subject was "Concerning the Biology of the Chimpanzee."

UNDER the auspices of the Beaumont Medical Club, Dr. Archibald Malloch, librarian of the New York Academy of Medicine, spoke at Yale University on the evening of December 13 on "Certain Old American Medical Works." The lecture was illustrated. Contributions to medicine by American authors were on exhibition in the foyer.

DR. KARL M. DALLENBACH, professor of psychology at Cornell University, spoke on December 14 before the Lancaster Branch of the American Association for the Advancement of Science on "The Psychology of Magic." There were demonstrations of magic by Professor Charles W. Mayser, of Franklin and Marshall College. About 800 members were present.

PROFESSOR KARL ZIEGLER, of the University of Heidelberg, will give a series of lectures at the University of Chicago in the winter quarter, beginning on February 17. There will be two series of lectures—one on "Free Radicles and Organo-Alkali Metal Compounds" and the other on "Poly-Membered Rings."

THE Thomas Young Oration was given by Professor Charles Fabry, of the Institut d'Optique, Paris, on December 6, at the Imperial College of Science and Technology, South Kensington. The title of the lecture was "Vision in Optical Instruments."

APPLICATIONS for the position of senior chemist (distillation) must be on file with the U. S. Civil Service Commission, Washington, D. C., not later than January 6. At present there is a vacancy in the Alcohol Tax Unit, Treasury Department, which will be filled as a result of this examination. The entrance salary is $4,600 a year.

THE 1936 congress of the International Society for Experimental Cytology will be held in Copenhagen. Dr. Albert Fischer, chairman of the local committee, has placed the Biological Institute of the Carlsberg Foundation at the disposal of the congress, and members of the University of Copenhagen and other institutions of Denmark have offered to cooperate in every possible way towards the success of the meeting. Other members of the committee are: August Krogh, zoophysical laboratory; Oluf Thomsen, Institute for General Pathology; Boisen-Jensen, laboratory of plant physiology; Hou-Jensen, Anatomical Institute; Dr. Harald Okkels, secretary, Pathological-Anatomical Institute, all of the University of Copenhagen. Although the exact date of the congress has not yet been fixed, it will probably be held some time in August. Those members of the society who may have definite preferences as to the time of meeting are asked to communicate with Dr. Okkels immediately. Members of the society and others who may be interested are requested to submit to the committee any suggestions they may wish to offer concerning subjects to be dealt with in symposia.

THE new building of the School of Medicine of the University of Arkansas was opened for classes on October 1. Built with a loan and grant of $500,000 from the Public Works Administration, the new structure, accommodating 300 students, is five stories high with a sixth story in the center. It is of modern American architecture with an exterior of buff-colored face brick and limestone trim.

DISCUSSION

THE TRAINING OF TEACHERS OF MATHEMATICS

A COMMISSION of the Mathematical Association of America has recently published a report on "The Training of Teachers of Mathematics"[1] which should be of interest to workers in all fields of science. The report is concerned primarily with the preparation of teachers in colleges and universities, but includes a short discussion of the training of teachers for secondary schools.

With regard to the preparation of college teachers of mathematics, one of the principal issues discussed is the question of the narrowness of training involved in the preparation of a research thesis of the prevailing type. The commission advocates the acceptance of a broader training with a modified type of dissertation as a suitable program leading to a doctorate. In making this recommendation the commission calls attention to the fact that the valuable research produced by American trained doctors in mathematics comes mainly from a very small percentage of the total number of persons holding the doctorate. "The training for research must therefore be justified for most candidates, if at all, on other grounds than their contributions to the advancement of mathematical research, as that term is customarily understood."

The commission says, "The failure of prevalent research training to make productive mathematicians out of the majority of the doctors in mathematics leads us to question the desirability of demanding a research thesis of the prevailing type from all candidates for the doctorate."

[1] *American Mathematical Monthly*, 42: 5, 263–277, May, 1935. Reprints of the full report may be obtained by writing to Secretary W. D. Cairns, Oberlin, Ohio.

The commission proceeds to give synopses of two types of training which they deem suitable for a doctor's degree. It is worthy of note that they recommend for all candidates certain specialized preparation for teaching mathematics:

a. The equivalent of one year of observation and assisting three times a week in various college courses in mathematics which are taught by experienced members of the department of mathematics.

b. Practice teaching in college mathematics under the observation of, and with later criticism by, members of the department of mathematics. This teaching might advisably be done in different courses and should amount to the equivalent of at least a two-semester-hour course. The practice teaching should involve participation in the construction and grading of examinations.

c. Guided reading in books and periodicals relating to the theory of teaching, testing methods, and educational research. This reading could be directed either by a member of the department of mathematics or perhaps by a person outside the department who appreciates the viewpoint of teachers of mathematics.

The training peculiar to the proposed new type of program includes:

(1) Additional course work in mathematics and in allied fields, with emphasis on breadth of training.

(2) One or more expository papers of the variety known as minor theses in the existing requirements for the doctorate in mathematics in some universities. A thesis of this variety would require the candidate to give evidence of his ability to learn independently and to present in good written form, in a brief period of time, some specified known mathematical results with which he was previously unfamiliar.

(3) A major thesis which would exhibit the candidate's mastery of some field of mathematics and expository ability of high order, although perhaps not research ability. The preparation of this thesis should be the independent responsibility of the candidate. This thesis might be of a historical nature, or it might involve material which, though original from the candidate's viewpoint, might not be acceptable for publication in a leading periodical.

The commission discusses the possibility of awarding the degree of doctor of mathematics instead of a doctor of philosophy degree on the completion of the new type of program. There are a number of objections to this proposal, however, and the commission did not recommend its adoption.

With regard to the master's degree the commission states: "Under existing conditions in the teaching profession such a degree by itself is most useful if it implies certification of exceptionally good preparation for teaching secondary mathematics. For it must be anticipated that in the future a mere master's degree will be of only slight use in a search for placement on a college faculty, regardless of whether the college is a two year or a four year institution."

The commission does not advocate the writing of a research thesis as a requirement for a master's degree but states: "It might be desirable, although not absolutely essential, for the candidate to conclude his training by writing a major mathematical paper, although this thesis would be, in general, of an expository nature and not worthy of the name research."

The report concludes with detailed recommendations concerning undergraduate training for teaching secondary mathematics. The report was prepared by a commission of ten mathematicians, five of whom have served as presidents of national mathematical organizations, four as chairmen of mathematics departments in large state universities and three as deans of graduate schools.

E. J. MOULTON

NORTHWESTERN UNIVERSITY

NORMAL "VISUAL HEARING"

LIP reading, or more accurately, visual hearing, is not a mysterious ability found only in deaf or hard of hearing people who have learned to use their eyes to replace or supplement their deficient hearing. There is an important element of visual hearing in all normal individuals. A child, in learning to understand speech, associates certain objects or actions with certain facial expressions as readily and as normally as with the corresponding sounds. If the child has deficient hearing, the visual element becomes the dominating factor in his speech understanding. Normally, however, the auditory associations of speech so completely overshadow the visual that the existence of the latter is generally not suspected.

Any situation which makes it difficult for hearing to function normally will enlist visual assistance if that be possible. Thus, our eyes invariably seek the speaker's face in a noisy location. Reverberation and echos in large halls may render speech from the stage unintelligible when heard from the rear seats. It is well known that an opera glass trained on the speaker's face can do much to help this situation. Much of the "spelling out" of unfamiliar words in telephone conversation results in large part from the absence of visual assistance.

In order to obtain some quantitative measure of this rather elusive ability, a small sound-proof booth has been built in our laboratories. This booth has a double glass window in front. The speaker in the booth can not be heard directly. His voice is picked up by a microphone, amplified, and then delivered to a loudspeaker. An operator outside the booth can render the speaker visible or not at will by means of lights which he controls. This operator can also