proved—whether by selection or by altering the stimulus, and if the latter, how the stimulus may best be altered." Would that all sociological reformers might read and ponder these words.

J. P. McM.

REPORT OF THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE[1]

During the Graz meeting of the International Zoological Congress, the International Commission on Zoological Nomenclature held five executive sessions and one public meeting.

The following ten commissioners were present: Blanchard (president), Dautzenberg, Hoyle, Jentink, Jordan, von Maehrenthal, Monticelli, Schulze, Stiles (secretary) and Wright.

The following five commissioners were not in attendance: von Graff, Joubin, Osborn, Stejneger and Studer.

Resignations.—The following commissioners have presented resignations, and the commission recommends that their resignations be accepted: von Graff and Osborn.

Expiration of Term of Service.—The term of service expires at the close of this congress for the following five members of the class of 1910: Blanchard, Joubin, Stiles, Studer, Wright.

Nominations.—The following members of the congress are nominated to fill vacancies on the commission, caused by resignation or by expiration of term of service:

Class of 1913: Hubert Ludwig (Bonn), *vice* von Graff (Graz) resigned. J. A. Allen (New York), *vice* Osborn (New York) resigned.

Class of 1919: *vice* class of 1910 (term expired): R. Blanchard (Paris), C. W. Stiles (Washington), Louis Dollo (Brussels), Ernest Hartert (Tring), G. A. Boulenger (London).

By-laws.—The commission has adopted the following by-laws, based chiefly upon the methods of procedure adopted at former meetings:

[1] This report was read once in the open meeting of the commission and again in the last general session of the congress. It was adopted by the congress.—C. W. S.

BY-LAWS OF THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

Article I. *Membership*

Sec. 1. This commission shall consist of fifteen members, elected by the International Zoological Congress.

Sec. 2. The commissioners shall serve in three classes of five commissioners each for nine years, so that one class of five commissioners shall retire at every international congress. The retiring commissioners may, however, be reelected to succeed themselves.

Sec. 3. In case of resignation or death of any commissioner, his place shall be filled for the unexpired term by the next international congress.

Article II. *Officers*

Sec. 1. The officers shall consist of a president and a secretary, elected by the commission from its members, to serve during their term as commissioners.

Sec. 2. The two officers shall form an executive committee, whose duty it shall be to perform such work as may from time to time be designated by the commission.

Article III. *Powers of the Commission*

Sec. 1. The commission shall have no legislative power but shall study the general subject of the theory and practise of zoological nomenclature, and shall report its recommendations to the triennial International Zoological Congress.

Sec. 2. The commission shall not report to any congress any proposition for amendment to the International Code, unless said proposition has been before the commission for at least one year prior to the meeting of said congress.

Sec. 3. The commission is authorized to express opinions on cases of nomenclature submitted to it.

Article IV. *Reports to the Congress*

Sec. 1. The commission shall make a report to each triennial International Zoological Congress. Said report shall consist of the following:

(*a*) Recommendations involving any alteration of the Regles Internationales de la Nomenclature Zoologique, but no such opinion is to be reported unless it has first received a majority (eight votes) of the commission and the unanimous vote of all commissioners present at the meeting.

(*b*) All opinions which have been rendered since the preceding congress.

(*c*) A list of all commissioners whose term of

service expires and of all vacancies caused by resignation or death.

Sec. 2. Said report (Art. IV., Sec. 1) shall be posted on a bulletin board as early as possible during the meeting of the congress and prior to the public meeting of the commission (Art. V., Sec. 1).

Article V. *Public Meeting*

Sec. 1. Prior to the request by the commission that its report be adopted and its opinions be ratified by the congress, the commission shall hold a public meeting, at which the opportunity to be heard on its report shall be granted to any member of the congress.

Article VI. *Majority Vote on Opinions*

Sec. 1. A majority vote (namely eight) of the entire and full commission is necessary for the adoption of any opinion. [This is a new proposition and is intended to preserve conservatism. For instance, suppose only thirteen members should vote; it is clear that seven would be a majority, but by the proposed Art. VI., Sec. 1, no "opinion" is adopted unless it has eight votes.]

Sec. 2. If, however, any opinion involves a reversal of any former opinion rendered by the commission, such opinion shall require the concurrence of at least twelve commissioners voting on same.

Article VII. *Publication of Opinions*

Sec. 1. After 90 days from date of mailing the opinions, as soon as a majority (eight) vote in favor of any opinion is returned to the secretary, said vote may be announced.

Article VIII. *Change of By-laws*

Sec. 1. The by-laws of this commission may be amended at any time by an affirmative vote of twelve members.

Financial Aid from the Smithsonian Institution.—Owing to the amount of clerical work connected with the studies conducted by the commission, it has been found very difficult in the past for the commission to render its decisions as promptly as desirable. This difficulty has now been overcome by the generous grant of the sum of $2,700 by the Smithsonian Institution; said sum is available at the discretion of the commission at any time during the three years following the grant.

In addition, the Smithsonian Institution has placed at the disposal of the commission the sum of $500 to be used in publishing the "opinions" rendered by the commission in its function as a court of appeal. An arrangement has been made between the secretary of the Smithsonian Institution and the secretary of the commission, whereby the "opinions" will be published by the institution and forwarded to 1,100 libraries, to the members of the International Zoological Congress, and to a limited list of specialists.

Opinions Rendered.—Since October, 1909, the commission has rendered twenty "opinions" (Nos. 6–25), which are now in press and which will soon be sent to all members of the congress. A number of cases are still before the commission for study and will be passed upon in the near future. [At this point the report contained the summaries of all "opinions" rendered since the Boston meeting.]

Official List of most Frequently used Zoological Names.—There is a desire on the part of some zoologists that certain very commonly used zoological names should be excepted from the application of the *law of priority,* and a proposition to this effect has been presented to the commission from the British Association for the Advancement of Science and the Eastern Branch of the American Society of Zoologists. That this desire is so wide-spread and so deeply rooted as is assumed by some of our colleagues has not been confirmed by inquiries made by several members of the commission. Further, an effort made by the secretary to collect from zoologists the most commonly used and most important generic names has as yet met with such poor success that the conclusion does not seem entirely unjustified that some of our colleagues who may be in favor of such a list are not as yet sufficiently enthusiastic over the proposition to induce them to demonstrate their desire by placing in the hands of the commission the data upon which such a list must of necessity be based. Further, there are many colleagues who are known to us to be directly and enthusiastically opposed to such a list.

After careful consideration of the subject and of the many difficulties involved, the com-

mission has decided to propose to the congress the trial of a proposition which it is hoped will meet with the approval of both sides of the controversy, namely:

1. The commission invites all zoologists to send to the secretary of the commission, prior to November 1, 1910, a list of 100 zoological generic names which they consider should be studied in connection with the preparation of an "official list." Each name should be accompanied either by the name of the author of the generic name, or by an indication of the group to which it belongs.

2. All systematists are invited to send a separate list of the 50 to 100 generic names in their specialty which they look upon as the most important and most generally used. Each name should be accompanied by the full and complete original bibliographic reference, by the name of the type species, determined according to article 30 of the international rules, and by the name of the order and family to which the genus belongs.

3. All zoologists and paleontologists who give courses in general zoology are invited to supply the secretary with a list of the text-books used in said courses so that said books may be indexed for generic names.

4. The commission will alphabetize all the generic names sent in and will endeavor, according to circumstances, to determine which are the 100 to 500 most commonly quoted genera.

5. The genera selected will be submitted to specialists in the groups in question who will be requested to submit opinions on the nomenclatorial status of said names.

6. Upon return of the lists from the specialists, the commission will endeavor to test the names, according to the international rules, and if feasible will publish a list of the genera in question with their most commonly used names and their correct names.

7. If the undertaking is successful, the zoologists of the world will be invited to give to the commission the benefit of their criticisms not later than July 1, 1912, so that the commission can restudy the names and submit to the next congress—

8. *An official list of generic names,* with their genotypes; and with the

9. Proposition that the congress adopt said list and a

10. Resolution to the effect that no zoologist shall upon *nomenclatorial* grounds change any name in said list unless he first submits to the commission his reasons for making the change and unless the commission considers the reasons valid.

The commission believes that this proposition is feasible, but for the present views it in the light of an experiment, dependent to no small extent upon the question whether a proper amount of cooperation is forthcoming. In this connection the commission takes the liberty of inviting attention to the fact that the great advances in nomenclature have been made by colleagues who have shown a conviction in their views sufficient to induce them to devote some time to the subject.

Amendments to the "Regles internationales de la nomenclature zoologique."—In its executive sessions the commission has considered thirty propositions which have been submitted as amendments to the present international rules. Of these propositions, the commission unanimously recommends to the congress the adoption of the following:

Art. 4: For the word *root,* substitute the word *stem.*

Art. 27 (*b*): For the word *larva,* substitute the words *any stage in the life history.*

Art. 35: Insert as a third paragraph the following:

"Specific names of the same origin and meaning shall be considered homonyms if they are distinguished from each other only by the following differences:

(*a*) The use of *æ, œ* and *e,* as *cæruleus, cœruleus, ceruleus; ei, i* and *y,* as *chiropus, cheiropus; c* and *k,* as *microdon, mikrodon.*

(*b*) The aspiration or non-aspiration of a consonant, as *oxyryncus, oxyrhynchus.*

(*c*) The presence or absence of a *c* before *t,* as *autumnalis, auctumnalis.*

(*d*) By a single or double consonant: *litoralis, littoralis.*

(*e*) By the endings *ensis* and *iensis* to a geographical name, as *timorensis, timoriensis.*

Art. 36: Omit from the examples—*Macrodon, Microdon; cœruleus, cœruleus, ceruleus; silvestris, sylvestris, silvaticus, sylvaticus; littoralis, litoralis; autumnalis, auctumnalis; dama, damma.*

Appendix F: In the English and German texts, substitute the words *transliteration* and *transliterated* for *transcription* and *transcribed.*

Appendix G: In all three texts, substitute *paragraph* for *rules,* and omit from the heading in French text the words *Regles de la.*

Italian Translation.—The commission has voted to issue an official Italian edition of the international rules.

CH. WARDELL STILES,
Secretary of Commission

SPECIAL ARTICLES

PRELIMINARY NOTE ON THE PERMEABILITY TO SALTS OF THE GILL MEMBRANES OF A FISH

IT is known that when marine fishes are placed in fresh water there is a gain in weight supposed to be due to the absorption of water. Sumner (1905) has obtained evidence tending to show that the water enters the body chiefly through the gill membranes. Experiments by one of the authors of this note tend to confirm this. Sumner (1905) has also compared the chlorine content of such fishes (analyzing the ash obtained by fusing the entire fish) with the chlorine content of the normal fish and has reported a loss in chlorine, indicating that while there was a movement of the fresh water into the body of the fish through the gills there was at the same time a passage of salts outward—in other words the gill membranes seemed to be permeable to salts.

In a series of experiments carried out at the Biological Laboratory of the U. S. Bureau of Fisheries at Woods Hole, Mass., the authors have obtained further evidence along this line, experiments of the following nature being most significant. A quantity of blood was taken from the caudal artery of a large specimen of *Mustelis canis.* The specimen was then placed in a sea-water tank (the caudal part of the body not being immersed and loss of blood being prevented) and a stream of fresh water was then turned into the tank, the salt water being turned off so that it was replaced by the fresh water in about fifteen minutes. The specimen was kept in this fresh water for thirty minutes, when a second sample of blood was obtained from the caudal artery. The specimen was then returned to the fresh water for forty-five more minutes and a third sample was then taken. Analysis of the blood was begun in each case immediately after the sample was obtained. Following are the results:

Sample 1. Normal blood (*i.e.,* from fish just taken from sea-water).

Sample 2. Blood from same specimen after immersion in salt-fresh to fresh water for 45 minutes.

Sample 3. Blood from same specimen after immersion in fresh water for 45 minutes more.

GRAMS PER 1,000 GRAMS OF BLOOD

	Water	Organic Matter	Chlorides
Sample 1 =	868	118	6.041
Sample 2 =	881	110	4.132
Sample 3 =	885	104	3.590

The greater amount of water in the second sample shows a dilution of the blood. The blood is further diluted in the third sample. There is no question then about the absorption of water. Since the blood is diluted we should expect to find less organic matter. This decrease is shown in the second column and was obtained by subtracting the weight of the ashed sample from the weight of the dried sample and reducing to grams per 1,000. The actual amount of chlorides was obtained by the Volhard method and then reduced to grams per 1,000. The results are shown in the third column. Since we should expect a diminution of the salts, provided water is added to the blood, the diminution shown above may be partially explained in this way. But it can be seen at a glance that the chlorine reduction is out of proportion to the decrease in organic matter. If the organic matter is reduced from 118 to 110 by simple