Officers of the Geographic Service of the French Army left Paris for Ecuador in May, 1899, and the work was continued until completed.

The arc extends from Tulcan, Ecuador, Lat. + 0° 48′ 25″.6 to Payta, Peru, Lat. — 5° 05′ 08″.6 and the work accomplished in the remeasurement may be summarized as follows; viz.:

Seventy-four geodetic stations.

Three base lines measured.

Eight differences of longitude determined between stations at Tulcan, Piular, Quito, Latacunga, Riobamba, Cuenca, Machala, and Payta. The first five of these stations are distributed along the northern section of the arc, the sixth at the middle of the southern section, the seventh on the coast at the same latitude as the sixth, and the last at the end of the southern section, on the coast.

The comparison of the differences of longitude, geodetic and astronomic, between the stations at Machala and Payta and the station at Cuenca will throw light on the form of the geoid, as the first two stations are on the coast and the third is in the inter-andine region.

Six azimuths determined: at Tulcan, Piular, Quito, Riobamba, Cuenca, and Payta.

Sixty-four determinations of latitude.

Forty-eight magnetic stations: distributed all along the arc.

Six pendulum stations. One of these is at Machala, on the coast, at the point where observations for longitude were made; one at the foot of the western Cordillera, near Chimborazo; one, at an elevation of 4,150 meters in the western Cordillera; two, in the inter-andine region at Riobamba and Quito; and one at an altitude of 1,800 meters in the plain of the Amazon on the eastern slope of the eastern Cordillera.

Two lines of levels of precision: one from the Riobamba base line to Guayaquil and to the tide gauge at Salinas on the Pacific Coast and the other from the southern base line to the tide gauge at Payta, the two lines covering a distance of 410 kilometers.

A study was made of the natural history of the country and important collections were made, which will add to the knowledge of botany, zoology, anthropology and ethnology.

The preliminary computations are far enough advanced to assure the value of the observations. The closure of the triangles and the agreement of the computed and the measured lengths of the base lines compare well with the results obtained in the revision of the meridian of France.

The publication of the results of the work will be regarded as an important event by geodesists throughout the world.

The work reflects great credit on the French government for its liberality in providing the necessary funds, upon the French savants who directed the work and upon the gallant officers who made the scientific observations under most trying and unusual conditions.

Isaac Winston

REPORT OF THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE[1]

The International Commission on Zoological Nomenclature has the honor to submit the following report to the Seventh International Zoological Congress:

The Sixth International Congress referred to the Commission for consideration and report a paper (presented to that congress) urging that "absolute priority" be adopted in the law of priority, instead of taking 1758 as a starting point for zoological nomenclature.

While appreciating the sentiments which gave rise to the proposition in question, your commission is unanimously of the opinion that both practical and theoretical considerations contravene the adoption of "absolute priority" in preference to the date 1758. Accordingly, it is herewith recommended that article 26 of the code be not changed in respect to the point at issue.

During the past three years, several zoologists have submitted to the commission propo-

[1] Presented to the Seventh International Zoological Congress, Boston, Mass., August 19–23, 1907, and unanimously adopted after two public readings.

sitions for amendments or additions to the code. In accordance with the rule established by the Cambridge Congress, a number of these propositions could not be considered formally, because they did not reach the commission at least one year prior to the meeting of the present congress.

In its deliberations, the commission decided to report to the congress only those propositions upon which the vote in commission, as assembled here, was unanimous. The following propositions are unanimously recommended for adoption:

Add to Art. 8 the following:

RECOMMENDATION.—Certain biological groups which have been proposed distinctly as collective groups, not as systematic units, may be treated for convenience as if they were genera, but they require no type species. Examples: *Agamodistomum, Amphistomulum, Agamofilaria, Agamomermis, Sparganum.*

Add to Art. 14 the following:

RECOMMENDATION.—It is well to avoid the introduction of the names *typicus* and *typus* as new names for species or subspecies, since these names are always liable to result in later confusion.

Add to Art. 20 the following:

RECOMMENDATION.—In proposing new names based upon personal names which are written sometimes with ä, ö or ü, at other times with æ, œ and ue, it is recommended that authors adopt æ, œ and ue. Example: *muelleri* in preference to *mülleri.*

Add to Art. 29:

RECOMMENDATION.—To facilitate reference, it is recommended that when an older species is taken as type of a new genus, its name should be actually combined with the new generic name, in addition to citing it with the old generic name. Example: *Gilbertella* Eigenmann, 1903, Smithsonian Misc. Coll., v. 45, p. 147, type *Gilbertella alata* (Steindachner) = *Anacyrtus alatus* Steindachner.

Strike out the entire Art. 30 (dealing with the designation of type species of genera) and substitute therefor the following:

Art. 30.—The designation of type species of genera shall be governed by the following rules (*a–g*), applied in the following order of precedence:

I. Cases in which the generic type is accepted *solely* upon the basis of the original publication—

(*a*) When in the original publication of a genus, one of the species is definitely designated as type, this species shall be accepted as type regardless of any other considerations. (Type by original designation.)

(*b*) If, in the original publication of a genus, *typicus* or *typus* is used as a *new* specific name for one of the species, such use shall be construed as "type by original designation."

(*c*) A genus proposed with a single original species takes that species as its type. (Monotypical genera.)

(*d*) If a genus, without originally designated (see *a*) or indicated (see *b*) type, contains among its original species one possessing the generic name as its specific or subspecific name, either as valid name or synonym, that species or subspecies becomes *ipso facto* type of the genus. (Type by absolute tautonomy.)

II. Cases in which the generic type is not accepted *solely* upon basis of the original publication—

(*e*) The following species are excluded from consideration in selecting the types of genera:

(*α*) Species which were not included under the generic name at the time of its original publication.

(*β*) Species which were *species inquirendæ* from the standpoint of the author of the generic name at the time of its publication.

(*γ*) Species which the author of the genus doubtfully referred to it.

(*f*) In case a generic name without originally designated type is proposed as a substitute for another generic name, with or without type, the type of either, when established, becomes *ipso facto* type of the other.

(*g*) If an author, in publishing a genus with more than one valid species, fails to designate (see *a*) or to indicate (see *b*, *d*) its type, any subsequent author may select the type, and such designation is not subject to change. (Type by subsequent designation.)

The meaning of the expression "select a type" is to be rigidly construed. Mention of a species as an illustration or example of a genus does not constitute a selection of a type.

III. RECOMMENDATIONS.—In selecting types by subsequent designation, authors will do well to govern themselves by the following recommendations:

(*h*) In case of Linnæan genera, select as type

the most common or the medicinal species. (Linnæan rule,[2] 1751.)

(*i*) If a genus, without designated type, contains among its original species one possessing as a specific or subspecific name, either as valid name or synonym, a name which is virtually the same as the generic name, or of the same origin or same meaning, preference should be shown to that species in designating the type, unless such preference is strongly contraindicated by other factors. (Type by virtual tautonomy.) Examples: *Bos taurus, Equus caballus, Ovis aries, Scomber scombrus, Sphærostoma globiporum;* contraindicated in *Dipetalonema* (compare species *Filaria dipetala,* of which only one sex was described, based upon one specimen and not studied in detail).

(*j*) If the genus contains both exotic and non-exotic species from the standpoint of the original author, the type should be selected from the non-exotic species.

(*k*) If some of the original species have later been classified in other genera, preference should be shown to the species still remaining in the original genus. (Type by elimination.)

(*l*) Species based upon sexually mature specimens should take precedence over species based upon larval or immature forms.

(*m*) Show preference to species bearing the name *communis, vulgaris, medicinalis* or *officinalis.*

(*n*) Show preference to the best described, best figured, best known, or most easily obtainable species, or to one of which a type specimen can be obtained.

(*o*) Show preference to a species which belongs to a group containing as large a number of the species as possible. (De Candolle's rule.)

(*p*) In parasitic genera, select, if possible, a species which occurs in man or some food animal, or in some very common and wide-spread host-species.

(*q*) All other things being equal, show preference to a species which the author of the genus actually studied at or before the time he proposed the genus.

(*r*) In case of writers who habitually place a certain leading or typical species first as "chef de file," the others being described by comparative reference to this, this fact should be considered in the choice of the type species.

(*s*) In case of those authors who have adopted the "first species rule" in fixing generic types, the first species named by them should be taken as types of their genera.

(*t*) All other things being equal, page precedence should obtain in selecting a type.

[2] Si genus receptum, secundum jus naturæ et artis, in plura dirimi debet, tum nomen antea commune manebit vulgatissimæ et officinali plantæ.

Opinions Rendered by the Commission.—In response to certain questions, especially in reference to the Law of Priority (Art. 25) and its application (Art. 26), submitted for consideration, the Commission herewith unanimously renders the following opinions:

The meaning of the word "indication" *in Art.* 25a.—The word "*indication*" in Art. 25a is to be construed as follows:

(*A*) with regard to *specific* names, an "*indication*" is (1) a bibliographic reference, or (2) a published figure (illustration), or (3) a definite citation of an earlier name for which a new name is proposed.

(*B*) with regard to *generic* names, (1) a bibliographic reference, or (2) a definite citation of an earlier name for which a new name is proposed, or (3) the citation or designation of a type species.

In no case is the word "*indication*" to be construed as including museum labels, museum specimens or vernacular names.

The Nature of a Systematic Name.—The Commission is unanimously of the opinion that a *name,* in the sense of the Code, refers to the designation by which the actual objects are known. In other words, we name the objects themselves, not our conception of said objects. Names based upon hypothetical forms have, therefore, no status in nomenclature and are not in any way entitled to consideration under the law of priority. Examples: *Pithecanthropus* Haeckel, 1866, being the name of an hypothetical genus, has no status under the Code and does not therefore invalidate *Pithecanthropus* Dubois, 1894; *Gigantopora minuta* Looss, 1907, *n. g., n. sp.,* has no status under the code, since it is admittedly the name of a fantastic unit, not based upon any actual objects.

The Status of Publications Dated 1758.—The tenth edition of Linné's "Systema

Naturæ" was issued very early in the year 1758. For practical reasons, this date may be assumed to be January 1, 1758, and any other zoological publication bearing the date 1758 may be construed as having appeared subsequent to January 1. In so far as the date is concerned, all such publications may therefore be construed as entitled to consideration under the law of priority.

Status of Certain Names Published as Manuscript Names.—Manuscript names acquire standing in nomenclature when printed in connection with the provisions of Art. 25, and the question as to their validity is not influenced by the fact whether such names are accepted or rejected by the author responsible for their publication.

Status of Certain Pre-Linnæan Names Reprinted Subsequent to 1757.—A pre-Linnæan name, ineligible because of its publication prior to 1758, does not become eligible simply by being cited or reprinted with its original diagnosis after 1757. To become eligible under the code, such names must be reinforced by adoption or acceptance by the author publishing the reprint. Examples: The citation, subsequent to 1757, of a bibliographic reference to a paper published prior to 1758 does not establish technical names which may appear in said reference; synonymic citation of pre-Linnæan names, as in the tenth edition of Linné's "Systema Naturæ," does not establish such names under the code.

CH. WARDELL STILES,
Secretary

WILBUR OLIN ATWATER

As the outcome of an illness lasting nearly three years, Professor Wilbur Olin Atwater died at his home in Middletown, Conn., on the evening of September 22, 1907. Professor Atwater was born in Johnsburgh, N. Y., on May 3, 1844. After three years of undergraduate life as a student in the University of Vermont, he spent his senior year at Wesleyan University, graduating in 1865. Several years were spent in teaching in high schools and he then devoted some time to the study of chemistry at the Sheffield Scientific School, receiving the degree of Doctor of Philosophy from Yale University in 1869. His thesis dealt with the composition of several varieties of American maize, thus early showing his tendencies to agricultural science—tendencies that were stimulated by further study at foreign universities in Leipsic and Berlin.

On return from foreign study, he was successively called to professorships in the East Tennessee University, Maine State College, and Wesleyan University. Taking up his work at this latter institution in the then new Orange Judd Hall of Natural Sciences, he began to prosecute researches particularly in the field of agricultural chemistry, enlisting the cooperation of the farmers and awakening interest in the rapidly developing chemistry of fertilizers. This active interest in agricultural chemistry he retained until his death. Recognizing the great service to agricultural science resulting from the experiment stations in Germany, he founded at Wesleyan University the first American agricultural experiment station in 1875. This station was subsequently removed to New Haven and is there continued as the Connecticut Agricultural Experiment Station. In 1888, the Storrs (Conn.) Agricultural Experiment Station was organized and Professor Atwater was appointed its director, a position he held until 1902.

The rapid development of the experiment station movement soon showed that some central clearing house was necessary to give the results of the various stations proper publicity, to promote cooperation among the various experiment station workers and to prevent as far as possible unnecessary duplication of work. To this end, the Office of Experiment Stations of the U. S. Department of Agriculture was created and Professor Atwater was appointed its first director.

It was a natural transition from the study of animal feeding to that of the feeding of man and soon Professor Atwater was directing his energies to chemical and statistical researches on the food and nutrition of man. His early experience as special agent of the U. S. Department of Labor developed in his