Lieutenant Newbold, F. R. S. reports upon the mines of corundum at Kulkairi and Golhushully. The mines lie about forty-five miles north-west of Seringapatam, those at Kulkairi are a series of excavations varying from two to twelve feet in depth. The corundum is thrown out, cleared and separated by the miners into four classes, namely, the red, the white, the scraps of both and the refuse. The first three form the article of commerce which is carried to Mangalore and Tellicherry. In 1842 the sum paid for working the mines was 530 Canteray pagodas for 2 years. Fine rubies have from time to time been discovered in many of the corundum localities. Lieutenant Newbold observes, that green garnet is of very rare occurrence and that the only locality on which he ever discovered it, was in the Salem district at Sankerydroog. Mr. Balfour having been requested by the late Military Board to furnish information regarding the grind-stones and hone-stones of Southern India adds to his report selections from various books in the belief that it may be of some value to collect together all that is known concerning these implements and the modes of preparing and using them.

MEMOIR ON THE AMRAWUTTI SCULPTURES.

Madras Records, No. XXXIX.

In the year 1801 and in the course of his duties as Surveyor General, Colonel Mackenzie heard of Sculptures in the neighbourhood of Ongol, with an intimation that they were *Jaina* in kind. These antiquities were at Amresvaram, which place he accordingly determined to inspect. Colonel Mackenzie discovered several sculptured slabs and published an account of his proceedings. Many of these marbles were brought down from Amrawutti in the Guntoor Collectorate to Madras by the Honorable Mr. Elliot and at the time that this report was written were lying in the Central Museum—exposed to the forenoon sun. Many of these marbles are of great beauty and some contain inscriptions of which a facsimile was published in the Journal of the Asiatic Society of Bengal. The report here proceeds to describe the designs upon the Sculptures brought to Madras by Mr. Elliot of which there are 90. Other Sculptures have been brought from Masulipatam and are fully described. The Rev. W. Taylor in

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his report upon the marbles appears to consider that the Pali of Ceylon should be taken as the basis for the interpretation of the inscriptions upon the Sculptures. In his opinion "Amrawutti" means "pagus immortalis." The site of the town is on the river Krishna N.N.W. from Guntoor and not in the Berar province as is stated in the Asiatic Society's Journal, Vol. VI. No. 63. Some of the Sculptures may be safely dated as posterior to Krishna Raja's conquest of Kondavida and Cuttack in A. D. 1514-15. Only one tablet appears to bear a date and the power of the two letters used is not known. When the Sculpture is coarse the date is probably about A. D. 1,000. There is nothing to shew that the Amrawutti principality was earlier than the rise of the power at Warankal and that seems not to have been earlier than about A. D. 800.

All *Jaina* books are stated to have been destroyed when the people were massacred, with the one exception of the Amaracosha, a lexicon of Sanscrit, still in popular use. The Tamil *Nigandu* is another exception and at Madura the *Naladiyar*, an ethic composition was spared when other Bauddha books were burnt. It is therefore in vain to seek elsewhere than among the temples and hierophants to find any remains of the Jainas, of the people who built Amrawutti. There seems to be but little reason to doubt but that they were some how or other more closely identified with the Greeks than with the Hindus. Their Sculptures were Grecian in type, and their inscriptions bear both Greek and Amrawutti letters. Besides the religions of the Greeks and Jainas were fitted to harmonise. In deifying men both agree, only the Greeks beatify warriors and the Jainas beatify *monachs*. The Greeks would seem to have "descendants still in India, known as *Lebbis* or *Jonacas;* who though Mussulman use the strictly vernacular languages. The terms *Jonaca* and *Yavana* are from a common derivation, as *Yavana* is derivable from *Ionia;* and the *Ionians*, the oldest of the Greeks, evinced by their name, their connexion with the farther east and their having been on one side of an early and great schism, which has left ramifications down to our day; and in which *Bauddhas* and *Jainas* bore their part. The *Saivas* held to the opposite side and were the adversaries, and in various instances, the exterminators of the *Jainas*." However, whatever may have been the doctrine or practice of the Jainas whether they worshipped women or snakes, the nine planets or the five elements deified, it is impossible not to pity their fate. "The Bartholemew tocsin, it would seem, was first sounded at *Kalyana* of the western *Chalukyas*, when the two Basavas, after founding a strange caricature of the *Saiva* system, proceeded to urge their

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followers to exterminate the opposite system of the *Jainas:* king and people there falling victims to fanatic rage. Next following appear to have been the affairs at Warankal and Orissa. About that period an agent from the north, known in the South by the name of *Sampantar*, went to Madura, caused *Kuna Pandiyan* to become a *Saiva*, and to exterminate the *Bauddhas* destroying their books, one only excepted. About the same time occurred the massacres of *Jainas* in the *Tondamandalam* under *Adonda*, and later rulers. Here, the crushing in oil-mills was the ordinary mode. *Appar* was a *Jaina* and a Tamil poet. He turned *Saiva* and went about, with others, singing chants in honor of distinguished fanes. He relented; and went back to his early credence; and was crushed to death in an oil-mill. Last in order came the tragedy under *Pratapa Rudra* in the immediate neighbourhood of *Amravati*. The phrases "mild Hindus" and "tolerant Brahmans" were coined by individuals, who only saw sycophants crouching before conquerors, and fawning where they dared not to bite. But the history, at least of the Peninsula, as far as it has been developed, sternly rejects such terms; especially as regards *Saivas* and ultra *Saivas;* numbering these last among the fiercest of fanatics, as relentless persecutors, and the most violent in the work of human destruction." There is an appendix attached to the report containing various extracts upon the Bactrian kings and the traces of their power in India.

THE MADRAS RAILWAY FOR 1855.

Madras Records, No. XL.

THE first sod was cut on the 9th June, 1853 and the whole of the line from Madras to the western coast has been divided into 17 compartments. The report opens with an extract from the minutes of consultation dated the 10th July, 1856. It is there said "although the expectations formed in regard to the rapid progress of the line have not been realized to their full extent, the Government cannot but regard the results of the past year as on the whole satisfactory. At the beginning of the year the Company was authorized to commence work upon 70 miles, and at the close of the year operations were extended to 169 miles; the average amount of earthwork done during each month of the year was 2,84,509 cubic yards, and of masonry 4,440 cubic yards." The rules providing for the protection of the Ryots and for facilitating the transfer of land have worked

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well, but the reluctance of contractors to come forward for the supply of sleepers is still a subject of anxiety. "There have been, however, 1,07,977 sleepers supplied during the year against 38,475 of the previous year, at an aggregate cost of Rs. 3,35,785, being at the rate of Rs. 3-1-9 the sleeper." The supply of stores from England has been very large, their value being estimated at 28½ lakhs of rupees, amongst them were "8 Locomotive Engines, 53,000 lengths of rail and 1¼ lac of Chairs the two latter Articles weighing in the aggregate nearly 13,000 tons. The progress made in the first Division has not been so rapid as there was reason to expect it might have been. This is attributed, and with truth, to extensive works having been undertaken by Government in the District of North Arcot which naturally reduced the supply of labour. The Government learn with satisfaction, however, that in all ordinary cases Railway works in this part of India may be completed within two years from their actual commencement." The Consulting Engineer in a letter dated 19th June, 1856 observes that the proceedings "of the Government Railway Department have, with one exception been confined to the supervision of the proceedings of the Madras Railway Company." At the close of 1854, 13 Engineers were employed by the Railway Company and in 1856 their number was increased to 17. The sanctioned expenditure in the Engineer's Department, exclusive of establishments amounted to Rs. 10,43,312-6-6 whilst the pay of the Engineer's Establishment was Rs. 2,35,336-15-6. The cost of superintendence has been to the expenditure as 1 to 4. The cost at which the several descriptions of work have been executed during the year under review was satisfactory, but the progress of the work from Coimbatore to Beypore was not very great. The Railway authorities have during 1855 continued the practice adopted from the commencement of executing the works by their own servants, the native contractors being men with little capital and no enterprise. The District Engineers are of opinion that so long as they have recourse to day labour and arrange for the regular payment of wages the work will prosper and there will be no deficiency of labour. The Locomotive Department organized at the beginning of 1855 has progressed satisfactorily and there are now a "good set of native smiths" who work after the English manner with English tools. The work turned out by native artisans is exceedingly good. Better work could scarcely be done any where and though the workmen are slow yet they improve greatly as they become better acquainted with the nature of their work.

The receipts and expenditure of the Madras Railway in India are shewn by the accompanying table :—

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Statement showing the Receipts and Expenditure in India from the commencement sanctioned up to the 31st December, 1855.

Madras Railway.		Total Expenditure up to 31st December, 1855.			Total Receipts.		
Agency and Management,	Salaries, ...	98,344	8	6	98,344	8	6
	Contingencies, ...	1,04,133	13	0	1,23,068	15	8
	Stores, ...	3,26,379	9	5	3,10,000	....	.....
	Sleepers, ...	4,65,437	15	5	4,90,000	.....	.....
Locomotive, ...	Salaries, ...	29,394	15	11	29,394	15	11
	Contingencies, ...	1,128	3	6	.....	....	....
	Construction R. S.	20,280	8	11	45,000	....	.....
Engineer, ...	See Statements, ...	21,35,874	5	7	23,37,126	10	11
	Total, ..	31,80,974	....	3	34,32,935	3	.....
	Balance, ...	2,51,961	2	9			
	Total, ..	34,32,935	3	0			

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On the 20th of December, 1854, Mr. Smalley delivered over the charge of his office as Agent to Major Jenkins and before doing so he submitted a statement of expenditure and work performed and stated that his object as Agent in India has been to furnish the Board with regular reports and that he has without one intermission transmitted an account of his proceedings twice every month. The Governor in Council in a minute dated 3rd January, 1855 records his approbation of the manner in which the duties of Agent have been performed by Mr. Smalley during 1853 and 1854. Correspondence which dates between December, 1854 and July, 1855 upon the current construction accounts follows Mr. Smalley's Report. The correspondence is of a most diffuse character, and perhaps the only point worthy of notice is that which refers to delay in the payment of salaries. Mr. Bruce, the Chief Engineer states that the salaries due for April, 1855 had not been paid on the 18th of June and that there was no detention of the accounts in his office. Mr. Bruce observes that he has paid the salaries of many of the workmen or they would have been in open rebellion and remarks that the withholding of the funds is an undue exercise of power and is calculated to injure the undertaking. The delay appears to have occurred in the office of Mr. T. Jenkins, the Agent who states that he has "no hopes of being able to transmit the wages statement for sanction with more expedition at any future period than at present." The Agent therefore recommends that there be an advance to him of 5,000 Rs. in addition to the 15,000 Rs. already advanced for contingent expenses. This advance is sanctioned by the Governor in Council but at the same time a hope is expressed that an improvement on the present system will take place as to render such an arrangement unnecessary. The correspondence upon the "advances construction accounts" dates from December, 1854 to December, 1855. On the 3rd January, 1855 the Government complained of the irregularity of "leaving to the last moment demands for funds which it is expected the Government are to place at the disposal of the Chief Railway Engineer at a few moment's notice, without having before them the necessary accounts as a guide for their proceedings." In a minute dated the 19th June, 1855 the Government determine that no advance "shall be sanctioned until the staking out of the line is completed, and surveys placed in the hands of the Collector, and that, as a general rule, for the future, no part of the line shall be commenced until the limits of the land required are marked on the ground, and the Collector has given his consent to the commencement of the work." The Government again animadverts upon the great delay in the transmission of the accounts and complain,

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of the irregularity with which the works have been carried on, inasmuch as in many districts they have been commenced without the required preliminary surveys having been sent in and without any authority written or verbal. The correspondence upon the expenditure in District VI. from June, to August 1855 needs no remark. With regard to the large unadjusted cash balances which remain from time to time in the Engineer Department it is deemed advisable by the Consulting Engineer that duplicate accounts of the distribution of the monies be forwarded to the office of the Agent. Thus the knowledge of the distribution of the money will not be dependent upon the life of the Chief Engineer or upon the records in his office.

In the correspondence upon the accounts of the Locomotive Department nothing is worthy of notice either as regards the accounts or the advances.

On the 19th June, 1855, the Consulting Engineer requested the Agent to submit a report upon the relative cost of carriages made by contract in Calcutta and those made by Messrs. Simpson and Co. in Madras. In Calcutta the contractor makes the whole carriage except the iron work and fittings, whereas Messrs. Simpson and Co. make the bodies with fittings, but do not supply the under-frames. A report was accordingly forwarded and it was found that the cost of a first class Railway Carriage at Calcutta exclusive of springs, wheels and under-frame iron work was Rs. 3,170 whilst the cost at Madras for the same was Rs. 3,300.

The Agent agreeably to the command of the Board of Directors submits a report upon the audit of Railway accounts in India. He observes that the shareholders of the Madras Railway Company have appointed two auditors to examine and report upon the truthfulness of the account as submitted to the Directors for the sanction of the shareholders. "Copies of all accounts and vouchers, are sent from this Home, where they are again entered in the Home books of the Company. These accounts are all previously submitted to the Government, and are *sanctioned*. This fact does not appear to have been known to the Directors, as in consequence of the Auditors having reported their inability to give a complete audit of accounts in England of the monies spent in India, they suggested that a system of check, similar to that followed in Bengal, should be adopted in Madras and sent a copy of the rules of the Bengal Railway cash accounts. The accounts of the Company are, of course, to be kept in two separate sets of Books, the one being the "capital account" and the other the "revenue account." The "capital account" shows the amount received by the Agent, from the Government Treasury. These sums are distributed by the

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Agents to the Heads of Departments, as authorized by the Government, whose receipts become the vouchers for issue in the Chief Accountant's Office. Those officials are required to submit appropriation statements, showing, under separate heads, how they have expended the sums placed at their disposal, together with vouchers in support of every issue to clear their accounts. The Chief Accountant is responsible that all Accounts are carefully checked, and examined; if found correct, they are forwarded for the sanction of the Government, on receipt of which, and not before, are the accounts entered in the Ledgers of the Company. In the department of the Chief Engineer, conducting the operations, as is done on the Madras Railway, without the intervention of Contractors, large sums have necessarily to be placed in his hands and those of his subordinates. But it is not desirable that this practice should be followed in any other Department of the Company. In the store department, the bills of venders for stores, or materials, are first examined by the General Storekeeper and passed as correct, and brought to account; the bills are then checked in the Chief Accountant's Office, and if the charges are unexceptionable, a cheque for the amount is given by the Agent, in the Finance Department, for the amount of the Bill—monthly these sums are entered in a general statement, and submitted for sanction. All sums received by the Railway Company's Servants, on account of Traffic, must be sent intact, without any deduction whatever, to the Chief Accountant's Office daily, or oftener, in boxes constructed for the purpose; the money will be accompanied by a cash statement; these, on receipt, will be examined by the cashier, and placed to the credit of each Station Master. The total amount received on the day will be forwarded to the Bank, and monthly the total amount received, will be paid into the Government Treasury, without any deduction whatever. For payment of expenses for working the line, application will be made to the Government to place such a sum as may be necessary at the disposal of the Agent, or General Manager, who in the monthly statement will show his appropriation of the money." To the report are appended the "Railway cash account rules." The Consulting Engineer remarks upon the Agent's letter that the "duty of 'auditors' in England, spoken of by Major Jenkins, is not exactly that which we understand to be performed in an audit office under Government. An auditor in England is employed, for the occasion, to look through the books, to compare the entries with the vouchers, to examine the calculations, and compare the actual with the recorded cash balances. He does not trouble himself with the propriety of the several charges made. In India the duty of an audit office is to

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examine minutely the detailed calculations, and the charges checking the latter to the fractional part of a rupee. Considering the nature of the operations of this Railway Company, it is manifest that their auditors must be in England; and it is equally clear that all they require, in confirmation of the accounts sent from this country, are vouchers furnished with the attestation of the Government Officer." The minute detailed examination of accounts common to Government Audit Offices is the peculiar province of railway establishments. The Government officer should merely exercise a general control over the expenditure and have regard to totals rather than particulars. If the Government "were to establish an office for the purpose of auditing, in the Indian sense, that is minutely checking all the calculations in the numerous accounts connected with the Railway transactions, they would be in fact doing a portion of the very work for which the Railway Company is formed, and for which they are furnished with expensive establishments." The observations of Colonel Pears were approved of by the Governor in Council and submitted to the Board of Directors. The report contains correspondence upon the estimates for Nos. 3 and 7 divisions, upon "staking out," progress Form E. fortnightly reports, progress of works in district 14 and proceeds.

The estimate for the bridge at Royapooram was 32,000 Rs. the bridge consists of 6 inches of 25 feet each and the total length measured between the faces of the abutments is 172 feet 6 inches. The estimate for the canal bridge was Rs. 8,000 and the amount sanctioned by Government was Rs. 11,137-1 whereas the amount actually expended was Rs. 22,209-0-11. Upon which the Chief Engineer remarks. "This bridge has cost a great deal more than it should have done, and more than it would have done, had we had an experienced man in charge of it." The cost incurred above the estimate was occasioned by the very treacherous and difficult character of the foundation, by the much larger than anticipated cost of granite and laterite and by the carelessness of the accounts taken of materials delivered. It is however satisfactory to know that the work has been well done and completed for one-third of the sum it would have cost in England. The total amount expended upon Cortilliaur bridge was Rs. 74,257 whereas the sanctioned estimate was Rs. 55,518-14-2. The excess of the expenditure over the estimate was owing to the increase of the cubical content of the work from cubic yards 6881 to cubic yards 11,469 and to the despatch obliged to be used to complete it before the monsoon. The Chief Engineer observes that the bridge is the first work of the kind in that part of India and was both well and quickly done. Under these circumstances the Government

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sanctioned the expenditure. The estimate for the bridge over the road between Arcot and Chittoor was Rs. 4,625. The sketch and estimate for the Cauvery bridge had not at the other time of the report been forwarded. Some rail girder bridges have been erected in the 1st Section, District 7, these were carefully tested and the result was as follows. "With the driving wheel of the Engine over the centre of the Girder, deflexion five-tenths of an inch, at a speed of 10 miles per hour five-tenths of an inch.

at a speed of 15 miles per hour	ib.	do.
at a speed of 20 miles per hour	eleven-twentieths	do.
at a speed of 30 miles per hour	ib.	do.
at a speed of 50 miles per hour	ib.	do·

Permanent deflexion none :—no appearance of movement in the wall plates, or masonry."

The correspondence relating to the sleepers contains nothing of interest with the exception that to preserve the timber from rotting and from the attacks of the white-ants corrosive sublimate, sulphate of copper, chloride of zinc and arsenite of potash have been proposed. Difficulty has been experienced not only in obtaining sleepers but in obtaining timber for rolling stock. The agent therefore in 1855 applied for permission to purchase 1,00,000 cubic feet of timber at a cost of 70,000 Rupees being the estimated amount required for the construction of rolling stock from May, 1855 to May, 1856. The Government authorised the advance of 70,000 Rs. for the purchase of the timber. "In a letter from the Board of Directors of this Company, dated the 29th March last, it is stated that it appeared to the Board to be most desirable, in order to prevent any error in the description of materials and machinery supplied for the Electric Telegraph Department, that, if possible, they should be obtained through the Government, as, in this way, uniformity of construction and working throughout the chain of Indian Telegraphs, to which importance is so deservedly attached, will be most effectually secured."

On which account the Agent applied for wire and instruments from the Electric Telegraph Department of the Government. Neither wire nor instrument could be supplied from the public stores to the Madras Railway Company.

On the 9th February, 1855, the Consulting Engineer was instructed to take measures for ascertaining whether certain levels taken by Lieutenant Tyrrell between Vaniembaddy and the Mooroor Pass and which had been questioned by Mr. Beattie one of the Engineers were correct. The Consulting Engineer came to the conclusion that "Mr. Tyrrell did his work generally well, though there may have been some errors in his levels, more than there should have been, his line

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was well selected, and his work, where disputed by Mr. Latham, was correct, moreover he was not answerable for the errors in the plans noticed by Mr. Beattie."

The estimate for the buildings of the Madras Terminal station was Rs. 3,59,121-5-10. The estimate provides for six good sheds at a cost of Rs. 55,836, a passenger's shed the estimate of which was Rs. 99,907-10-2 and other buildings. The Consulting Engineer remarks that sufficient solidity should be given to the roof and that arrangements should be made for closing the ends of the station when necessary. These precautions should be taken on account of the great violence of the storms in India. Some idea of the force of the wind may be formed from the fact that in November, 1846, the anemometer of the Government Observatory in Madras broke after registering a pressure of 40 lbs. to the foot, while calculations made shew that the pressure of the wind must on that occasion have been 57 lbs. to the foot. Owing to some mistake in the construction of the station buildings the platform was constructed 3 feet 6 inches below the level of the carriage floor, on this account an additional outlay of Rs. 84,151 was rendered necessary and the platform shed was separated from the station buildings. The report contains a correspondence upon the estimates for small Stations which amounted in all to Rs. 39,831-4-0.

During the year there was some delay in the transmission of the "store and workshop" accounts. The total receipts up to 31st December, 1854 were Rs. 1,15,000 of which Rs. 67,000 were left in the shape of stores and raw material. The Government in remarking upon the unsatisfactory nature of the returns desire to impress upon the Agent that "it is his duty to see that complete and accurate returns of the Railway stores and the outturn of the workshops are duly rendered in future, and to forward them without delay for submission to Government." The report contains the correspondence upon the buildings for the Locomotive department for which a shed was ordered to be erected at an estimated cost of Rs. 10,910. The rules for taking land required for the construction of the railway are:—"1st, That all land required for incidental purposes connected with the Railway be taken by the Railway Commissioner. 2nd, That such land, if within the prescribed limits, be taken under Act XLII. of 1850; if otherwise, by private bargain, when reasonable terms can be obtained. 3rd, That the contractors be at liberty, as heretofore, to take earth for bricks or ballast from the land given to the Railway Company for side cuttings, spoil banks, or other purposes, but that they be required to pay rent for all land that may be taken expressly for their own use. Subsequently, it was

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ruled by the Government of India, as per Secretary Mr. C. Allen's letter, No. 1179, dated 3rd November, 1854. That when the works are being constructed by the officers of the Railway Company, the price of extra land required for brick making, or other incidental purposes, should be paid by the Railway Company, as it would have been paid by contractors, had the works been let to contract." Some dissatisfaction was felt by Government at land having been taken possession of, in the Salem District before it was regularly transferred.

The correspondence upon land compensation contains but few points worthy of notice. The land required for the way and works is conveyed by Government under the deed of contract but all other whether for brick yields, ballast pits or otherwise is paid for by the Railway Company. In the statement land for these two purposes is kept distinct. It has ever been the aim of Government that the owners of the land should receive compensation with all due despatch and it appears that with the single exception of the North Arcot District their wishes were tolerably well carried out. With regard to the site of a Terminus on the western coast Mr. Bruce preferred Beypoor to Cochin though the latter is a more populous place and has a better harbour. Beypoor was selected inasmuch as it is conveniently near to Calicut, the capital of Malabar, besides Beypoor is a place easy of access for ship's boats and the "anchorage without is excellent." The report contains the list of Stations sanctioned by Government between Madras and the Mooroor Pass, the rules for Engineers, framed with special reference to the precautions to be observed in interfering with property before all the arrangements have been made regarding compensation, and the correspondence commenting upon these rules.

With regard to the employment of native labour, the Consulting Engineer is of opinion that there is nothing that natives will not be found capable of performing when once instructed. "They are quick, and willing to learn; but, in their present state, they require, unfortunately, not only first teaching, but subsequent close watching—one of their most prominent failings being a carelessness of the quality of their work, and a short-sighted disregard of their reputation. In regard, therefore, to the Engineer and Locomotive departments, I conceive that all ordinary manual labour may and ought to be supplied from among the natives; that, for sometime to come, not only must Superintendents and Foremen be supplied from England, but there should be men specially appointed, in the workships, to the immediate charge of one or more of the more valuable tools, according to their character, whether planning, drilling, shaping, sawing machines, or others. These cannot yet, be wholly trust-

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ed in the hands of natives although they may be used by them under such supervision. In the meantime, the Agent has made an excellent beginning, in the formation of a pupil establishment, under the Locomotive Superintendent, where young men, natives of the country, having passed the required examination, will receive such practical instruction as shall fit them, in a few years, for those duties to which it appears at present necessary to appoint men from home." A regular scheme for the travelling allowances of the Railway officials has been drawn up and submitted for approval. During the year 1855 an application was made for soldiers as plate-layers, but the Government decided that the Railway Company should in every case make their own arrangements for the supply of labour and that it was opposed to the intention of the Hon'ble Court to place any of their servants at the disposal of the Railway Company. If Commanding Officers, however, choose to grant leave to their men they may be employed. With regard to the proposed junction of the Madras and Bombay Railways the Governor in Council on the 21st May, 1855 decided that it was premature to send any Engineer to arrange "where the proposed lines from the two Presidencies should meet, until it was decided by the Government of India whether the work of forming the Railway, over the 80 miles of Nizam's territory lying between the Kistnah and Toombuddra rivers should be confided" to the Bombay or Madras Railway Companies.

REPORT ON THE EXTERNAL COMMERCE OF THE MADRAS TERRITORIES.

For 1855-56.

On the 26th of July, 1856, Mr. W. E. Underwood submits a report for the official year 1855-56, to the Secretary of the Board of Revenue, Fort St. George upon the External Commerce of the Madras Presidency.

The accounts for 1855-56 were transmitted three months after the termination of the official year and would have been submitted earlier if the printed blank statements had been ready.

The monthly expense of the establishment allowed for compiling the Madras Returns is Rs. 619 which is Rs. 51-13-4 less than the expenditure for the same object in the Straits Settlements, whilst the task is more laborious.

The subjoined statement exhibits the transactions of the year 1855-56, as compared with the preceding year :—

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	1854-55.	1855-5 6.	Increase.	Decrease.
	Rupees.	Rupees.	Rupees.	Rupees.
Imports, Merchandize, ...	1,91,24,962	2,31,33,876	40,08,914	„
Imports, Treasure, ...	64,81,955	1,37,16,696	72,34,741	„
Total, ...	2,56,06,917	3,68,50,572	1,12,43,655	„
Exports, Merchandize, ...	2,39,48,083	2,91,70,905	52,22,822	„
Exports, Treasure, ...	82,06,956	44,18,750	„	37,88,206
Total, ..	3,21,55,039	3,35,89,655	52,22,822	37,88,206
Re-Exports,—Merchandize, ...	7,17,474	6,64,364	„	53,110
Grand Total, Merchandize, ...	4,37,90,519	5,29,69,145	92,31,736	53,110
Grand Total, Treasure, ...	1,46,88,911	1,81,35,446	72,34,741	37,88,206
Total, ...	5,84,79,430	7,11,04,591	1,64,66,477	38,41,316
Net Increase, ..	„	„	1,26,25,161	„

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The total value of the imports into the port of Ganjam for the year under review was Rs. 1,16,083 of which Rs. 60,000 was treasure. The duty levied was Rs. 113-2-8. The principal import was gunny bags. The exports amounted to Rs. 11,98,251, the duty levied was Rs. 4,493-9-3 and the chief articles of export were rice, gingelly seeds and sugar. The total number of square rigged ships which arrived at the port was 29 of which 5 were under British colours, 10 were French and 14 were native craft. Their combined tonnage was 8798 tons. The port of Vizagapatam received goods to the amount of Rs. 1,53,521 upon which a duty of Rs. 1053-10-10 was levied. The chief import was cotton goods. The value of the exports was Rs. 16,82,699 and the duty levied was Rs. 25,776-3-3. The chief exports were sugar, gingelly seeds and cotton goods. The value of the imports re-exported was Rs. 4,421. 45 square rigged vessels entered the port, 5 under British colours, 8 under French colours, one from Maldive and the remainder native craft.

The value of the imports by sea into the port of Rajahmundry was Rs. 4,73,440 of which Rs. 2,80,973 was treasure. The amount of duty levied was Rs. 2727-15-8 and the principal articles imported were timber and cotton goods. The exports amounted to Rs. 16,96,521 of which Rs. 26,100 was treasure. The duty levied was Rs. 37,394-6-1 and the principal exports were sugar, gingelly seeds and cotton goods. The value of the imports re-exported was Rs. 19,060. The total number of vessels that entered the port was 140 affording a tonnage of 30,997 tons. 95 were native craft, 34 French and the rest American and British.

The value of the merchandise imported into Masulipatam by sea was Rs. 86,566 and the duty levied Rs. 55-11. The chief import was grain. The value of the exports was Rs. 1,03,306 upon which no duty was levied. The chief exports were seeds and lamp oil. 28 native craft arrived with a total capacity for 2,421 tons.

The sole imports by sea into Guntoor were paddy and rice upon which no duty was levied, the value of the grain was Rs. 8,529.

The merchandize imported into the port of Fort St. George was Rs. 1,52,67,382. The treasure imported was Rs. 88,81,911. The duty levied was Rs. 5,09,862-12-2. The chief imports are cotton goods, drugs and metals. The value of the exports by sea was Rs. 1,27,60,080 of which Rs. 36,07,991 was treasure. The duty levied amounted to Rs. 1,55,148-7-7 and the chief exports were grains, seeds, spices and oils. Rs. 1,89,720 was the value of the goods re-exported. The number of ships that arrived was 307 and their tonnage 1,55,191 tons.

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The above is the number and tonnage of the ships from external ports; in addition there were 334 ships from the Indian and Home ports with an aggregate tonnage of tons 97,863. Thus we have in all 641 vessels of 2,53,054 tons arriving at the Port of Fort St. George in the course of the year under review. Of these there were 48 steamers of 89,190 tons and 203 square rigged ships of 1,05,715 tons under British colours. The rest exclusive of native craft were American, French, Sardinian and Swedish ships.

The port of South Arcot received merchandize to the value of Rs. 87,134 upon which a duty of Rs. 4,789-8 was levied. The chief imports were timber and fruits. The value of the exports was Rs. 7,42,949, which paid a duty of Rs. 18,459-7-11. The principal article of exports was indigo. The value of the goods re-exported was Rs. 5,706. The number of ships which arrived at the port during the year was 113 of which 9 of 1,693 tons were under British colours, 1 of 209 tons was under Dutch colours and 103 of 4,934 tons were native craft.

The import trade of Tanjore amounted to Rs. 9,82,059, and the gross amount of duty levied was Rs. 53,401-1-7. The chief import was fruit. The exports were valued at Rs. 32,21,495 and the duty paid was Rs. 1,45,924-5-5. The chief export was rice. The value of the re-exported imports was Rs. 30,288. The total number of the ships that visited the port was 368 of 31,189 tons, 285 of 26,596 tons were under British colours, 12 of 3,595 tons were under French colours and the remainder were native craft.

The value of the export trade of Madura was Rs. 3,97,067 and the duty paid was Rs. 11,589-7 of which Rs. 2-10 was the sum levied upon exports from home ports. The chief exports were bullocks and sheep. The import trade amounted to Rs. 1,38,011 and the duty paid was Rs. 9,409-3-9. The principal import was betel-nuts. The value of the imports re-exported was Rs. 8,552. The number of the ships which visited the port was 458 and their tonnage was 20,000; of these 359 were native craft of 12,416 tons and the rest were under British colours.

The imports of Tinnevelly amounted to Rs. 2,74,335 and the duty was Rs. 6,628-0-6. The imports of greatest value were cotton goods and Poobathoo, a sort of dye. The exports amounted to Rs. 10,47,431 and the duty was Rs. 10,372-4-8. The chief exports were cotton wool and chillies. The value of the imports re-exported was Rs. 8,427. The total number of ships which visited the port were 296 of 17,262 tons of which 212 ships of tons 13,362 were under British colours.

The value of the imports into Malabar was Rs. 62,95,488, but of

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this sum there was treasure to the amount of Rs. 23,39,724. The exports were valued at Rs. 50,70,938 of which Rs. 80,964 was the value of the treasure. The duty levied was Rs. 48,747-13-5. The chief exports were spices, coffee and grain. The principal imports were cotton goods, drugs, dyes, seeds, grain and metals. 1,757 vessels of 1,18,364 tons visited the port in the course of the year. 157 of 42,336 tons were under British colours and the rest were either native craft or Portuguese, Dutch, Arab, Danish or French ships. The value of the imports re-exported was Rs. 3,51,023.

The number of the ships which arrived at Canara was 1,718 and their tonnage was 63,535 tons. 1,708 of 60,372 tons were native craft and the rest were under British and French colours. The value of the imports was Rs. 40,86,113 of which Rs. 21,54,088 was treasure. The duty levied was Rs. 29,664-7-11. There were 52,36,431 lbs. of salt imported of which 23,78,321 lbs. were from Bombay. The principal import was cotton goods. The value of the exports was Rs. 56,68,918 of which Rs. 7,03,695 was treasure. The duty levied was Rs. 43,862-4-1 and the chief exports were grain and cotton wool.

On the whole the gross amount of duty levied upon the imports by sea into the Madras territory was Rs. 6,47,703-8-2 and that upon the exports was Rs. 5,42,268-5-8. The accompanying table shews the number of square rigged vessels which visited the ports of the Madras Presidency during the official year 1855-56:—

General Statement of Ships and Tonnage arrived at the Madras Presidency, from May, 1855 to April, 1856.

ARRIVALS.	Total Ships and Tonnage arrived.	
	Vessels.	Tonnage.
Steamers under British Colors, ...	48	89,190
Ships under British Colors, ...	1,036	2,12,463
American ,, ...	12	8,391
Arab ,, ...	8	3,141
Danish ,, ...	5	2,351
Dutch ,, ...	7	3,392
French ,, ...	102	36,428
Maldive ,, ...	1	120
Sardinian ,, ...	1	748
Swedish ,, ...	1	417
Native Craft, ...	4,439	2,13,918
Total Square Rigged & Native Craft, ...	5,660	5,70,559

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TENURE OF THE POSSESSIONS IN THE DECCAN HELD BY HIS HIGHNESS JYAJEE RAO SINDIA.

Bombay Records, No. XXXVIII.—New Series.

Lieutenant A. Etheridge on the 23rd of November, 1852 reports upon the claims of His Highness Sindia to estates of various descriptions South of the Ajunta Range.

His Highness Dowlutrao Sindia in a treaty with the British Government on the 30th of December, 1803 ceded his possessions south of the Ajunta with the exception of some villages held in Inam by his family. These lands were then in possession of the British who agréed "that they should be restored, provided that no troops should ever be introduced into those lands and villages, under any pretence of collecting the revenues, or any other pretence whatever." In 1829 it appeared to the Government that His Highness was holding considerably more land than was reserved to him by the above treaty, they accordingly directed that Sindia should submit a list of his claims. Such a document was transmitted on the 20th February, 1820 by the Gwalior Durbar. About this time original papers were discovered in the Poona Duftur drawn up by one of the late Peshwa's Dufturdars, and containing a list of the villages south of the Ajunta held in Inam by His Highness. These documents coincided in a remarkable manner with that setting forth the claims of His Highness. Every head with the exception of the first corresponded exactly and all agreed with the reservations set forth in the treaty. This manifestly threw great doubt upon the authenticity of the claims under the heading in question and which involved no less than 108 villages, of which only one Jambgaum in Purgunna Parnair was mentioned in the treaty. But there was still greater evidence than the above as to the invalidity of the claims of the Gwalior Durbar. The new claims under the first heading really included all the reservations and would have restored to Sindia all the cessions set forth in the treaty and 14 villages north of the Ajunta in Khandeish which had never been questioned. Thus the claims of the Gwalior Durbar reducing all the clauses of the Treaty to a nullity could not be admitted. Eventually out of the 241 villages then held by Sindia south of the Ajunta only 151½ could be established by documentary evidence. The Government therefore ordered that the remainder should be resumed, as also certain Umuls which had come into Sindia's possession in 1798. From motives of delicacy Dowlutrao Sindia was permitted to have a *life interest* in these unauthorised posses-

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sions. He died in 1827. Chor Chittees for the surrender of the villages were transmitted through the Resident, and the Collectors in the Deccan were directed to receive them in charge. On their resumption it was found that a very considerable number had been alienated by Sindia, both prior and subsequent to the treaty. It was therefore directed that all alienations made previous to the date of the treaty should be respected, as well as all those of a purely religious character of whatever date, but that all other alienations should be resumed.

Several restorations were accordingly made by the British Government. In 1839 the Durbar requested permission through the British Courts of Law to establish their claims, to all the villages as Inamdars and Jageerdars from the Peshwa and therefore from the British as conquerors of the Peshwa's possessions. "From this it was evident therefore that the act of liberality exercised by the British Government had been entirely misunderstood by the Durbar" and this misconception was shared in by the Resident who urged their suit.

The individual alienations had been restored by process of law and it was probably this which had led the Durbar to wish to prosecute its claims on similar grounds. The Bombay Government however decided that claims to Inams were excluded from the British Courts of Law, the Government reserving to itself the authority to decide upon claims of this nature. The supreme Government concurred in the views of the Bombay Government and directed that Sindia should desist from the further prosecutions of his claims to the restoration of the villages. The Supreme Government likewise decisively rejected the claims set up by the Durbar for the Umuls in Sewgaum, Deypoor and Umber, since by the treaty before alluded to Sindia had abandoned all his possessions in the Deccan.

The plea, that such Umuls should not be resumed inasmuch as up to 1842 the British Government and the Peshwa had tacitly acquiesced in Sindia's right, was held insufficient. The Durbar were therefore called upon to make a final surrender of the remainder of these possessions which were inadvertently omitted in the general resumptions of 1828. The report contains the correspondence upon the resumptions and upon the validity of certain exceptions as urged by the Durbar.

"It must be remembered that, on the final overthrow of Dowlutrao Sindia, the British Government, with a view to bringing His Highness the sooner to terms, placed under *nominal* attachment his entire possessions, and it was only when 'assured that his compliance was the only means of averting the entire conquest of his territories, that he submitted to the terms of his conquerors. This timely submission, there-

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fore, of Dowlutrao Sindia, averted the total loss of his dominions; and although he was never virtually dispossessed, yet there was a nominal attachment placed upon his territories generally. On the framing of the Treaty at Surjé Anjungaum on 30th December, 1803, Sindia, after ceding his entire territories south of the Ajunta Range, and renouncing for ever all rights and interest therein, appears to have thrown himself upon the generosity of his conquerors in petitioning to be allowed to retain certain lands and villages, which '*having descended in the family from generation to generation*' had become old hereditary possessions. The British Government, therefore, in perfect reliance upon the good faith of this assertion, conceded certain lands and villages."

The present possessions of Sindia in the Deccan may be considered under five heads:—

1*st*. Those held authorisedly in 1803.

2*nd*. Those held but not authorisedly in 1803.

3*rd*. Those not held in 1803.

4*th*. Estates specifically reserved in the treaty, viz. those which had descended from generation to generation in Sindia's family as hereditary property.

5*th*. Those which were reserved in the treaty but which do not fulfil the conditions recited.

With regard to the first subdivision there can be no doubt of its authorised nature; but with reference to the second heading it may be argued, that as these lands were conceded in perfect reliance that they fulfilled certain stipulations which they did not do, they may be resumed; and yet on the other hand it may be urged, that as the error was not discovered at the time, to interfere with them now would be a breach of good faith.

Mr. W. Hart, the Inam Commissioner in transmitting to the Government of Bombay the report by Lieutenant Etheridge, considers that all the Inams and Huks held by Sindia from the Peshwa as a private individual should remain unaffected by the treaty in 1803. With regard to claims coming under the first subdivision, given above, Mr. Hart considers that authorised enjoyment up to the Peshwa's fall in 1817 is as important an element as authorised enjoyment up to A. D. 1803. Claims of an hereditary nature under the second and third subdivisions should be admitted when there is proof of grant but on no other. There can be no doubt as to the propriety of the claims of Sindia under the fourth subdivision but the question remains as to the tenure on which the estates held under that subdivision should be held. There is considerable doubt as to the proper course to follow with respect to estates held under the fifth subdivision, and Mr. Hart applies for the decision of the Government on this head. On the whole Mr.

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Hart is of opinion that the entire concession of all that can under any point of view be said to be reserved by Article VIII. of the treaty will not occasion to the British Government any unreasonable loss. When the Talookas and villages were restored to Dowlutrao it was not said that they should be held on a more permanent tenure than that on which they were previously held. Therefore *according to the Treaty*, those that were hereditary would remain so, whilst those which had not been held on hereditary tenure would of course not become anything more than they had been. "Thus, without any straining of the meaning of the clause of reservation, all that was of a really hereditary nature would be continued for ever, and what was not would lapse at Dowlutrao's death, unless continuable under the Surinjam rules with which the Treaty has no connection." The reports of Mr. Hart and of Lieutenant Etheridge were transmitted to the Supreme Government and the views of Mr. Hart were generally approved of by the Bombay Government.

Before pronouncing a final opinion the Governor General in Council thought it necessary to refer the points on which a decision was called for, to the Agent of the Governor General for the affairs of Sindia's dominions.

Accordingly on the 12th of May, 1853 Mr. Bushby reports upon the rights of Sindia in the Deccan. Mr. Bushby observes that the possessions and rights of the Sindia family are of two descriptions, one based on the treaty of 1803 and the other on his claims as an hereditary Wutundar of the Peshwa. The treaty simply guaranteed the restitution of the properties enumerated, without prejudice to the possessions rightfully or wrongfully held by Sindia at the time and it "would therefore be a breach of faith if the British Government allowed the question of resumption to be even mooted." With regard to Sindia's claims as a private Wutundar, the Bombay Government are perfectly at liberty to dispose of them as they would those of any other Wutundar. Under all circumstances Mr. Bushby is "inclined respectfully to deprecate all further agitation of the subject, and to abstain from any resumptions from Sindia of the possessions which he still retains in the Deccan." He is farther of opinion that it is too late to bring forward Mr. Commissioner Hart's new argument.

Mr. Manson on the 29th of August, 1854 submits a report from Captain Cowper, the Assistant Commissioner, and expresses his opinion that "the provisions of the treaty should be enforced to the very letter."

Captain Cowper, after giving a statement of the case which agrees in the main with that by Lieutenant Etheridge summarised above, observes that no argument can be founded on

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the non-mention of the reserved rights of Sindia in the partition treaties; for General Wellesley distinctly guaranteed that the reserved rights were to remain to Sindia under the Company's protection. Such being the case it is clear that no sovereignty of either the Nizam or the Peshwa could have been recognised with regard to any of the holdings of Sindia not expressly mentioned as under the "Company's protection." Moreover Mr. Bushby's proposition admits of the deduction that the treaty left Sindia all that he had ever held in the Deccan. Whereas this treaty was intended to restore nothing but the Inam property. The fact that the lands to be restored where those that "Sindias' family have long held in Inam" is fatal to any claim put forward as to any Surinjam holding. Captain Cowper is of opinion that the rights reserved to Sindia by the treaty "can alone be disposed of by negotiation" but that all holdings not included in the reservations can be resumed.

The shares which the "British Government, as the Peshwa's successor, holds in villages reserved to Sindia by the Treaty of Surjé Anjungaum, have from the first (1817) been productive of little save inconvenience, discussion, and loss. It has been found impossible to obtain from Sindia's managers anything like the sums properly payable, without exercising a degree of interference and scrutiny which it has always been the object to avoid, and to which objection has always been raised on Sindia's part." Captain Cowper therefore considers that an exchange of these shares for a certain number of entire villages is the only feasible method of settlement.

In a letter dated the 15th of November, 1855, to the Supreme Government, the Governor of Bombay is of opinion that Captain Cowper has fully answered Mr. Bushby's arguments and suggests that if Sindia "would cede the whole of his territory south of the Vindhya Range for an equivalent in Hindoostan, the British Government would do well to make the transfer. They would get Boorhanpoor on the Taptee; many of the places where iron is found on the banks of the Nerbudda are also included in Sindia's territories south of the Vindhya Range, and these places will incontestably acquire additional value when the railway is extended to Jubbulpoor."

The Supreme Government in acknowledging the receipt of the letter from the Governor of Bombay ask, whether the Government of Bombay consider that the lands, nominally stated to be held in Inam but really held in Jagheer, should be retained by Sindia as coming within the guarantee of the treaty. They reply that everything restored by Article VIII. of the treaty was restored solely because General Wellesley was informed that "these lands were not Jagheer but were Inam." On

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the 27th of August, 1856, the Secretary to the Government of India was directed to state for the information of the Government in Bombay, that His Lordship in Council was of opinion that there was but one binding instrument in the matter in question namely, the signed Persian Treaty of 1803. It does not specify Inam as a necessary condition of the lands to be ceded to Sindia. That such tenure was intended by the British negotiators to be a condition and that it was accepted as such by the Maharaja's Vakeels there can be no doubt; but as he who could and ought to have explained himself clearly and fully in the Treaty failed to do so, it is to his own loss and detriment. "For these reasons His Lordship in Council cannot recommend the resumption of the lands in question at the present time, however little moral doubt there may be as to our right to do so. The Governor General in Council concurs with the Government of Bombay in thinking, that it will be an advantageous arrangement for this Government to exchange the shares which it possesses in some villages reserved to Sindia by the Treaty for entire villages equivalent in value to the valuation of those shares sa assigned in the Peshwas' records. The Agent to the Governor General for Central India, will accordingly be instructed to negotiate with the Gwalior Durbar, with the view of obtaining the consent of His Highness the Maharaja Sindia to this arrangement." Mr. Edmonstone was further desired to say that the Governor General in Council would give instruction to His Lordship's Agent in Central India to negotiate with the Gwalior Durbar with a view of exchanging the shares which the Government possess in some villages, reserved to Sindia by the treaty, for entire villages. His Lordship in Council also approves of the proposal of the Bombay Government that the "territory of Jhansie be made over to Sindia in exchange for the country south of the Vindhya Range, on the Taptee and Nerbudda, and in the neighbourhood of the railway to Jubbulpoor." It is further directed that "the possession by Sindia of the small Inam land alleged to have been granted by the Peshwa in the capacity of Petal should not be disturbed."

THE NAHRWAN CANAL.

Bombay Records, No. XLIII.—New Series.

During the greater portion of the year that portion of "Arabia-Irak lying to the east of the Tigris, except on the few beaten tracts of commerce, is almost as difficult of access as the most impenetrable regions of the globe." The region of

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the Nahrwan Canal comprises a tract of some 400 miles in length with an average breadth of 50 miles and is bounded on the east by hilly ranges declining with an easy and very gradual descent to the Tigris. "Of the rise and progress of the canal, history affords us but scanty information. Its origin is ascribed to the wisdom of the renowned Shapur Zalaktaf, and its repairs, improvements, and extension to Khusru Anushirwan, perhaps the greatest monarch that ever presided over the destinies of the Persian empire." At the commencement of the reign of Khusru Parviz, parks and pleasure grounds, palaces and hunting seats adorned the banks of the canal; but on his defeat by Heraclius, the country was overrun by barbarians who gratified their love of destruction by demolishing works of luxury and utility, palaces and canals alike. Persia never recovered the blow inflicted by Heraclius and indeed no breathing time was allowed, for under the converting sword of Syed Ibn Wakas, the General of the Khalif Omer, Mahomedanism succeeded to the tenets of Zoroaster. The rise of the house of Abbas after the murder of Ali and his ill-fated sons gave a lengthened peace to Irak Arabi and the Nahrwan was so repaired that Harun El Rashid derived no inconsiderable portion of his revenues from this source. The Nahrwan must have been devised as well for defensive as agricultural purposes " and, deep and rapid as it was, it doubtless served as an efficient outwork to the great capital of Madain, and subsequently to the cities of Baghdad and Samarrah." The middle of the 9th century of the Christian era witnessed the decline of the power of the Khalifs of Baghdad and from that time to 1821 A. D. the city was alternately devastated by Tartars, Persians and Turks. Under these circumstances the decay of the canals is not a subject for surprise. Even now, every fresh year witnesses a further decay of the fine province formerly watered by the Nahrwan and the few merchants who are left in the towns of Irak-Arabi are flying to more prosperous and less exacting regions. In the letters of the Emperor Heraclius to the Roman Senate and in the records of Simeon the Logothete the orthography of the name is in the Greek form of Narban but by Theophranes and Cedrenus it is either Narba or Arba.

The report contains a short description of the ancient course of the Nahrwan, now comparatively useless as none of the names of the places through which it passed can be identified, with the solitary exceptions of Bakuba and Aberta. In April, 1848 Commander Felix Jones undertook a journey to determine the track of the ancient canal. The party consisted in all of eight persons of whom seven were native servants. The village of Kut was the point from which they started and the first part of the journey was due north towards the village of Kut el Amareh where

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four canals, whose remains can still be distinctly traced, formerly met. The spot at which the canals crossed is marked by a high mound doubtless covering the remains of an edifice which stood at the confluence of the streams. Leaving the mound, the course pursued was nearly due west and towards the east bank of the Tigris, distant only some three miles. The Canal was plainly traceable as far as the ruins of Jumbil, once a place of considerable importance where all trace were lost. About a mile to the west the canals were again met with and the country was covered with a rich carpet of grass. This verdure was however but partial; for, as is generally the case, in ancient sites, there was much nitre in the soil. From Jumbil the exploring party returned to Kut el Amareh to examine the northern branch of the canal towards the Nishan el Kut. This branch appears anciently to have received the waters of a Canal called Ghathir el Reshadeh flowing apparently from the north west. At 12 miles to the north of Nishan el Kut, a swamp commenced, which obstructed the direct progress of the exploring party, who were reduced to considerable straits owing to the want of fresh water. At length the bed of the Mari Canal was reached, but the former site was only marked by a line of oases. The return journey, though by a different route, was equally harassing and a halt was made on the bed of an ancient canal now called the Mokta el Subba. The conclusion arrived at from the journey was, that unless the Ghathir el Rishadeh and the Mokta el Subba were the remains of the ancient Nahrwan no traces of it were to be found between the village of Jessan and the Tigris south of Jarjaraiyeh. To the N. W. of Mokta el Subba well defined traces of the Canal were again met with. The remains bear the name of Shaour they extend however, but for a short distance beyond Jarjaraiyeh, whose ruins now exhibit only insignificant mounds. At Abu Halifiyeh the traces were recovered and the bed of the canal, there 70 yards broad and with banks of 50 feet in height, was the road pursued by the expedition. At Imam Imlikh the banks became still more elevated and the Nahrwan making a bend to the west pursued a curved course to Qabr Harbi. Here, as the space between the ancient canal and the Tigris was increasing every mile and no water was procurable, Commander Jones was obliged to retrace his steps to the Tigris. After passing the winter at Baghdad, Commander Jones again set out with the intention of finishing the work he had begun. The first point of interest encountered in this second journey was the ruins of Mismai, a Parthian or Sassanian edifice. Its shape is that of "an irregular parallelogram, having had three gates facing the west, east and south

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points." The walls are massive and thick and at the present time are about 35 feet above the plain. And the four sides are respectively 280, 200, 150 and 95 yards in length. After leaving Mismai the travellers travelled nearly due south and crossed the canal for Sifweh which, is the name given to the ruins of an extensive town on either bank of the Nahrwan. At Sifweh the canal continues to the south for one mile and there meeting with the alluvial tract is conducted along it to the south-east. The remains of the first of the lateral branches that emanated from this magnificent Canal are distant about 2½ miles from Sifweh. They are on the right bank and are now called the Kushme el Khor. At Joziyeh the Khorassan canal formerly joined the Nahrwan. From that place to Chef, where the next branch was thrown off, the canal "was straight as an arrow" in a line of 128°. Leaving Chef the canal pursues a south easterly direction and is joined by the Tamerrah canal beyond which it is nearly 100 yards broad.

At Sisobaneh occurs the first branch from the left bank of the canal. Here the Nahrwan makes a curve to the south and its course resembles in its sinuosities the natural bed of a river; from thence to Aberta the canal pursues a more southerly course. In Arabic Aberta signifies the place of crossing and its site was probably selected as being upon the high road from the North East provinces of Persia to the capital of Ctesiphon from which city it was distant 17 miles. It is at present remarkable as being the only spot where a ruin has an erect position. The fragment is probably a portion of a massive wall, but the Arabs call it Minareh.

At Aberta the canal takes a bend in the opposite direction to that at Sisobaneh and an abundance of water from the collected rains occupies the bed of the ancient stream. This and the rich grass meadows that border on the canal have invited a large party of Niyadat Arabs to the spot. A little below Aberta are the remains of a fort, which originally appears to have been quadrangular with sides of 500 yards in length. The ruin at present is known by the name of Tel Tubbel or the mound of the drum. About three miles below Tel Tubbel there are the remains of three canals, two from the right bank and one from the left bank of the old stream. They all bear the name of Zahreh. Still lower down there are some considerable ruins for which the Arabs have no name and the remains of the piers of a bridge, from whence the Nahrwan pursues a south by east course to Kanatir. The numerous canals thrown out at this place point out the district to have been anciently both thriving and densely populated, and a noble structure in the middle of the bed of the Nahrwan shews that the people had obtained considera-

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ble skill in hydraulics. On either bank solid walls of well constructed brick, gradually approaching each other, were connected by a dam, on each side of which sluices 20 feet wide controlled the supply of water. The length of the walls was apparently about 870 feet and they were supported by buttresses. The dam and that part of the side walls exposed to the action of the water were ingeniously contrived to prevent the abrading effects of the confined torrent; for, when the fall of the waters infringed on the material the bricks were placed edgeways and over the whole there was a durable concrete composed of fine lime and large pebbles. The bricks used were exactly one foot square, kiln burnt, and so hard that it is even now difficult to break or detach them. The plains lying immediately below Kanatir having an increased dip it was necessary to build the works above mentioned so that the fertilising stream might not be converted into a destructive torrent. Five miles below Kanatir are ruins called Sumakeh, so thickly heaped together that the mounds of the ruined edifices are at least 50 feet in height. Commander Jones considers this place to have been originally the most populous on the whole line of the canal. From Sumakeh, southwards, the banks of the Nahrwan are much broken and somewhat lower than the country on the left bank; the course tends more to the south and from Meyahh to Qabr Harbi, the point to which the party attained in their previous expedition, it is nearly a straight line. Thus Commander Jones beginning at Kut traced the Nahrwan Canal as far as Qabr Harbi and then owing to the scarcity of water was obliged to make the best of his way to Baghdad, from which place on the following year he set out and traced the canal up to the point at which his investigations had previously ended. Here the expedition terminated and in the following year he left Baghdad to trace the main conduit north of Diyaleh which was anciently called Katul el Kesrawi.

The Katul el Kesrawi pursues from Baghdad a winding course bending on the whole N.N.W. It formerly had several branches the principal one called the Batt having a direction nearly due north and parallel to the Atheim, the Physeus of Xenophon. The re-opening of the Nahrwan is under consideration and it would be feasible enough to a Government less embarrassed that the Turkish, but with an empty treasury, an impoverished population, a dissatisfied soldiery and rebellious Turks, the measure can scarcely be put into operation. The condition of the province might however be ameliorated by the "introduction of small irrigating steam-engines every one of which would display its advantages to the natives of the country by its real and not apparent utility." The breed of cattle might

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be improved and, in addition to grain of every variety, indigo, sugar, hemp and opium are capable of being cultivated.

THE TIGRIS ABOVE BAGHDAD.

Bombay Records, No. XLIII.—New Series.

Commander James Felix Jones, I. N. submitted to Government on the 5th of November, 1846 a narrative of a steam trip to the North of Baghdad.

The steamer left Baghdad on the 2nd of April, 1846 with one month's provision and 21 tons of coal and firewood. The banks of the Tigris presented a beautiful appearance, the river was rising and the weather cool and pleasant. "The gardens to the north of Baghdad terminate abruptly about two miles above Kathemein on the right bank, but on the left, after leaving Moudhem, scattered villages and date-groves are seen as high as Tel Goosh, from whence to Jedidah the country, at present, is highly cultivated with wheat and barley." On both banks there are round towers and enclosures, the former affording shelter to the cultivators from marauding parties and the latter giving shelter for the cattle used in irrigation. The old adage of the sword in one hand and the plough in the other is here literally verified. "On the right bank and west of Munsuriyeh, the Tarmiyeh ancient canal leaves the Tigris; and another large canal, bearing the same name and said to be of more ancient date, is seen about one mile and a half below. This has now been long dry, but the northern canal, during the high state of the river, still receives a portion of the Tigris, and is lost in the marshes west of Kathemein. Its direction by compass was observed to be 244°." The whole of the gardens from Jedidah to Sindiyah are watered by the Khalis canal which runs nearly parallel to the river Diyala. This canal and the Dijeil are the only two of any consideration that the Pachalic can boast of. Beyond Sindiyah the river runs in a more westerly direction and the Nahrwan is known by the name of El Dojm. After passing the Atheim the bottom of the river changed to a hard shingle over when the current ran at the rate of 6½ miles an hour. There were numerous rapids which the steamer could hardly surmount. Her engines appeared partially paralyzed when on the summit of a rapid, and the revolutions decreased from 29 to 23. At the city of Qadesiyeh there are the remains of an octagonal fortress with round towers at each angle between which 16 bastions are placed, 37 paces distant from each other. It is built of sun-dried bricks 18 inches square and 5 thick. There can be no doubt but that the city of Qadesiyeh

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"was one of importance during the flourishing period of the Nahrwan, and probably owes its subsequent abandonment to that vast canal being allowed to fall into decay." Due west of Qadesiyeh there are the remains of a small town called Istabalat near which the Dijeil canal leaves the Tigris. This canal "pursues a SE. direction, and, passing the end of the Median Wall, the villages of Harbah and Sumeichah, is finally lost near the Tarmiyeh water." The Nahrwan has long since fallen to decay. "It can still be traced for three hundred miles, and the ruins of former cities, met with on its margin, attest the flourishing state of Irak during its existence. Vast swamps and extensive lakes, in all probability originally caused by its own decline, surround it in every direction, converting this once luxuriant and highly cultivated province into hot beds of malaria and fever. Its dry bed is now used as a high road by travellers and caravans, on account of the protection afforded in the recesses of its mutilated banks from any of the numerous parties who may be out in search of plunder."

The modern town of Samarrah, which comprises about 250 houses with a Sunni population of about 1,000, is situated in the cliffs forming the left bank of the Tigris, and is encircled by a strong wall built at the expense of the Shiah population of India. It is however a miserable town and owes its celebrity to the tombs of Imam Hussain Askari, and Imam Mehdi, who was the last of the Imams reverenced by the Shiahs. He is said to have disappeared from the earth at this spot, and above 10,000 pilgrims resort annually to his shrine. The town is farmed out by Government at £660 per annum. The report contains two lithographed drawings. To the north of the town there is a spiral tower, about 163 feet in height, called Malwiyeh.

To the N. N. W. of Malwiyeh are the remains of the Khalifa or palace of Motassem. The ruins have vaulted chambers beneath them in which the natives firmly believe a lion holds his court. Many traditions are attached to these subterranean apartments and Beckford's Vathek owes its origin to this locality. W. by N. of Khalifa there are two groups of ruins which at a distance resemble pillars. One group is called "Ashik" and the other "Mashuk." About 4 miles north of Samarrah there is a tumulus called Tel Alij or the "nose bag mound." It in all probability marks the site of the "Ustrina" or pyre upon which the body of the Emperor Julian was burnt previous to the removal of his ashes to Tarsus.

From Samarrah the expedition after passing the ancient "bund" across the Nahrwan arrived at Dur. The village is a collection of miserable houses and is historically interesting,

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inasmuch as at this place on the fourth night after the death of Julian the army under Jovian attempted to cross the Tigris. Lime is found at Dur in great quantities and Baghdad is chiefly supplied from this place. The lime is transported on rafts which differ in no respect from those in use in the days of Herodotus. They are composed of the branches of trees supported on the inflated skins of sheep and are capable of carrying from 30 to 40 tons. Travelling by raft, as a matter of convenience, is far preferable to the land journey from Moosul to Baghdad. But it is attended with danger, for the Arabs occasionally plunder any rafts or passengers which may happen to come within their reach.

At Tekrit there are the remains of a very strong fortress built upon a cliff 130 yards long 70 feet broad and 86 feet in height from the water's edge, but the debris of former buildings have increased the height to 100 feet. "The modern town has two mosques, but no minarets. The streets are kept free from filth, and altogether bear an aspect of cleanliness and order seldom seen in eastern towns. Four hundred matchlocks and guns, which is rather under than above the true amount, can be collected for the defence of the place." The margin of the river from Tekrit to "Khan Kharneineh is now entirely peopled by the Shammar, and all communication between Tekrit and Moosul is in consequence stopped. They have vast herds of camels and sheep, which are seen grazing with their beautiful horses on this rich plain, dotted here and there with black tents affording a pleasing picture of pastoral life, did not the character of the tribe contrast sadly with its primitive habits." After leaving Khan Kharneineh the country on the banks of the Tigris is exceedingly fertile and teems with wild plants of every description. The expedition advanced nearly as far as El Fet'hha, or the opening, where the Tigris breaks through the hills, and then was compelled to return to Baghdad.

A JOURNEY THROUGH KURDISTAN TO THE FRONTIER OF TURKEY AND PERSIA.

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The disputes between Persia and Turkey in 1843, threatened to involve those Empires in a war that would ill accord with the interests of European States. The friendly mediation of Russia and England was however accepted and the contending parties

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