

The Tech.

VOL. X.

BOSTON, NOVEMBER 20, 1890.

NO. 4.

THE TECH.

Published on alternate Thursdays, during the school year, by the students of the Massachusetts Institute of Technology.

BOARD OF EDITORS.

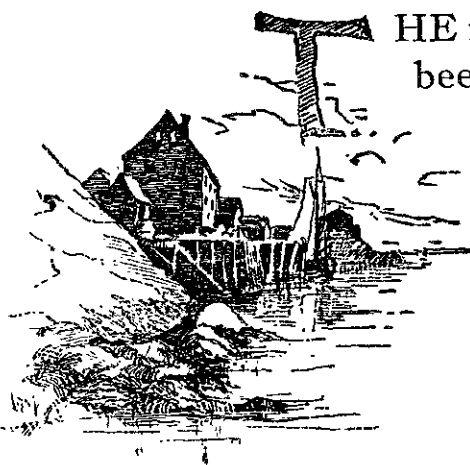
THEODORE SPENCER, '91, *Editor-in-Chief*.
HERBERT EMERSON HATHAWAY, '91.
ALLEN FRENCH, '92.
HENRY NYE WILLIAMS, '92.
ALBERT FARWELL BEMIS, '93.

ALLEN FRENCH, *Secretary*.

HENRY NYE WILLIAMS, *Business Manager*.

Subscription, \$2.00 per year, in advance. Single copies, 15 cts. each.

FRANK WOOD, PRINTER, 352 WASHINGTON STREET, BOSTON.



THE football season has been brought to an inglorious close two weeks before its time, by the decision of the Football Association that the remaining championship games be forfeited.

Under the circumstances, with half the regular players disabled, it seems unreasonable to expect the team to keep the field, although leaving it meant the breaking of engagements with Dartmouth and Bowdoin. The series of defeats and misfortunes which, since the opening of the season, the eleven has had to struggle against, left it without backbone, and the loss of some of the best men was all that was needed to bring about its disbanding. Football seems to have fallen on evil days. The championship season has to be cut short like the game at Andover, for the reason that there are no men at hand in an emergency. For the past three years the beginning of each

season has witnessed an effort to get together a championship team; the attempt has failed more completely each succeeding time. It is but a step further to the giving up of football, and with it all representation in the field of college athletics. The fault lies with the system that the Institute pursues; a system that sees no room for athletics as a means toward the object it is seeking to accomplish. What in other colleges receives favorable consideration, is here set aside as immaterial if it falls outside the lines which were originally laid down for the control of the Institute.

THE Twentieth Century Club is a departure from what have been considered the traditions of the Institute. It has a purpose different from that of any club or organization in the colleges of this country. Nearly every institution of learning, from country academy to university, has its lyceum or athenæum, or debating society, or more ambitious union. The Twentieth Century Club at the Institute is more than a mere debating society; its object is deeper, and its scope wider. It aims to give to the students of the third and fourth year classes practice in argumentative composition and in off-hand debate, to cultivate their reasoning powers, and to accustom them to extempore speaking.

The addresses at the close of each meeting will be by some member of the Faculty, or by some master of the subject from outside the school. They will sum up the arguments *pro* and *con*, and give to the student, whose pressure of work deprives him of political, economical, and social reading, a clear, concise, and forcible idea of the latest thought upon the current topics discussed at the meetings.

In founding this club, Mr. Emery has only continued the work that was begun two or three years ago in changing and developing the English department. From its former position as a thoroughly neglected branch of learning, the study of the allied subjects of literature, economics, and history has risen to almost the importance that it should have in a technical school. This is one of the changes that go toward making the Institute more and more the leading scientific school of the world.

FOR the past few years there has been much dissatisfaction about the amount of vacation that was allowed at Christmas; many vain petitions have been offered to the Faculty for a day or two more at that time, but these requests have always been made too late to be of much effect. This year the subject has been discussed early in the term, and the mass meeting of last week has definitely settled the question. For the next year or two, at any rate, the Holidays will be as heretofore, unless the Faculty take the initiative, and change them of their own accord. It is sincerely to be hoped that no one will attempt this year to get up a useless petition for a longer vacation at Christmas. The men here have had a chance to make a reasonable request for two or three extra days at that time, and have preferred, instead, to take the holidays at Thanksgiving. The matter must be considered as settled, since it was clearly shown that a majority of the students wished to have the vacations remain as they are.

THIS year the interest in musical matters seems to have fallen off greatly. The Glee Club has not been reorganized as yet, the Quintet Club graduated with the class of '90, and up to the present time the various banjo and mandolin clubs have made no noise in the world. If seven hundred students

could support these clubs, the fact that a thousand cannot is not readily explained. Last year, at Class Day, there was only a quartet to represent the musical capacity of the Institute. There must be more than four men here who can sing, and with slight exertion a good-sized Glee Club could be formed.

In past years the Glee Clubs have made the mistake of not giving concerts often enough, and have limited themselves to one or two a year. With an energetic manager and a few more than the minimum number of men necessary, a new Glee Club would have an excellent chance for a long and prosperous career.

IN this issue there is an article by Professor Drown on Course V.; this is the ninth in the series of M. I. T. Departments that was begun in THE TECH last year. Articles on the three remaining Courses will appear during the term, and thus complete the series. These articles are of interest to everyone, but are of special importance to those men who are about to decide on the particular line of study they are to pursue during their stay at the Institute. It is hoped that when the series is completed some way may be found to publish the articles in a more permanent form.

NOW that football playing has been stopped, cross-country running should be brought into more prominence than it has hitherto occupied. As was said in the last number, there is no form of exercise so peculiarly fitted for Tech. men. It takes up but little time, and gives a man just enough exercise to keep him in good physical condition without exhausting him, or making him too tired to work. It is the one kind of exercise to which the gymnasium on Exeter Street is suited.

As to the question of forming a separate Harriers Club, that is merely a question of whether or not it will pay in the long run. If the Athletic Club is willing to undertake the

management of cross-country runs, it seems that it would not be advisable to form a separate organization for the purpose. The Athletic Club is, or should be, on a firm financial basis, and in a Harriers Club there would be no source of income except from assessments on the members. A cross-country club might hold practice runs, and not give prizes, but they would probably have but doubtful success. The question is one to be decided by the men interested in the subject. If a Harriers Club should be formed we wish it the best of success.

WHAT the football team really needs is a professional "coach." All our competitors have men to watch the play and condition of each man, and to organize the work of the team. In this way they have a great advantage over us from the start.

We have never had money enough to hire a trainer at Tech., but with the surplus of this season we shall be able to get one next fall, and thus start on an equal footing with the other colleges in the league.

Next year the team must have longer and more systematic practice. This can be done if the players will only get around promptly and have the trainer on the field to "coach" the team. The training table must be run on a different basis. As it exists now it is a farce. About half the men go to it, and the captain has no means of telling whether the other half train or not. Besides this mere matter of training, there is another advantage of having all the team together at the table. It is an excellent place for the players to become well acquainted with each other, which is quite necessary, and it is a most fitting place to talk over football moves, to offer suggestions, and to get advice.

Next year, though we shall still have many obstacles to overcome, with this year's experience, lots of money, and a good coacher and trainer, there is every reason to believe that we shall then play better football.

COMMUNICATIONS.

The Editors do not hold themselves responsible for opinions expressed by correspondents.

TO THE EDITOR OF THE TECH:—

THE action taken at the meeting of the Football Association last week has caused considerable comment, both in Tech. and from outsiders. All the faultfinders, though, are men unacquainted with the inner workings of the team, and therefore unacquainted with the wretched condition the team was in.

The players of the team have been exceedingly unfortunate this year in getting hurt. Most of the best players have received injuries that render them useless for the remainder of the season. Notably among these is the captain himself, who is suffering with a broken bone in his hand and a severe bruise on both knees. Owing to the disorganized state of things for the first three weeks of the term, all the practice then obtained when the days were longer and we practiced longer, went for nothing.

The practice the team got these last two weeks was worse than none at all. The men got on the field at about five o'clock, and before they lined up it got dark. The team would then play in the dark for about ten minutes. Instead of serving as practice, this sort of thing only aggravated the hurts of the already injured players, and invariably somebody received a more or less serious new hurt. Such suicidal measures were not long in showing their effect.

After the Williams game several of the players informed the management that for personal reasons they would be unable to play out the season. Well, this was the climax, and as a natural consequence the team had to disorganize, as these men could not be replaced.

These, then, are the reasons for forfeiting the two remaining games of our championship series. It is to be lamented that it was found necessary to do so, but with a full treasury and the good support of the school, we can hope for a far better showing next year.

M. '92.

THE Boston Athletic Association will hold a Cross-country Run on Thanksgiving Day. Six prizes will be given. The run is open to Institute men, and entrance blanks may be obtained of the Secretary of the Technology Athletic Club.

A Commonplace Experience.

THEY were not engaged,—that is, it had never been announced. If they were, only the old low-studded parlor with the old badly painted portraits in it knew of the fact, and *it* never told. It had seen too much of life to gossip idly of everything that happened. Let it be distinctly understood, then, that they were not engaged. It is only fair that this be made known at the outset.

And yet Marian never doubted that Ralph would marry her some day. He would have to go one more year to the university, of course; but that was only a necessary misfortune, like the annual departure of the wild flowers, that would soon be past. Then he would come back to her. That was all she knew of human nature.

She did not cry when he went away,—that is, not until he was gone. He had said once that he hated to see girls cry. After he left she went into the old familiar parlor, and looked at the old familiar things there. She tried not to let the tears come,—it was so weak to cry. It may have been only a rain-drop (it was pouring outside) which had leaked through the sash that fell with a tiny splash on the window-sill. There was no way of telling if it were salt. She sat down in the window-seat and looked wearily out at the storm. The wind had blown one of the vines from the trunk of an oak on the lawn, and it was hanging helplessly in the gale. But that has nothing to do with the story.

If the fall passed a little less rapidly than usual; if the dry leaves tossed more desolately; or if the snow when it came seemed drearier,—I suppose it was unnoticed by most of the world. It was none of the world's business. If his letters, when they did come, were largely of the "too-busy-to-write" kind, of course he really was working hard, very hard; and she answered them, as she perhaps unconsciously sometimes wished he had written them, affectionately and at length. Anyway, he was coming home at Christmas, and

it would do no good to complain. Such natures never do.

Only she sat alone and still for some time one day after the postman came, with an open letter in her hand; in fact, she did not move until her mother, coming in, and not seeing the missive, had asked her several times if she were ill. Then she got up, a trifle pale, perhaps, and put the note (it was only a few lines) with the little pile of envelopes addressed in the same hand. Ralph was going to spend the holidays in New York with his room-mate, Anthony McGregor. That was all.

Time, that inexorable something which no man can define, even as some mighty river, will pass on whether we be happy or sad, young or old: only if we be young and happy, he seems to be borne on golden wings; if we be old and sad, we feel that he is slowly and painfully dragging all the ills that are in the world after him; and if we be young and sad, we care not, for the hour, whether he move at all.

Perhaps Marian began to believe that Ralph cared less for her now than he did four months before. I do not assert positively that this was so; and I may be doing her an injustice by suggesting it, for a true woman is slow to doubt a lover. Certainly he wrote very seldom, but then, he was preparing his thesis. Yet it might be observed that she was a trifle quieter, a little less lively, than in the old days. She did not go out much now, and when callers came she was usually excused. I suppose the great oaks on the lawn helped to comfort her, they were so strong and independent; anyway, she used to sit for hours in the parlor, gazing steadily out of the window. The hanging vine had never been tied up.

As Easter approached, a faint glow of color reappeared in her wan cheeks. The doctor said it had a foreboding tinge, but physicians are sometimes mistaken. Ralph came home on Thursday, but he did not call that night.

He would drop in and see her the following afternoon. Only Friday afternoon Marian happened to be out driving. He had not told her just when he was coming home. Of course he would call again before he returned to the university. But his vacation was so short (only ten days), and he had so much to attend to, that he found himself back at Newbridge without having seen her. Well, he would write soon.

When he found time to write, however, he had some news which may have been quite unexpected in at least one household. Marian was a little surprised one morning to find a letter addressed in a certain familiar hand. Nowadays she had rather given up expecting him to write. Yet I feel sure, from the sudden, sharp, drawn expression of her features, that she was still more surprised at what she read inside. Ralph had honored her ("as an old friend, you know") by informing her, even before his own family, of his engagement to Miss McGregor.

The doctor must have been right this time, for the faint flushes in Marian's cheeks became brighter and more frequent as the weeks passed by. The slight cough which she had had much of the winter grew harder and rougher. There was no use trying to conceal the fact; she was only another victim of that dread disease, consumption. That is what the doctor said, and we who are unskilled in medicine, must not ask him what caused the disease. That would be foolish, and he would doubtless reply, "The hard winter, of course." And, all things considered, there might be more truth in this than we at first imagine.

There is only one more chapter. Marian lingered till Ralph was married, in June. Then she died. Ralph was on his honeymoon, and perhaps did not hear of her death immediately. Anyway he was not at the funeral. It was too happy a time for him to be thinking of anything so dismal as death.

That is all. There are few people who

will venture to say that Ralph Vincent had anything to do with Marian Lovell's death; and yet I would like to know what charge he will have to answer to when our records are finally examined.

THE Freshmen held a meeting Monday, November 17th. Although the meeting was called to elect permanent officers, this election was deferred until after Thanksgiving. After the meeting, the members of the Athletic Club assembled and elected Clarke member of the Executive Committee from '94.

DURING the past year members of the present Senior and Junior Classes have been considering the advantages which might arise from the study of questions of the day. At the beginning of this term Mr. Emery, Instructor in English, decided, if possible, to form the students into a club for the discussion of such questions. Therefore, a meeting was called for November 3d, which was addressed by Mr. Emery concerning the purposes of such an organization. A club was then formed, with the following officers: W. Z. Ripley, '90, President; J. Swan, '91, Vice-President; F. H. Meserve, '92, Secretary.

ON November 10th the constitution of the "Twentieth Century Club" was formally adopted. Meetings will be held every two weeks, when four regularly appointed students will speak on some question, there being also a chance for general debate. Following this, those present will be addressed by some master of the subject under discussion.

THE Twentieth Century Club held a meeting Monday evening, November 17th. The subject for debate was, "Resolved, That immigration should be restricted." Affirmative, F. C. Blanchard, S. S. Parrish; negative, O. Allen, G. N. Calkins. Both sides were well discussed. President Walker then talked on the subject for half an hour. There were about one hundred and fifty present.

M. I. C. DEPARTMENTS.

V. Chemistry.

It would surprise most persons to be told of the large number of manufacturing industries which to-day find use for chemists. Leaving out of consideration those works which are distinctively chemical in character, and in which all the processes are conducted strictly on a chemical basis, it may be said that we can more easily enumerate those manufactures where a chemist would be superfluous, than those in which he would be helpful. The utilization of the products of the vegetable, animal, and mineral kingdoms involves chemical phenomena at every step; the metallic ores, petroleum, clay, coal, wool, hides, fats, vegetable fibres, and extracts, gum, sugar, starch, oils, etc., are the raw materials for manifold manufactures which are successful in proportion as they are directed by chemical knowledge.

In most of the useful arts empiricism has preceded science, and many of these arts have attained a high state of perfection without any knowledge on the part of the artisan of the nature of the processes involved. Progress under these conditions is slow, and based on costly failures. Centuries ago steel for tools and weapons was made on a small scale in certain favored localities, which in quality and finish cannot be to-day surpassed. But it has only been within the last few generations since the chemist explained the true nature of steel, that the economical manufacture on a large scale, and in infinite variety of composition and character, became possible. The marvelous development of the steel industry in the last twenty-five years is based on chemical knowledge and research. Similar instances could be adduced from many other industries. The progress in the manufacture of colors for dyeing and printing is a no less remarkable illustration of the application of chemical research to an industrial problem.

In the arrangement of a course of chem-

ical study in a school which, like the Massachusetts Institute of Technology, bears a close relation to the useful industries, the kind of work which the graduates will be called upon to perform should be kept in mind. This will be, in all likelihood, the controlling of special branches of manufacture by chemical analysis, and—what is of far greater importance—the improvement of the manufacture in efficiency and economy by new devices and processes. This is the true career of the chemist in the useful arts; namely, as a seeker for new and better methods whereby the products of industry are improved in quality and cheapened in cost.

It is clear, therefore, that the instruction in a school of this character should be as broad and deep as it can possibly be made, since one can never tell what department of chemistry will be the most helpful with fertile suggestions. It is a grave mistake to suppose that a technical school should teach the practice of the art itself. This is fatal to progress. Illustrations of practice are valuable just so far as they familiarize the student with existing apparatus and processes, emphasize chemical principles, train the powers of observation, and give material for thought and invention.

The chemical course in the Institute has been planned primarily to give the student a thorough knowledge of general chemistry and chemical theory upon which all future progress must rest. In the lectures on Industrial Chemistry the details of the great manufacturing industries are described, with the chemical facts and principles on which they are based. This course is accompanied by laboratory practice, in which the student makes various products on a considerable scale from raw materials. Dyeing and bleaching, than which no department of applied chemistry is more important, receives extended illustration in the laboratory for textile coloring. In the course in Sanitary Chemistry attention is mainly directed to the examination of air and water, and a few food products, such as butter and

milk. The importance of good air, good water, and good food in the maintenance of good health needs no comment. Organic chemistry, which has attained such a wonderful development in recent years, is the limitless field into which so many modern chemists enter—both those who pursue the subject from the standpoint of pure science and those who would seek their fortunes in the discovery of new and useful products. It is taught throughout the fourth year in the classroom and in the laboratory. The characteristic reactions and operations which differ in many respects in conception and execution from those in inorganic chemistry, receive full illustration.

Through all these branches of chemical study and research runs analytical chemistry—qualitative and quantitative—which furnishes the guide to all industrial operations, as well as the proof of their success. Its underlying principle is the production of substances of known composition and ascertaining their weight; but its methods are manifold, and apply equally to solids, liquids, and gases; to mineral, vegetable, and animal matters. Analytical chemistry may indeed be considered a department by itself, independent of the arts and manufactures. Chemists are now largely employed by the consumer as a check on the manufacturer. Modern railroad practice is based largely on analytical chemistry. It is the chemist who specifies the composition of the steel for rails, for springs, and for constructions. He decides whether the oils for lighting and lubricating are pure and suitable for the purpose; whether waters are fit for use in boilers; whether the paints and varnishes are what they pretend to be; and whether the plushes for car seats are dyed with a color which will not fade. This chemical supervision on the part of large consumers of the greater part of their supplies, renders it all the more necessary for the manufacturer to have the best chemical knowledge obtainable in conducting his business.

Any account of the Chemical Department

of the Institute would be inadequate without special mention of the laboratory instruction in general chemistry which is given to all students during the first year. The origin and character of this instruction has been so admirably described by Mr. Augustus Lowell in his Commemorative Address last June, that I give it in his words.

“Almost at the very outset, a long step forward was taken in the establishment of a laboratory of general chemistry. Up to that time general chemistry had been taught wholly by means of text-books, or by lectures with experiments by the lecturer. The student's part was only to look and to listen, and learn in this way what he could. It was not until the student was put into the analytical laboratory, and took the retort into his own hand, that he did or discovered anything for himself. Under the inspiration of Professor Rogers and the enterprise and administrative skill of Prof. Charles W. Eliot and Prof. Frank H. Storer, a laboratory of general chemistry was established, and the pupil from the first day of his chemical studies was set to teach himself. This was no analytical laboratory. It was simply designed as a means of illustrating, emphasizing, and supplementing the instruction of the lecture room in regard to the nature of chemical action and the characteristics of the principal elements. The student was not told what he should find. He was told to do something and note what occurred. He was thrown upon his own faculties of observation and reflection. He learned to know himself, and to measure his own power, and he acquired ease and accuracy of manipulation by practice. So far as known this was the first laboratory of such a character set up in the world. Certainly it was the first one instituted in the United States for the instruction of considerable classes of pupils. The publication of Eliot and Storer's Manual, designed for students taking this course, marked an epoch in the history of education.”

THOMAS M. DROWN.

College Notes.

Smith College has 551 students.

The average weight of the Andover team is 162 pounds.

Candidates for the Yale 'Varsity began rowing last week.

The greater majority of Exeter Seniors will enter Yale next fall.

Harvard has a doctor in constant attendance upon her football team.

Seats for 18,000 people have been provided for the Yale-Princeton game.

The gymnasium at Amherst has been provided with a new baseball cage.

The cost of a seat on the "bleachers" for the Yale-Princeton game will be \$1.00.

In the final game for the class championship at Harvard, '91 defeated '93 8 to 6.

It is expected that there will be 2,300 names on the Harvard Catalogue this year.

The Advisory Committee of Columbia College appropriated \$1,100 for football.

A general athletic team, composed of college graduates, has been formed in Japan.

Representatives from thirty-six different States are in the Freshman Class at Yale.

A memorial window has been placed in Memorial Hall, Harvard, by the class of 1859.

An effort is being made at Yale to revive the famous old dramatic club established in '85.

President Dwight of Yale is giving a series of talks on college life to the Freshman Class.

Squires, captain of the Exeter team, has resigned, and Phelan has been elected to fill his position.

Cambridge Latin School leads the Boston Interscholastic League with three victories and no defeats.

The Catholic College of Holy Cross held a successful field day at Worcester about two weeks ago.

The largest football score made this season is that of Williams vs. the Laureate eleven of Troy, 142-0.

The report of the treasurer of the Harvard Rowing Club shows a surplus in the treasury of \$1,142.71.

Mr. Lathrop, the Harvard trainer, has had over a hundred men running under his direction this fall.

The Williams-Amherst Freshman game has been postponed until after the college championship series.

The Freshman Class at the University of New York won the recent cane rush by a score of 20 to 7.

The following have made the most touchdowns this year for Harvard: Lee 15, Lake 12, and Fearing 10.

There were 166 entries for the fall handicap games at St. Paul's School, four of the school records being broken.

Henry W. Sage has added \$200,000 to his gift of \$60,000 to establish a department of philosophy at Cornell.

Football in any form has been strictly prohibited by the authorities of the University of Heidelberg, Germany.

Wellesley students are trying to raise \$100,000 dollars for a new chapel; \$5,000 has already been subscribed.

During the fifty-three years of its existence the University of Michigan has granted degrees to 10,449 persons.

The University of Pennsylvania defeated Harvard in football in 1884. It has never beaten Princeton or Yale.

The number of victories in the Yale-Princeton series is officially announced to be a tie between the two colleges.

Bowdoin forfeited the championship game with Amherst, owing to the fact that more than half of the team were disabled.

Hayden, Princeton's left-end rusher, broke his collar-bone during practice, and will not be able to play again this season.

The Chemical Department of Harvard publishes more reports of original research than all other colleges in the United States combined.

The majority of college professors in the United States receive salaries under \$3,000, while not one receives over \$5,000.

The new building at St. Paul's School is made of brown stone, brick, terra cotta and iron. It is three stories high, and cost \$50,000.

Wendell Baker, Harvard '86, ran 200 yards at the Berkeley Oval, Saturday, Nov. 8th, in 20 seconds, thus breaking the world's record.

Captain Poe of the Princeton eleven broke his nose in the game with University of Pennsylvania, and probably will not play again this season.

Owing to the fact that so many of the oarsmen of Columbia are playing football this fall, it is probable that the annual fall regatta will not be rowed.

The Harvard Glee Club has accepted the invitation to attend the Assembly at Union Armory, Springfield, the night previous to the Yale-Harvard game.

The most handsomely endowed college in this country is Columbia, with Harvard second. Their endowments are \$9,000,000 and \$6,853,000 respectively.

The committee appointed by the Yale University nine to award the cup for the best base stealing last season, have decided to present it to Mr. H. W. Cushing, '91.

Holcomb, the Yale centre-rush, made a bet in his freshman year that he would get on the 'Varsity eleven before he finished college, and has succeeded in his last year.

The Class of '94 at the various colleges is as follows: Yale 410, Harvard 400, Princeton 260, Lehigh 122, Dartmouth 120, Brown 112, Univ. of Penn. 100, Amherst and Williams 75.

The entering class at the Columbia Law School numbers 307, the School of Political Science has 175, and the newly established School of Philosophy has 55.

The Trustees of Cornell have voted to appropriate \$80,000 for a new agricultural hall. All the various departments of the School of Agriculture are to be gathered into the new building.

In the Hare and Hounds Run at Princeton, Hallock, '91, and Aiken, '92, who were the hares, ran four miles in thirty-one minutes, and twenty-one finished out of the twenty-three who started out.

The \$100,000 raised for a fund to establish a medical school for women at Johns Hopkins will not be touched until by additions and interest it has reached \$500,000, when the new department will be instituted.

At a recent political meeting in Ohio, which Speaker Reed was to address, the students of the University of Wooster created a sensation by appearing in a body, each provided with a gavel and block for applauding.

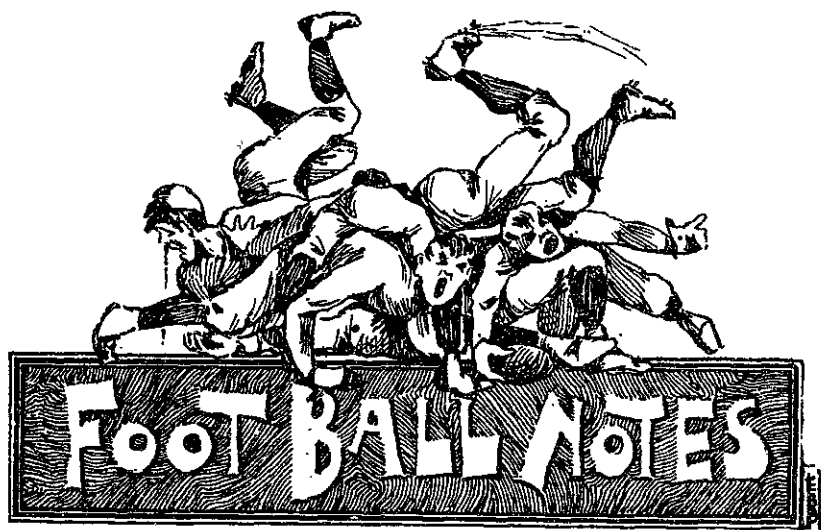
The flag offered by the King's Daughters of Harlem to the college which received the greatest number of votes, was won by the Normal College, having 307 votes, while Princeton came next, with 279.

At the Berkeley Oval, Wednesday, Luther Cary tried to break the world's amateur records for the 75, 110, 120, and 125 yards. He only succeeded in tying the 110-yard record, doing it in 11 1-5 seconds. The track was in perfect condition.

The Amherst Catalogue shows that President Gates, the present incumbent, is the sixth president; the whole number of alumni is 3,319, one third of whom have been clergymen, 111 foreign missionaries. The college is now in its seventieth year.

Cornell's trip resulted in their scoring 68 points to their opponents' 117. The Amherst game was won by Amherst, 16-0; the Harvard game by Harvard, 77-0; the Wesleyan game by Wesleyan, 6-2; the Trinity game by Cornell, 26-0.

Owing to the few clubs which have entered the Amateur Athletic Football League thus far, the Union has been compelled to postpone the closing of entries until the 9th inst. The clubs which have entered teams are the D. A. C. of Detroit, Schuylkill Navy A. C. of Philadelphia, and the M. A. C. of New York.



Andover, 24; Tech., 0.

THE eleven went to Andover, Wednesday, November 5th, and played its second game with the Phillips Academy team. Only one half of forty-five minutes was played, on account of Tech.'s running short of substitutes to take the places of the disabled men.

Tech. won the toss, and took the upper end of the field. Andover started off with 15-yards gain on a V, and followed it up by a succession of good rushes. Woodruff made the first touch-down. No goal.

Tech. had the ball on the 25-yard line, but it went to Andover on four downs, and by the aid of good blocking another touch-down was scored. No goal.

From the 25-yard line Tech. made some good rushes, but was soon forced to kick, giving the ball to Andover about half-way from centre, and two downs were enough to give Andover another touch-down. No goal.

After several short rushes Andrews took the ball and made a gain of 20 yards round Andover's left end. Tech. kicked after the third down and got the ball on the 35-yard line from Andover's fumble. The ball went to Andover on the fourth down, and Knapp tried for a goal from the field but was unsuccessful, Tech. getting the ball on the 25-yard line. Sutton was hurt and Weis took his place. Soon afterward Andover got the ball and made another touch-down, from which Knapp kicked the goal.

From the centre, Andrews made a long punt to Andover's 10-yard line, and Tech. got the ball. Tech. was unable to keep the advantage, however, and the ball went to Andover, who rushed it down the field for another touch-down and goal. At this point Andrews and Nash were injured, and were replaced by Johnson and Wardner. Tech. made a few good rushes, but Wardner was hurt, and, as there were no substitutes available, the game was called. Score, 5 touch-downs and 2 goals by Andover.

The teams lined up as follows: Andover—rushers, Hinkey, Colt, Taylor, Perkins, Ogilvie, Townsend, Cox (Foster); quarter-back, Sheffield; half-backs, Woodruff and Hopkins; full-back, Knapp. Tech.—rushers, Noblitt, Weis (Nash), (Hammond), Beattie, Hammond (Johnson), Brooks, Vorce, Burroughs; quarter-back, Clark; half-backs, Sutton (Weis), Chase (Wardner); full-back, Andrews (Chase).

Williams, 36; Tech., 0.

THE championship game with Williams was played Saturday, November 8th, and lost by 36-0. The defeat was due to better team work at all points by Williams, although the absence of several of Tech.'s best players probably had considerable effect in increasing the score.

Tech. put the ball in play at 2.30 P. M., and Chase and Clark made eight yards, and Crane made a long punt. A gain of twenty yards by Garfield followed by ten and five by Streeter brought the ball back to centre, where Williams gained five yards on interference. The ball changed hands twice near the centre for interference, and then Garfield and Street worked the criss-cross, and the latter made fifty yards and a touch-down. Brown kicked the goal.

Tech. had gained about seven yards from centre before the ball went to Williams for interference. Streeter made a fine rush of

thirty yards, and Cluett made a touch-down. No goal.

Clark made a good rush of fifteen yards from the centre, and Crane, Weis, and Andrews got the ball to the 25-yard line. Crane punted, and Hall downed the ball at the 5-yard line. Tech. was pushed back ten yards, and Williams lost the ball on a foul. Crane made a punt, and Garfield got the ball and made a pretty run of forty yards, being tackled by Chase just as he crossed the line for a touch-down. No goal.

Tech. continued to play a kicking game as before, and the ball was punted to Williams' end of the field. The Williams backs were able to make five yards at a time, and got the ball into Tech.'s territory, where it remained some time without any decisive gain for either side, although Williams had generally the advantage. A few minutes before the end of the half the Williams' backs worked the criss-cross again, and Streeter made a touch-down, from which Brown kicked the goal. Score, 20-0.

Williams made ten yards at the beginning of the second half before J. Garfield was laid off for Rogerson. Two more rushes brought the ball to the 10-yard line, and Rogerson made a touch-down, Brown kicking the goal.

When the ball was put in play things went as before. Tech. had the ball several times, but was unable to keep it; and Williams made up the ground lost by Crane's fine punting by rushes which the Tech. team seemed unable to stop. Streeter made a rush from centre to the 25-yard line, but was well tackled by Clark, which did not prevent Rogerson from making another touch-down. No goal.

For the remainder of the half Williams played a rather slow game. Highlands was disqualified, and Harvey went on as right guard. Andrews made some good rushes, but did not get within twenty yards of Williams' goal-line. Near the end of the half Rogerson was disabled after making a brilliant

rush of forty yards, and A. Garfield took his place. Williams got within ten yards of the goal-line, and gained five yards for offside play, and Streeter was pushed over the line for the last touch-down. Brown kicked the goal, making the score 36-0.

The teams lined up as follows:—

Williams—rushers, Lafayette, Pearson, Hotchkiss, Allen, Sawtelle, Cluett, Wentworth; quarter-back, Brown (Capt.); half-backs, J. Garfield, Streeter; full-back, Hall. Tech.—rushers, Vorce, Look, Highlands (Capt.), Hammond, Beattie, Weis, Noblitt; quarter-back, Clark; half-backs, Andrews, Chase; full-back, Crane.

Referee, Howland, of Yale; umpire, Morgan, of Trinity.

Ninety-three, 8; Ninety-four, 4.

THE annual Sophomore-Freshman football game took place last week Wednesday on the South End grounds. The game was a very close and exciting one, the two teams being very evenly matched. Notwithstanding the bad weather, there was a goodly number of upper classmen present.

Play commenced shortly after 3.30, '93 having the ball. They made good advances, and gradually neared '94's goal. Dearborn crossed the line, and made the first touch-down for '93. Andrews failed to kick a goal. Score '93, 4; '94, 0.

'94 now worked the V effectually. Batcheller was generally given the ball, and pulled forward, making good gains. Fifteen yards were made on the first V. Clark made a gain of five yards. '94 was given five yards for the offside play of '93. '93 was unable to hinder their opponents' advance, and Batcheller soon crossed the line with the ball. Story failed to kick a goal. Score, 4-4.

'93 made fifteen yards on a V from centre, and by good rushes by Whiting and Dearborn they soon had the ball at '94's 15-yard line, but lost it on four downs. '94 was un-

able to get through '93's rush-line, and lost the ball on a fumble. '93 sent the ball forward through the centre, and had it within one yard of '94's line when time was called, thus ending the first half.

'94 made eighteen yards on a V from the centre, and made good advances until '93's 20-yard line was reached, when they lost the ball on four downs,—'93, however, being forced to kick. Batcheller caught the ball, and made good gain before he was tackled. Vorce was disqualified, being replaced by Lord.

'94 advanced to the centre, Clark making twenty yards on a criss-cross. The ball was now on '93's 20-yard line, but was lost to '93 on a fumble, and the latter made a gain of twenty-five yards. Andrews punted to Batcheller, who then gained thirty yards by a criss-cross. '93 secured the ball on a fumble, and Andrews and Whiting made a gain of twenty-five yards for '93. The ball was now given to Simonds, who broke through the '94 line, and ran forty yards, making the second touch-down for '93. Andrews failed in a try for goal. Score 8-4.

'94 made thirty yards on a V from centre. '93 secured the ball on a fumble, and made good advances toward '94's goal. Time was called with the ball on '94's 20-yard line.

The teams lined up as follows:—

'93—rushers, Vorce (Lord), Boyd, Brooks, Taintor, Beattie, Simonds, Burroughs; quarter-back, Noblitt (Capt.); half-backs, Whiting, Dearborn; full-back, Andrews. '94—rushers, Gilbert, Rogers, Cromwell, Johnson, Nash, Hazleton, Green; quarter-back, Clark (Capt.); half-backs, Stearns, Story; full-back, Batcheller.

Referee, Hamilton, '91; umpire, Kales, '92.

Directly after the game the two classes formed for their annual rush,—'94 in a wedge guarding the "cane," a stick about five feet long and two inches in diameter; '93 in a solid column eight men broad. Moving slowly toward each other they met in the

centre of the field, and for ten minutes pushed and wrestled. When time was called all men who had no hold on the cane were hauled off, and formed into a ring. The men who had a hand on the cane were then counted, and it was found that '94 had won by a single man,—the score being fourteen to thirteen.



'93 was unable to get around Gilbert's end. Dearborn, Whiting, and Simonds made good rushes for '93.

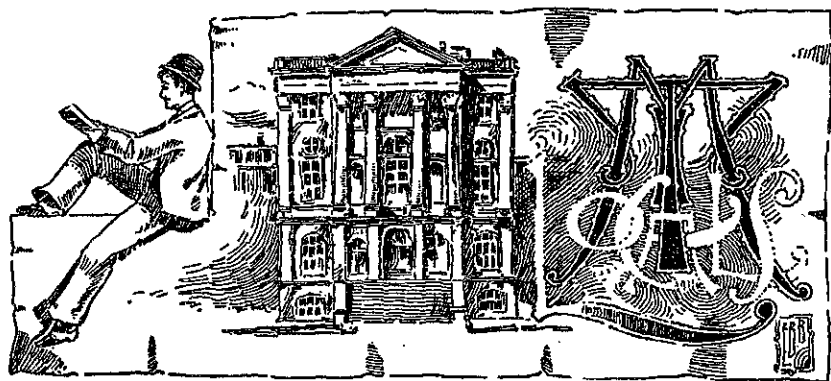
The rush, as a rush, was rather a failure. Still, there was fun and work for everybody.

Crane, '92, kicked six goals for the B. A. A. in their game with the New York Athletic Club.

A great deal of real estate changed hands at the Freshman game. Large exchanges in personal property have also been reported.

The team has played nine games, winning four of them. Points scored by Tech., 91; points scored against Tech., 127. Excluding championship games, Tech. scored 87 points,—having 53 points scored against her.

A mass meeting of the students was called on Monday, November 10th, by the Football Association, for the consideration of matters pertaining to the scheduled Dartmouth and Bowdoin games. The team was reported as being in a very poor condition, because of the large sick list. A slight discussion followed, after which it was voted to cancel the games with the above colleges, making a just settlement with the same. This will probably leave a small surplus in the treasury with which to begin next year.



No more football at Tech. this year.

The tennis courts will soon be abandoned.

At the rush: "Five minutes more!"

The Juniors have begun Applied Mechanics.

This week is the star theatre week this season.

The Senior Mechanicals have commenced metal turning.

A large number of old Tech. men were present at the Williams game.

Mud was at a premium at the South End Grounds.

Several exhibits at the Mechanics' Fair are in charge of Tech. men.

'94 claims to have had fourteen hands on the cane at the end of the rush.

The team has indeed had hard luck this year from partial referees and a long sick list.

With all the banjo-players in Tech. why cannot we have a banjo club?

The Junior Civils have begun Applied Mechanics.

Mr. E. Nickerson, formerly of '92, is in the employ of the A., T. & S. F. R. R. at Topeka.

Now begins the age of theatre parties, dinners, and balls.

President Walker was an interested spectator at some of the games of the tennis tournament.

The Third Year Civils are surveying a railroad line from Crescent Beach to Woodlawn Cemetery.

Mrs. King, of the Lunch Room, has been supplying meals to those occupied in the boiler test.

'93 has a second yell, which is as follows: Rah, rah, rah, rah, rah, '93, '93! Rah, rah, rah, rah, rah, Tech. '93!

The Civil Reading Room is now open for the year, and may be used by any one in that department.

Only the singles have been played off in the tennis tournament. The championship was won by M. L. Johnson, '94.

There was some talk of putting a group of the Co-eds in "Technique." This scheme has been very wisely abandoned.

One of the members of the class of '94 asked at the chemical supply room for a small flask of two hundred and fifty litres capacity.

Professor: "I don't quite follow your demonstration, Mr. M——."

Mr. M——: "Well, I'll draw you another figure and make it plainer."

On Tuesday, November 11th, a meeting of '94 was held in Huntington Hall to adopt a constitution and decide on a class cheer. Mr. Stevens presided.

Professor Geo. F. Swain of the Institute was elected a member of the "Architekten und Ingenieur Verein zu Hannover" on October 8, 1890.

Another Freshman who has had trouble with his Bunsen burner, has asked at the supply room for a new one that did not have so many leaks in the sides.

The '91 Mechanicals began their work in boiler testing last week. They have recently finished a course in mill machinery and weaving.

An explosion took place during a chemistry lecture last week. Mercury was scattered in every direction, but nobody was seriously hurt.

Overheard at a 'Varsity game. First Mucker: "Say, why aren't those fellows playing?"

Second Mucker: "Oh, those are substitutions."

A society has been formed by the Senior Chemists and Chemical Engineers for the discussion of questions in applied chemistry. The President is E. Cunningham; Secretary, J. F. White.

At a meeting of the Class of '91 last Saturday a committee for class-day nominations was appointed; also one for arranging for class photographs.

There was a meeting of the Architectural Society on Friday, November 7th. Professor Chandler was present, and gave a short talk. He is thoroughly in sympathy with the society, and the work it is doing in that department.

Overheard in the Freshman lab.: "Hang this way of testing. I've been rubbing a strip of litmus on the outside of this bottle of chlorine for half an hour, and the color doesn't change a bit."

The annual exhibition of the Photographic Society will be held during the second week in December. Beside the usual awards, a special prize is offered for the best set of six views in or about the Institute buildings.

Mr. L-b-t (mistranslating): "The historians say, that after the execution of Kouradin an eagle descended swiftly from above, picked up the body and flew quickly away with it."

Dr. D-pp-d: "Pity the eagle did not come sooner; might have saved Kouradin."

The petition of '94 to have the examination in Solid Geometry two weeks after the last recitation, has not been granted. Twelve rooms would be necessary for the examination, and thus the only time that it could be held would be Saturday afternoon.

Professor Schwamb has been quite ill, and will be unable to return this term. Professor Lanza will have charge of Mill Engineering, and Professor Peabody of the shops in his absence. Professor Müller will have charge of Machine Design.

On Friday, November 14th, there was held a mass meeting of the students in Huntington Hall. The object was to take some definite action in regard to the scheduled vacation of two days after Thanksgiving. Several views were expressed in regard to changing these two days to Christmas. A standing vote, however, carried the day for conservatism, and things will remain as they are.

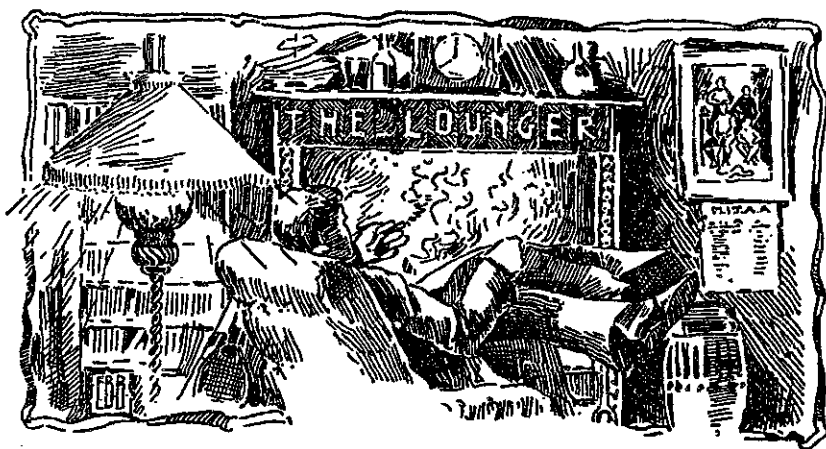
Those who are fond of architectural designs would do well to see the last one finished by J. M. Vance. The design is one for an "Amphitheatre for the Study of Natural History." It took all three first mentions, and is much above the usual standard of the drawings.

Following is an approximate list of the students this year: Fourth year students, 111; third year students, 139; second year students, 156; first year students, 253; special students, 270; students for advanced degree, 4; total, 933. This includes 37 graduates of other colleges.

The first architectural designs for this year have been finished, and were on exhibition last week in Room 14, New Building. The following mentions were awarded: Design for an "Amphitheatre for Study of Natural History" for fourth-year regular, and third-year special, students,—first mention, 1st, J. McA. Vance, 2d, B. P. Jenks, 3d, W. H. Lawrence; second mention,—2d, J. A. Meyer, Jr., 3d, A. Walker; third mention,—3d, E. W. Donn. Design for an "Ornamental Fountain" for third-year regular and second-year specials,—first mention, 1st, G. H. Ingraham, 2d, F. E. Perkins, 3d, C. E. Fox; second mention,—1st, F. P. Smith, 2d, Forsythe, 3d, B. F. Jones; third mention,—1st, H. C. Waterman, 2d, L. Plack, Jr., 3d, E. P. Whitman. Also a sketch problem of an "Observatory Tower," in which the following mentions were made: first mention,—3d, J. A. Meyer, Jr.; second mention, 3d, J. M. Vance.

Last Saturday the tennis courts were closed for the year. On the whole, the season has been very successful; the tournaments were interesting, and many of the contests very close. '94 carried off her share of honors, winning first place in both singles and doubles.

November 11th the Electrical Club visited the experimental plant of the Porte-electric Co., in Roxbury, where a general explanation of the system was given by Mr. Williams.



If the Editors of "Technique" intend to bring out a history of the Freshman-Sophomore game in their forthcoming volume, it is to be hoped that they will not forget a chapter on noises. Besides the firecrackers, toy pistols, and rattles of '93, and the shrill, childish treble of '94, across the field there were the yells of both sides; of the Juniors, and even those—but oh, how feeble!—of the Seniors, from their corner near the gate. The two lower classes had got up some cheers for the occasion, but the good ones lacked originality. That was not the fault with '94's first attempt at a class cheer. It comes nearest to the long yell of '92, but outquacks that by fifty per cent, while there is a pretty little stutter of Tech-Technology near the end that betrays the Freshman as yet unfamiliar with the place to which fate has consigned him. The other offering in this line by the Freshmen was plainly stolen thunder from a Cambridge armory,—three prolonged shouts of Ninety-four! Ninety-four! Ninety-four! of which the first was a roar, the second a bellow, and the third little better than a groan.

The Sophomores had a very good yell, appropriated from Amherst, with slight variations. They did not quite have it by heart, though; and at the moment when all should have been still, some one was pretty sure to start out with a double-forte Rah, that spoiled the effect and made the Freshmen laugh.

But all these cheers were nothing compared to the chorus of shouts, screams, hoots, yells, screeches, and hurrahs that went up when '94 made its first touch-down. Even the little muckers who came in through the fence were carried away by the excitement, and believed themselves Freshmen. Joy such as that had to be short-lived; the first touch-down was also the last; '93 went one better and took the game.

But the rush was so gentlemanly, such a well-ordered affair. The smashed hats, the torn coats, the black eyes,—how can they and the rush be linked together as cause and effect? It was so dark, too, when

'93 advanced across the field, that no one could have seen any fighting without being near enough to take a hand in it. If there was any scrapping it was of a highly inoffensive kind, and none of the sanguinary, inexcusable work that other classes have indulged in. The verdict of the spectators was that there is no harm in a rush—when you are out of it.

Ninety-three never marched with more military precision on parade in the Exeter Street barracks than when they formed in double column of fours and proceeded to trample on '94, and tear the cane, that manly emblem, from their baby fingers. But how and why was it that they were so soon back again by the bleaching boards on their own side of the grounds? It was not '94 that did it! It was a tactical manoeuvre calculated to deceive the Freshman into a rash over-confidence. But the movement which was to have followed it, and have left '94 literally with no ground to stand, was not successful, because a few Freshmen did not understand the game according to '93's ideas. If the reserve forces of the Sophomores who hung on the outskirts of the battle had but joined in, who knows what might have happened. At any rate, after all was over, '93's flag still waved, and '93 was able to put in a strong claim to have won everything.

It seems that there was no need for a mass meeting after all, so large a majority of the students being in favor of the Holidays as they are, but it was a good thing certainly to get together as much as half the school for any purpose whatever. There was little discussion, as is usual when Institute men come together, the thoughts of those present being mostly thoughts without words. The Freshmen were much impressed, however, by '92's eloquence. Not '92, however, but its mouthpiece did the speaking. He rose, and thrusting one hand into his pocket, and with the other smoothing his fevered brow, he sawed the air with his voice. "Who is that Johnnie?" said a guileless '94 man. "That, my dear child," said his friend and mentor, "is a character 'whom not to know argues yourself unknown.' That is the man who found the Institute as McAllister found society, although he has not ventured into print with his opinions. Listen to the applause when he takes his seat; that is popularity! You can go to dinner, now; the motion will be lost." And so it was; the Thanksgiving turkey scored another triumph, and effectually cooked the Christmas goose.



A DILEMMA.

Here's such a dilemma!
 Now, what would you do?
 I am quite fond of Emma,
 But then I think Sue
 Likes me better than Emma.
 Now, here's a dilemma,
 For, you see, I like Emma.
 Come! what would you do?

Would you make love to Sue
 And so solve the dilemma?
 Notwithstanding that you
 Would much prefer Emma?
 Would that really do
 Both for you and for Sue?
 No—it wouldn't; that's true.
 That's a much worse dilemma.

But supposing that you
 Were rejected by Emma,
 Having first jilted Sue—
 What a frightful dilemma!
 You wouldn't have Emma,
 Sue wouldn't have you!
 Behold the dilemma!
 Now, *what* would you do?

—Trinity Tablet.

LES CHAPERONES.

The pale moon shone bright
 Through the summer night,
 And we on the beach alone
 Hid, sheltered from sight
 By a great rock's height,
 While the moon played chaperone.

The wind to the land,
 And down on the sand
 The billows fell with a moan,
 And her wavy hair
 Swept her cheek so fair,
 While the moon played chaperone.

In the depths of her eyes
 The soft moon lies;
 Her fingers entwine my own.
 And the time flew fast
 Till we stood aghast,
 While the moon played chaperone.

But since that night,
 When the moon is bright,
 We never go out alone.
 For the hour was late
 When we reached her gate.
 Now Mamma is chaperone.

—Trinity Tablet.

A SAD CASE.

My case is bad, extremely sad,
 I wonder how I stand it.
 A cent or two of cash I have—
 My creditors demand it.

I owe a man—a tailor man—
 Just twice my yearly money.
 But this is naught—it bores me not;
 In fact, it's rather funny.

My "marks" mount up to sixty-nine;
 Pooh, think you that annoys me?
 My chapel cuts have vanished quite,
 To-day "ill health" employs me.

But all these woes are joys, compared
 To one that's past all joking.
 My doctor tells me that my heart
 Is far too large for—smoking!

—Trinity Tablet.

PALMISTRY.

A darling little soft, white hand,
 Rose-palmed, and sweet to kiss;
 No sculptor ever carved from stone
 A fairer hand than this.

Upon my eyelids it would rest,
 Or o'er my forehead pass,
 Softer than ever rose-leaves fell
 Upon the waving grass.

No other hand unto my heart
 Could greater solace bring,
 Unless, mayhap, it chanced to be
 Four aces and a king.

—Life.

A prudent old farmer near Worcester
 Had a Shanghai hen and a rorcester;
 But their perch was up high,
 And the hen couldn't fly,
 And so the old man had to borcester.

ALL IN THE FAMILY.

Why should I be prudent?
 Though income be scanty,
 What comes from my "uncle,"
 All goes to my "ante."

—Brunonian.