On the Relative Numbers of Positive and Negative Ions present in Atmospheric Air: A. THOMSON.

Note on the Cause of the Discrepancy between the Observed and Calculated Temperatures after Expansion in the Space between the Plates of a Wilson Expansion Apparatus: R. A. MILLIKAN, E. K. CHAPMAN and H. W. MOODY.

Some New Values of the Positive Potentials assumed by Metals under the Influence of Ultra-violet Light: R. A. MILLIKAN.

The Second Order Effect of Ether Drift on the Intensity of Radiation: A. TROWBRIDGE and C. E. MENDENHALL.

The Rotary Dispersion of Quartz at −190° C. and Observations at other Temperatures: F. A. MOLBY.

The Pyrheliometric Scale and the Solar Constant: C. G. ABBOT.

Single-line Series in the Spectra of Ca and Sr: F. A. SAUNDERS.

The Relative Motion of the Earth and the Ether: H. A. WILSON.

A Study of the Multiple Reflection of Short Electric Waves between two Reflecting Surfaces: L. E. WOODMAN and H. W. WEBB.

A Hot Air Engine Indicator Diagram: A. G. WEBSTER.

The Nitrogen Thermometer from Zinc to Palladium: A. L. DAY and R. R. SOSMAN.

On Calcium Clouds in Space: Dr. STIFER (presented by Percival Lowell).

The Second Postulate of Relativity: R. C. TOLMAN.

The Terminal Velocity of Fall of Small Spheres in Air: JOHN ZELENY and L. W. MCKEEHAN. (By title.)

The Present State of our Knowledge concerning Permanent Magnetism: A. A. KNOWLTON. (By title.)

The Heat of Dilution of Aqueous Salt Solution: F. L. BISHOP. (By title.)

Uranous and Uranyl Bands—A Very Fine Band Absorption Solution Spectrum: W. W. STRONG. (By title.)

Insulation of Observatory Domes for Protecting Telescopes and other Apparatus against Extremes of Heat and Cold: DAVID TODD. (By title.)

On the Free Vibrations of a Lecher System: F. C. BLAKE and CHAS. SHEARD. (By title.)

Thunderstorm Electricity: W. W. STRONG. (By title.)

ALFRED D. COLE,
Secretary

OHIO STATE UNIVERSITY

SECTION L—EDUCATION

THE Boston meeting of Section L was unusually successful. The attendance varied from 50 to 110. The policy of the section of devoting each session to a single topic was again carried out. The section committee has voted to continue this policy for future meetings. President A. Ross Hill, of the University of Missouri, was elected the vice-president of the section and Professor John Dewey, of Columbia University, was elected member of the sectional committee.

Probably the most important contribution to the meeting was the address of the retiring vice-president, Professor Dewey, on "Science as Method and as Information." With great clearness it was pointed out what results follow from considering science merely as information and from teaching it accordingly. Only when science is studied as a universal method of obtaining knowledge will science take the important place that is now awaiting it in educational work. The paper has been printed in full in SCIENCE for January 28.

The first session of the section was devoted to a discussion of the topic, "Formulated Scientific Problems in General Education." The first speaker was Professor Edward L. Thorndike, of Columbia University.

He showed that a scientific treatment of education demands means of measuring the facts, changes and relations with which education is concerned. Some useful units of measure and scales for measuring are furnished by physiology, psychology and allied sciences. But in such cases as amount of knowledge of a language, degree of ability in English composition, quality of handwriting, improvement in manners or morals and the like students of education should devise units of measure and arrange scales for teachers. Any product or response or quality which varies in amount can be measured even though it is complex, subtle and subject to an enormous effect from the personal equations of observers.

The desiderata in a scale for the measurement of educational facts are: (1) that the points on the scale be defined with exactitude, (2) that a difference of one should have the same value no matter where on the scale it occurs, (3) that the values attached to points on the scale should all refer to a defined and useful zero, preferably one signifying no amount whatever of the fact in question, and (4) that the scale be convenient

and fine enough. The speaker showed portions of a scale for the quality or goodness of handwriting in the case of children ten to sixteen which approximately realized these desiderata. The method of securing such a scale was explained.

Professor Charles H. Judd, director of the School of Education of the University of Chicago, presented some suggestions of experiments in education. Professor Judd pointed out that many tests have been proposed by committees and individuals in the hope of providing a means of collecting from large numbers of persons data which can be made the basis of elaborate studies of individual differences. These tests have been of little general use and the comparisons which they permit are of doubtful value. One of the chief reasons for this failure of tests is, I believe, to be found in the fact that they deal with the products of mental development rather than with the processes by which mental development is attained. Thus to take a concrete case, many tests have been made of the ability of individuals to reproduce a line exposed to inspection for a short interval. The ability to reproduce such a line is the product of a long series of experiences in which an indefinite variety of favorable and unfavorable conditions are involved. A single test can no more throw light on the mental complex which is involved in the reproduction of a line, than a single inspection of the external aspect of an animal can throw light on the process of organic evolution. What is needed is a test which shall bring out a succession of efforts to produce the line.

A second general type of test which I believe could very advantageously be tried on a large scale would be directed toward the solution of the problem of the different interests of children at their different ages. Let different types of material be presented to the whole school on such a general occasion as the general assembly, and let each child get as much out of the material presented as he can. Then let all the school be called on to write on what was seen or heard. To make this recommendation concrete, let one such demonstration be devoted to the explanation and exhibition of a simple scientific test of specific gravity, or the center of gravity. Let a second consist in a purely imaginative description calling upon the child for the exercise of visual imagery.

Finally, I have a general suggestion which, I believe, might properly be laid before this section. Many teachers are trying elaborate experiments in one subject or another and need help on the methods of testing their experiments. Thus a teacher is using the natural method, another the grammatical method, of teaching modern languages. Some teachers are trying the method of teaching geometry through concrete demonstrations rather than the conventional Euclidean logical demonstrations. The student of education needs only to go to the meetings of modern language teachers and teachers of mathematics to hear discussions of many such experiments. What is needed is the collection of all these experiments so that we may be intelligent as to the tendencies of actual practical school experimentation. Section L could, in my opinion, render no greater service than to organize a movement for the generalizing of such educational experimentation.

Professor George H. Mead, of the University of Chicago, presented a paper on "The Psychology of Social Consciousness" implied in instruction. The paper will be printed in full in Science. Its argument is as follows:

Primitive education is actually studied by that form of psychology which is termed social, because primitive education gathers about play, imitation and the reaction of adolescent emotion into initiatory ceremonies. On the other hand, the psychology which has scientifically studied the education in our modern school-systems has been largely intellectualistic, it has studied the subject matter that the child is to learn only from the point of view of the material in the mind of the child, of the associations by which it can be taught, and by the repetition of which it can be held in the child's mind. Thus the material of instruction and its acquirement is entirely separated from the social situation and its consciousness, which is implied in the relation of the child to his teacher, to the other children in the school, to the family that sends him to school, and to the society as a whole which is educating him to become a citizen. To the fact that the modern school has ignored to such a large degree the social nature of the child in the process of his schooling can be traced most of the admitted defects in methods of teaching. Actually both the form of instruction is social, *i. e.*, language which is the vehicle of converse between social selves; and the subject matter, *i. e.*, the material toward which our socially organized impulses, and the attention which is dependent upon them, are directed. Neither this form nor the subject matter of instruction can be scientifically con-

trolled unless we frankly recognize their social nature, and that of the children who are to be instructed. In this sense, if in no other, the scientific study of education implies a social psychology as a technique.

Professor W. F. Dearborn, of the University of Chicago, discussed "Problems in the Psychology of Reading."

A fundamental problem in education is that of finding ways to estimate accurately the rate of progress of pupils in their school studies—accurate tests are of value not only for measuring individual progress, but as a means for determining the relative merits of different methods of instruction. The test to which I wish to call your attention furnishes a means for estimating individual progress in learning to read—and thus affords a basis for judging of the success of the methods of instruction employed in teaching reading.

I assume your acquaintance with the general fact that there is among the physiological basis of reading, a peculiar form of movement of the eyes, of which the principal features are several distinct stops or pauses in each line that is read, with very rapid movement between pauses. This habit must be acquired just as any other, as, for example, the coordination of movements in learning to write, although we have not established the aids to its acquisition which exist in the case of handwriting. In fact, from the standpoint of the movements concerned we are not at all certain as to what constitutes good form in reading.

Some investigations of the qualities of merit in teachers were presented by William C. Ruediger, assistant professor of educational psychology in the George Washington University, Washington.

The following fourteen items of information were secured from twenty-six elementary schools: (1) the teachers by grades, numbered consecutively; (2) the highest certificate, diploma or degree held; (3) experience in years; (4) general merit; (5) health; (6) personal appearance; (7) initiative or originality; (8) strength of personality; (9) teaching skill; (10) control or ability to keep order; (11) ability to carry out suggestions; (12) accord between teacher and pupil; (13) progressive scholarship, and (14) social factor outside of school.

Beginning with the fourth item, the teachers were arranged by numbers in their order of merit, and the various items were correlated with general merit, by the Woodworth method of per cent. of displacement. The average per cents. of displacement obtained were for (3) 32; (5) 48; (6) 40; (7) 25; (8) 27; (9) 23; (10) 22; (11) 31; (12) 31; (13) 28; (14) 36. (7) compared with (11) gave an average displacement of thirty-one per cent. (8) compared with (12) gave an average displacement of 32 per cent. The best teachers had taught an average of fourteen years and the poorest eight years. No teacher ranked first or second had taught less than five years. 69 per cent. of the best teachers were found in the four extreme grades, while 57 per cent. of the poorest were in the four intermediate grades. Of the normal school graduates 28 per cent., of certificated teachers 21 per cent. and of college graduates 17 per cent. occupied first and second rank. The corresponding percentages for the two lowest ranks were for the normal graduates 16 per cent., certificated teachers 21 per cent., high school graduates 36 per cent. and college graduates 44 per cent.

The second session was devoted to a discussion of "Scientific Studies of the American College." The first speaker, Mr. E. C. Sage, assistant secretary of the general education board, discussed the "Geographical Location and Sphere of Influence of Colleges in the United States," as follows:

From the planting of Harvard College in Cambridge, Mass., in the year 1636, to the founding of the new college in Portland, Ore., in the autumn of 1909, the increase of colleges has kept pace with the westward movement of the population. The selection of sites for the location of colleges seems to have been made with slight regard to the existence of other institutions; for example, in and about Los Angeles, Cal., there are six colleges; in the Willamette Valley, Ore., a territory fifty by one hundred and thirty miles, there are seven colleges; in Kansas there are twenty-five colleges; in Iowa there are twenty-nine colleges; in Ohio there are no fewer than fifty-two institutions empowered by law to grant the bachelor's degree. A part of the Missouri Valley extending a distance of two hundred and fifty miles across the state of Missouri seeks to support nineteen colleges. Pennsylvania, with twenty-nine colleges, maintains eleven in her western range of counties, while Nebraska in her southeastern section, in a territory with a radius of fifty miles, has nine. In at least seven states it is possible to find as many as ten colleges in a territory circumscribed by a circle with a radius of fifty miles.

"National" Colleges.—The number of colleges, including the departments of arts and sciences of universities, which receive at least two students from at least twenty-five states, is fifteen. Of these, five are colleges for women only, five for men only, and five are coeducational. While these are designated as "national," a large proportion of their students come from a local territory, the proportion from within fifty miles ranging from twenty-three per cent. to fifty-five per cent.

Southern Colleges.—There are five southern colleges which enroll at least two students from each of ten southern states.

State Universities.—Naturally enough, most state universities serve principally the respective states in which they are located. There are three conspicuous exceptions; namely, the University of Michigan, with forty-one per cent. of its students coming from beyond state lines; the University of Virginia, receiving forty per cent. of its students from outside states, and the University of Wisconsin, enrolling nineteen per cent. of its students from beyond state boundaries.

The state universities, as a rule, serve widely their respective states; for example, the University of Indiana draws two or more students from ninety of the ninety-two counties of the state; the University of Illinois, from seventy-three of the one hundred and two counties of the state; the University of North Carolina, from sixty-seven of the ninety-seven counties of the state.

Colleges and States.—A survey of institutions, state by state, discloses the fact that only a few colleges in each commonwealth secure students in any considerable numbers from all parts of the state; for example, in the following eleven states the number of colleges which have two or more students from one half of the counties of their respective states are: Virginia, none; North Carolina, three; Georgia, none; South Carolina, three; Florida, none; Tennessee, none; Pennsylvania, one; Ohio, two; Indiana, two; Illinois, three; California, two. Of these fifteen colleges, six are state institutions.

The New England Colleges.—The colleges of New England differ from those found where the states are large. Nearly all receive students from all counties of the states in which they are respectively located, but when the field surveyed is narrowed to a radius of fifty miles many of the colleges are as local as any found in the United States; for example, fifty per cent. of the students of Bowdoin College are from within fifty miles; Harvard College, fifty-two per cent.; Bates College, fifty-six per cent.; Brown University, sixty-two per cent.; University of Vermont, sixty-five per cent.; Boston University, eighty-one per cent. Yale receives thirty-two per cent. of her students from New England and twenty-seven per cent. from New York State, making fifty-nine per cent. from New England and New York State. Dartmouth receives sixty-seven per cent. from New England. Other New England colleges are even more local.

General Conclusions.—From studies similar to those indicated above, general conclusions are drawn as follows:

1. A few colleges, numbering less than twenty, may be properly designated as "national," but even those so-called "national" colleges receive but a small proportion of their students from distant parts of the country.

2. A few southern colleges, numbering not more than five, serve in a large way the southern states, but these, likewise, are largely local.

3. The state universities, with two or three exceptions, are local within the state; but while drawing few students from without, they secure students from large portions of the state in which they are respectively located.

4. A very few of the private institutions are found which draw two or more students from one half of the counties of the state in which they are located. Several states have no such colleges.

5. All other institutions are emphatically local. When these colleges are located in a city or town of considerable size, one fourth to one third of the students are from the town or city and from fifty to eighty per cent. are from the immediate vicinity.[1]

Professor George D. Strayer, associate professor of education in Columbia University, presented the following data collected by a special inquiry of the bureau of education, from 93 colleges concerning the student body in American colleges.

In comparing the size of freshman, sophomore, junior and senior classes it is found that the median per cent. of the freshman class found in the sophomore class is 71 for men, 65 for women.

The junior class shows 55 per cent. of the freshman class as a median for men and 44 per cent. as a median for women. On the same basis the median for the senior class for men is 46 per cent. and for women 42 per cent. The median age for graduation for men is 23 years and one month.

[1] The estimates are based upon the enrollment of students in the four classes of the department of arts and sciences.

The median ages of graduation for the middle 50 per cent. of the colleges are included within the limits, 22 years and 6 months, 22 years and 9 months. For women the median age is 22 years and 8 months, the middle 50 per cent. falling between the limits 22 years and 23 years and 3 months.

The economic status of college students may be roughly indicated as follows: 19 per cent. have fathers who are engaged in professional work; 15 per cent. have fathers who own farms worth more than $5,000; 7 per cent. have fathers who own smaller farms; 20 per cent. have fathers engaged in trade or commerce, making more than $2,000 a year; 15 per cent. have fathers who make less than $2,000 a year in trade or commerce; 6 per cent. have fathers who are skilled laborers; 3 per cent. have fathers who are unskilled laborers, and the fathers of 15 per cent. of the students are dead.

Further light upon the economic status of students is shown by the fact that 25 per cent. of the student body engage in gainful employment for from four to twenty-four hours or more, per week, while in college.

Mr. Clarence F. Birdseye, editor of the new journal, *The American College*, and director of the Higher Education Board, spoke on the purposes of that association. Mr. Birdseye explained how the life of the student is lived upon three distinct planes; the statutory or the governmental plane, wherein the written law defines, commands or forbids certain rights, duties and acts; the contract or community plane wherein contracts, more or less formal, govern his relations with his fellows; and lastly, the home plane, wherein the parent enforces his commands under quite a different law from that of the other planes. The college used to pay considerable attention to the development of students on the home and the community planes, but now has centered all its efforts on the statutory or governmental plane. The new college and new style of learning required constantly more money for new buildings and a larger faculty. It gradually abandoned its home functions and centered its attention on the curriculum with a corresponding loss of its power to build up strong character. The college also offers no opportunity for recognizing unusual power or successful work by instructors. The Higher Education Association believes that the colleges need standardizing of efficiency and that this must come through radical changes in the college administration.

Extracts were read from the charter of the association to show how this would be done. The paper will be printed in full in SCIENCE.

Professor Wm. G. Hale, professor of Latin at the University of Chicago, presented a paper on "Problems in Grammatical Terminology."

The third session of the section was devoted to the report of the committee on the distribution of students in college courses.

Professor E. L. Thorndike, as chairman of the committee appointed to collect facts concerning (1) the practise of American colleges with respect to the number of students taught in one group by one instructor, and concerning (2) the studies actually taken by individual students to fulfill the requirements for the bachelor degree, presented the following data: (*a*) a list of the colleges which report in print more or less adequately the provision for teaching each course offered, and the number of students enrolled in it; (*b*) a table of frequencies of classes of different sizes in some twenty institutions, a class being defined as a group dependent on one person for their instruction in the subject; (*c*) a statement of the variation amongst institutions in the size of class in certain instructive cases, such as the first course in history, the first course in psychology, the first and second courses in French and German; (*d*) the per cent. of the total degree requirement given by each student to each subject in the case of some five hundred students from sixteen institutions; (*e*) measurements for the frequency of specialization in each institution; (*f*) measurements of the frequency of superficiality or scattering in each institution.

The following resolutions were presented by the committee and adopted:

Resolved, That samples of the facts concerning the number of students taught by one instructor be sent to the colleges and universities on the list of the United States Bureau of Education.

Resolved, That those in charge of collegiate instruction in each of these institutions be requested to report in print or to this committee any facts concerning the relation of the size of class to efficiency in teaching, with special reference to the following questions:

1. Is not the number of students taught at one time by a single individual in many college courses so great as to reduce that individual's knowledge of the attitude, preparation, difficulties, errors and achievements of his students to almost zero?

2. Is not the number of students taught at one

time by a single individual in many college courses so small as to involve an enormous waste of the instructor's time and an improper distribution of the appropriations for teaching?

3. Other things being equal, should not the teaching of more than forty college students at one time by one person be avoided? Should not any department have reasons of weight for any such case?

4. Other things being equal, should not the use of a quarter or more of a professor's teaching hours for a year for the instruction of fewer than ten students in one undergraduate course counting one twentieth or less of the degree's total requirement be avoided? Should not any department have reasons of weight for any such case?

5. Should not the traditional method of having the ratio which the number of class meetings is to the number of "points" credit the same, regardless of whether the class enrollment is 1, 5, 10, 20 or 100, be abandoned in many of the undergraduate courses enrolling less than ten students?

6. When, in a college course given annually, the number of students is less than 6, should not the course be offered only once in two years, except for reasons of weight?

Resolved, That those in charge of collegiate education in the colleges and universities on the list of the United States Bureau of Education be requested to consider the advisability of reporting for 1910, and once in every ten years thereafter a detailed statement of the work done for the bachelor's degree by each member of the graduating class or by each of 100 students chosen at random from it.

Beside these three sessions, several joint sessions were held with other organizations. The first of these with the American Federation of Teachers of the Mathematical and Natural Sciences was devoted to the presentation of reports and to a discussion of the work of the International Commission on the Teaching of Mathematics. This session is reported in full in the federation report.

The second joint session was held with the Social Education Club of Boston. The topic of this session was "Equal Opportunity for All."

The third joint session was held with Section B, Physics, for the discussion of the teaching of elementary physics. The report of this meeting will be found in the report of Section B. From the point of view of Section L the meeting had two significant features. The first was that one of the other sections of the association found it desirable to devote one of its sessions to a discussion of the teaching of science, and the other was the wide divergence of opinion expressed at the meeting. It is a hopeful sign that this discussion has been begun and it is certain that the diversity of opinion will gradually disappear if similar sessions may be held at succeeding meetings.

On Wednesday evening the Social Education Club of Boston held a public meeting. At this meeting Mr. Edward L. Stevens, associate superintendent of schools of New York City, presented a significant paper on "Why do Pupils leave the High School before Graduation?" Mr. Stevens's conclusions, based on a careful investigation of a large number of schools, are as follows:

1. Many students enter high schools who do not intend to remain after the age of sixteen or after they secure employment. Of 450 girls entering one of our high schools, about 130 were in this class.

2. Many students find, or think, during the first or second year of the course, that the work they are doing is in no wise calculated to prepare them to work or to work efficiently. I think it may safely be admitted that a year of Latin will be of little, if any, use to a boy who leaves at the end of the first year to enter a trade.

3. Many students of rather mediocre ability find that a course determined largely by college entrance requirements is either too difficult or does not appeal to their abilities or interests.

4. Many students are forced, unwillingly, to leave and go to work by the accidents or embarrassments met by their parents in business.

5. Many students are tempted to leave by the offer of employment at apparently alluring wages.

6. Some students leave because of the severity of the management or of the rigors felt at the hands of university-trained specialists.

7. Some students die, and a considerable number, particularly girls, break down or fail in health. A few girls marry.

The remedial measures suggested are stated in the conclusions which follow:

1. The training of children begins in the home. It should continue in the home. Girls and young women should have a training such that they shall become intelligent and efficient mothers, not only in order to preserve their own health and usefulness, but in order that they may bring up their children. The high school must in this respect, as in others, do much of the work for-

merly done in the home. The home is transferring constantly some of its functions to the school.

2. Many kinds of schools and many kinds of courses should be offered.

3. The needs of communities should be studied in order that students in high schools should not be diverted from labor—but rather prepared for it, and for that kind which is locally needed and for which they are individually adapted.

4. High school teachers must study children and their interests, tastes and capabilities more than subjects or syllabuses.

5. Secondary or higher education must not be considered as a means of escape from labor.

6. Many must be prepared to work with their hands.

7. When we have done all this we shall no longer be concerned about the number who leave high school before graduating, and I rather suspect that we shall not long deliberate on whether pupils have read four or six books of Cæsar, nor shall we discriminate against them if, being girls, they have elected cooking instead of physics, or being boys, they have elected modern civics instead of ancient history.

If it be true that the conditions of law and life require or induce the attendance of children in high schools until they are fifteen or sixteen or seventeen, and the conditions of graduation impose a four years' course, it is quite evident that the schools are being maintained, so far as numbers are concerned, for those who do *not* graduate, or who only remain in school one, two or perhaps three years; and this being the case, the principle of "the greatest good for the greatest number" requires that we shall give them particular and special attention.

C. R. MANN,
Secretary

FIFTH MEETING OF THE ENTOMOLOGICAL SOCIETY OF AMERICA

THE fifth meeting of the Entomological Society of America was held at the Harvard Medical School, Boston, December 30 and 31, 1909. The president, Dr. Henry Skinner, presided throughout the sessions. The president announced the deaths of Henry H. Edwards, an honorary fellow, Professor Mark Vernon Slingerland, a fellow, B. H. Guilbeau, W. Brodie and H. M. S. Seib, members. Suitable resolutions on the deaths of Mr. Edwards and Professor Slingerland were adopted. The report of the executive committee showed, among other things, that 16 new members had been received during the year and 22 memberships had terminated, not including those who had died. Also that a memorial drawn up by Mr. N. C. Wood regarding the tariff on insects and signed by the president and secretary had been productive of no action by congress.

The question of appointing delegates to the approaching International Congress of Entomology was referred to the executive committee.

The following officers were elected:

President—Dr. John B. Smith.

First Vice-president—Dr. S. A. Forbes.

Second Vice-president—Professor V. L. Kellogg.

Secretary-Treasurer—Professor C. R. Crosby.

Additional Members of the Executive Committee—Professor J. H. Comstock, Dr. W. M. Wheeler, Mr. E. A. Schwarz, Professor J. M. Aldrich, Rev. Professor C. J. S. Bethune, Professor Lawrence Bruner.

Member of the Committee on Nomenclature—Professor T. D. A. Cockerell (to succeed himself).

The report of the committee on nomenclature concerning the nomenclature of gall insects read at the Baltimore meeting, and printed in the *Annals* for 1909, was adopted as printed, with the provision that the society express itself as standing with the majority of the committee in section V.

Mr. Brues suggested that Professor Felt submit a list of names of gall insects that he thought could be accepted as standard.

Moved and carried that the request of Dr. Stiles published in SCIENCE, for the preparation of a list of one hundred important names to be adopted by the Congress of Zoology as standard, be referred to the executive committee.

The following amendment to the constitution was adopted: Article V., Sec. 3.—Election of officers. All officers shall be elected by ballot at the annual meeting for the term of one year and shall be eligible for reelection. Their term of office shall commence with the first of June following their election.

The secretary was instructed to take a mail vote of all members and fellows of the society as to whether the present arrangement of paying separate dues and subscriptions to the *Annals* should be continued, or a single membership fee of two dollars be charged, and members receive without further expense the publications of the society.

Professor Sanderson suggested the adoption of a uniform style of button for both the entomological societies meeting in affiliation with the Amer-