are three pairs in the oogonium, spermatogonium and fertilized egg, and three tetrads or dyads in the maturation divisions of the egg and sperm. In the 1934 note it was suggested that this form might be called *Ascaris megalocephala trivalens,* and might be a case of polyploidy; or perhaps should be considered more primitive than *bivalens* or *univalens,* as the Mongolian pony (the common horse in China) is a primitive animal. From this new and abundant material I have noticed certain morphological differences in size and shape which make me wonder whether its relationship to *megalocephala* may not be quite so close. Diminution takes place in the somatic cells, as in the classical Ascaris, but it looks as though the somatic chromosome number may be less.

All these points will be worked out carefully and published with drawings in a later number of the *Peking Natural History Bulletin* within this year.

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IN RE HYPOTHECATE

THE erroneous use of "hypothecate" is justly condemned in your issue of June 25 by Professor A. V. Hill. The error is an instance of the common confusion of two words somewhat similar in sound but differing in meaning. The sentence criticized read, "Each hypothecated element in the nerve," etc. "Hypothetical" was evidently what the writer intended. It is a useful word, somewhat more specific than "assumed," which Dr. Hill recommends, since it implies an assumption made in accordance with a previously stated hypothesis. So in banishing "hypothecated" in its erroneous sense, let us not dismiss with it the useful words "hypothetical" and "hypothesized."

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THE interest constantly shown by SCIENCE in matters of diction prompts this note. In regard to the misuse of the word "hypothecate" in the sense of "assume," to which A. V. Hill takes justifiable exception in your issue of June 25, I would call attention to the word "hypothesize," which has exactly the sense and sound desired by many authors in certain cases and which is in good standing in the dictionaries. Perhaps, though, the more common verb *postulate* would serve in such cases equally well.

In your next *index expurgatorius* please put a lasting curse on the following atrocities: "Spacial" (for spatial); "Causal" (in the sense of *causative*); "Humans" (for human beings); "Do an experiment on. . . ."

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SOCIETIES AND MEETINGS

THE AMERICAN GEOPHYSICAL UNION

THE eighteenth annual general assembly of the American Geophysical Union and the meetings of its seven sections were held from April 28 to 30, 1937, at Washington, D. C., in the buildings of the National Academy of Sciences and the National Research Council, the Smithsonian Institution and the U. S. Geological Survey.

The scientific session of the general assembly was devoted to a symposium on theoretical and observational considerations of importance to further studies of the depths of the earth. Five formal papers presented were: "On the Estimation of Temperatures at Moderate Depths in the Crust of the Earth," by C. E. Van Orstrand; "The External Gravity-Field and the Interior of the Earth," by W. D. Lambert; "Deep-Focus Earthquakes and Their Implications," by J. B. Macelwane; "The Earth's Interior as Inferred from Terrestrial Magnetism," by A. G. McNish; "The Behavior of Matter under Extreme Conditions," by P. W. Bridgman. After an extended discussion, the symposium was summarized by L. H. Adams. Detailed reports were received from two special committees, namely, (1) on geophysical and geological study of oceanic basins and (2) on geophysical and geological study of continents.

Ten resolutions were adopted. Two of these expressed thanks for privileges extended by the Smithsonian Institution and by the U. S. Geological Survey. The importance of the United States time-signals for the economical and efficient continuation of many scientific projects of a geophysical nature was emphasized, with expressions of appreciation for that service to the Naval Observatory and the Bureau of Navigation of the United States Navy. Another resolution called attention to the splendid cooperation of the Bell Telephone Laboratories in lending its improved crystal-chronometer for the recent gravity-at-sea expedition; this crystal-chronometer greatly increased the precision obtained.

The results of the third expedition for gravity-work at sea by the United States Navy during September, 1936, to January, 1937, in cooperation with the union and other organizations, form an invaluable contribution to the investigation of oceanic areas; the union expressed the hope that the United States Navy would continue to promote such important work whenever

practicable. Another resolution expressed thanks to the American Philosophical Society for its grant which provided for certain expenses of the third gravity-expedition that were not otherwise provided for.

The importance of providing the Pennsylvania State College with a modern and well-equipped seismological observatory for the continuation and extension of seismological investigations and cooperative work was stressed. Another resolution pointed out the potential value of encouragement and endorsement of the action of the Eastern Section of the Seismological Society of America in the formation of its Committee on Amateur Seismology.

The union heartily commended, as an effective means of furthering American meteorology and safe flying, the five-year program of research and instruction proposed by the Blue Hill Meteorological Observatory and urged airlines, individuals and research foundations to support this program.

A resolution on the collection of basic data in hydrology made formal recognition of the foresight of agencies, both federal and non-federal, who have preserved invaluable records in hydrology, and recommended encouragement in further collections of such data and the program outlined by the Water Resources Committee.

J. A. Fleming was reelected general secretary of the union and W. D. Sutcliffe was elected secretary of the section of geodesy, both for three years from July 1, 1937.

The total membership of the union on April 30, 1937, was 928—a net gain of 160 during the past year. Thirty-three of the union's members attended the seventh triennial assembly of the International Union of Geodesy and Geophysics in September, 1936, at Edinburgh, Scotland. The eighth triennial assembly of the international union is to be held in 1939 at Washington, D. C.

In the Section of Geodesy twelve papers and reports were presented. Five of these dealt with progress and development of geodetic operations and instruments in Canada, Central America, Mexico and the United States; six related to gravimetric surveys, apparatus, interpretations and relation of gravity-anomalies and geologic structure; one illustrated the utility of state plane-coordinate systems; and one reported on geodesy at the Edinburgh Assembly.

The Section of Seismology held one session. The twelve communications may be classified as follows: Theoretical interpretations and analysis (4); individual earthquakes and seismic measurements (2); research in engineering seismology and applications (3); seismic instruments (2); progress-report for the United States (1).

The Section of Meteorology heard twelve papers which concerned theoretical meteorology (3), observations and technique (7), areal frequency of tornadoes (1), and meteorology at Edinburgh Assembly (1).

Fifteen communications were received by the Section of Terrestrial Magnetism and Electricity. These related to instruments and technique (3), ionosphere and magnetic correlations (4), cosmic radiation (2), solar relations (3), measures of magnetic activity (1), and terrestrial electricity (2). The secretary submitted brief summaries of progress-reports dealing with magnetic and electric researches by eight organizations in Canada, Peru, Western Australia and the United States, including Alaska, Hawaii and Puerto Rico.

Twelve communications at the meeting of the Section of Oceanography concerned progress during the year of five governmental and private organizations doing oceanographic work in the United States and Canada. Five papers had to do with dynamical oceanography and ocean-currents. Two papers related to North Atlantic deep-sea cores and investigation of submarine topography.

Fifteen papers were submitted and discussed at two sessions of the Section of Volcanology. They dealt with igneous rocks, igneous activity and volcanic formations.

There were four sessions of the Section of Hydrology—three for the presentation of reports and papers, and an evening smoker devoted to informal reports on the Edinburgh Assembly of the International Union of Geodesy and Geophysics and to discussion of plans for the Assembly of that Union scheduled for Washington in 1939. Twenty-seven papers, with discussions, may be roughly grouped as follows: Rainfall, infiltration and ground-water (10); stream-flow and flood-control (8); geophysical methods and technique for determination of underground water (6); and one each on wells, mine-water, snow-surveying and chemical action. The Research Committee on Rainfall and Runoff, because of its extensive field, was divided into two in 1936, namely, on runoff and on rainfall; thus there are now ten permanent research committees in this section. The annual reports of these committees were received and discussed at the three scientific sessions as follows: (1) snow; (2) glaciers; (3) evaporation; (4) absorption and transpiration; (5) runoff; (6) physics of soil-moisture; (7) underground waters; (8) dynamics of streams; (9) chemistry of natural waters; (10) rainfall.

DENVER REGIONAL MEETING

The regional meeting of the Section of Hydrology at Denver, Colo., was arranged by a special committee, of which R. J. Tipton was chairman. Some 44 stimulating papers with discussions were presented during ten scheduled sessions, from June 21 to 26, 1937. At the first session statements were presented by the

president of the union and by the chairman and vice-chairman of the Section of Hydrology on the objectives of the section and on the general scientific and national and international aspects and relations of its field. In the following sessions the papers related to consumptive use and return-flow, rainfall and runoff, physics of soil-moisture, dynamics of streams and underground waters. The two sessions of June 22 were held jointly with the Society of American Foresters, and the nine papers presented will be published in the official organ of that Society. The session on the afternoon of June 24 was devoted to attendance at the symposium of the Ecological Society of America on "The Scientific Aspects of the Control of Drifting Soils." The session during the morning of June 25 and the two sessions of June 26 constituted the South Continental Divide Snow-Survey Conference, concluding with a movie film of snow-surveying and a round-table presentation of experiences and problems in snow-surveying.

TRANSACTIONS

The proceedings of both the annual and regional meetings have been edited by the general secretary for publication by the offset method in two volumes of *Transactions,* the first volume being devoted to papers presented at the general assembly and at the meetings of the Sections of Geodesy, Seismology, Meteorology, Terrestrial Magnetism and Electricity, Oceanography and Volcanology. The second volume is devoted to papers and reports submitted before the Section of Hydrology at the eighteenth annual meetings and at the Denver regional meeting. The *Transactions* include 138 papers and reports, either in full or in abstract, presented at the eighteenth annual meetings, and some 35 papers and reports, not elsewhere published, presented during the meetings at Denver of the Section of Hydrology and of the South Continental Divide Snow-Survey Conference.

These annual and regional meetings afford abundant evidence of the vital scientific and economic importance of geophysics. They further point out many new applications and problems of large immediate and potential value. As a pioneer in the dissemination of information regarding American progress in current geophysical research so vital to human activities, the continued publication of the *Transactions* of the union is an important agency—one which serves to emphasize the urgent need of finding additional suitable means of prompt publication.

JNO. A. FLEMING,
General Secretary

SPECIAL ARTICLES

DETERMINATION OF ULTRA-VIOLET LIGHT ABSORPTION BY CERTAIN BACTERIOPHAGES

SEVERAL workers[1,2,3,4] have recorded quantitative data on the ultra-violet light absorption of various organic materials, proteins, amino acids, nucleic acids, etc. Because such data may eventually throw light on the nature of such materials, it seemed desirable to measure the absorption of ultra-violet light by bacteriophage. This preliminary paper reports the findings of such observations.

The bacteriophages employed, C13, C16 and C36, came from Burnet's collection through the courtesy of Dr. C. H. Andrewes. They were prepared in 2 per cent. peptone (Bacto) water with strain No. 229 (Tittsler) of *Escherichia communior.* Bacteriophage C13 was purified by the modification of the Kligler-Olitzki technique previously reported.[5] Certain pertinent characteristics of these bacteriophages are given in Table 1.

TABLE I
CHARACTERISTICS OF BACTERIOPHAGES AND CONTROL MATERIALS

Bacteriophage	Particle size* in mμ	Plaque size* in mm	Filter exponent of Base 10	Mgm nitrogen per 10 cc
C13	15–20	8–12	9	33.5
C36	20–30	2–6	7	33.2
C16	50–75	0.1–1.2	10	32.9
C13 purified		5–8	12	0.2
2 per cent. peptone water				33.8
Non-lytic filtrate				34.8

* With the exception of the purified bacteriophage, these values are those recorded by Elford and Andrewes, *Brit. Jour. Exp. Path.,* 13: 446, 1932.

The absorption of ultra-violet light by the preparations of bacteriophage, by the sterile medium and by a filtrate of a young culture of the test organism, was determined by the well-known method of match-point spectrophotometry. Many determinations were made on the same and on different batches of each material that was tested, so that the values reported here represent the averages of not less than five photospectrograms.

The results are recorded in Fig. 1, where the logarithm of the absorption (*i.e.,* the "photographic density") is plotted as a function of wave-length. Although each crude bacteriophage contained practi-

[1] F. L. Gates, *Jour. Gen. Physiol.,* 17: 797, 1933.
[2] J. R. Loofbourow, *Bull. Basic Sc. Res.,* 5: 13, 33, 46, 1933.
[3] C. Hicks and H. Holden, *Australian Jour. Exp. Biol. and Med. Sc.,* 12: 91, 1934.
[4] C. Coulter, F. Stone and E. Kabat, *Jour. Gen. Physiol.,* 19: 739, 1936.
[5] L. A. Sandholzer, *Jour. Bact.,* 32: 358, 1936.