Stiles that the congress should have referred the question back to the commission, with or without a recommendation in its favor. To everybody's surprise, the president put the bare question and declined discussion. Naturally, in the circumstances, the motion was carried. Certainly this was a pure mischance. There was no deep-laid conspiracy to override the commission. Looking back after the event one sees that either the chairman of the commission or its secretary should at once have protested on a point of order. Unfortunately they, like the rest of us, were taken aback by the totally unexpected action of the president. But because of a frank difference of opinion on a relatively "trivial" question (I use Dr. Stiles' own epithet), and of an unpremeditated irregularity in parliamentary procedure, it is suggested that the bonds of union are *ipso facto* broken. Whatever our particular opinions, surely we must dismiss such an idea as out of the question.

What the best alternative may be, I am not sure. It is a pity that another resolution, rather suddenly sprung on the congress, prevents it from meeting again for five years. We can not wait so long. The question of procedure might well be laid before the permanent committee of the congress, which should be competent to smooth out the difficulty. If it is not competent no local group of zoologists can undertake the decision.

Such is the situation, and such is a possible way out. I have left on one side many subjects which Dr. Stiles brought into the discussion, because I do not wish to complicate a simple issue. There is only one on which I would beg leave to say a word. Rightly or wrongly, my friend Dr. Stiles speaks as though this were a dispute between Americans and Europeans. What he means by "Americans" I am not sure. "Europeans" also is a term occasionally construed in more than one sense. However that may be, there are zoologists in Asia, Africa and Australasia who may claim consideration. Then he seems to write as though all "Americans" held (or might be expected to hold) one view, and all "Europeans" another. So far as the latter are concerned that certainly is not the case. Dr. Stiles indeed admits a divergence of view in Berlin; there is no less difference of opinion in London. We have as much respect for law as the citizens of the United States, but we set science before nationality and allow the individual a right to his opinion. We wonder at, but have not yet learned to imitate, the well-drilled organization of American zoologists.

Perhaps the contrast between our views may be made clearer if I suggest that Dr. Stiles takes an "international congress" to mean a meeting of nations through their official representatives; I take it, so far as pure science is concerned, to mean a meeting of men and women from all parts of the world, irrespective of nationality and rising above it.

F. A. BATHER,
Member of The International Commission on Zoological Nomenclature
LONDON, ENGLAND

A CONFERENCE ON HEREDITY AS APPLIED TO MAN

DR. LYON'S[1] appeal for a conference on the subject of heredity as applied to man is a most timely one and should receive the most serious consideration. That such a conference has never been held may be ascribed chiefly to two causes. The first is that some biologists (there are of course many exceptions) have been rather unwilling to accept the pedigrees of human families, which for the most part do not extend over three generations, as adequate evidence of the inheritance of certain characters. They maintain that the matings were not controlled; the genetic constitution of the parents was unknown and the results can not be accepted. They have ignored the statistical side of the problem. Although statistics has its limitations in the solving of the problems of inheritance, it may be of advantage in some places. For example, in a family in which many members had died of cancer, Pearl found that the death-rate from this disease was twice that of the population at large from the same cause. This would suggest that cancer was inherited in this family, but the proof would not be unassailable. When, however, the death-rate from cancer was calculated for the corresponding age groups from the population in general that had been represented in this family, it was found that cancer was 196 times as prevalent in this family as in the general population. Such figures leave little room for argument.

Again, when a family is reported in which a disease has been present in four or five members through two or three generations, such evidence is not always accepted as proof of heredity. When, however, to such a statement is added the fact that this disease is one which many practitioners never encounter in a lifetime of practice due to its rarity, the significance of the high incidence in one family is multiplied many times.

The second cause for the lack of interest in the subject is the ignorance of the medical profession as a whole of the importance of heredity as an etiological factor in the production of disease. Their ignorance arises through the fact that as medical students the vast majority received little or no training in the field of genetics. That which they did get held little application, as far as they could see, to the art of healing. They obtained no instruction whatever in

[1] SCIENCE, 73: 421, 1931.

that most fascinating of studies, inheritance of disease in man. The results have been that our practitioners know little about inheritance of normal characters, and less about inheritance of disease. They have even been scornful of such an idea, so that one practitioner not so many years ago indignantly demanded to be shown "a club-footed ovum," when inheritance of this defect was being discussed. They know in a vague way that certain conditions "tend to run in families," but how they run or how to investigate the history of such a family so that the record will be of value is unknown to them. There are, of course, many exceptions to this statement, but in the main it is true. Hence a meeting of biologists, statisticians and medical men should prove enlightening and stimulating to all.

Naturally, the attitude of the public on matters relating to disease is apt to be determined by their medical advisers. With the medical profession apathetic concerning the great field of preventive medicine that lies here, it is not to be wondered at that the public has little information on the subject. The average practitioner is apt to feel that the matter is outside his sphere, that the diseases showing heredity are rare, and only encountered occasionally by the specialist. The number of cases showing heredity of disease in any doctor's practice is apt to be in direct proportion to his knowledge of and interest in the subject. To the ophthalmologist, the importance must be constantly evident, yet many of them know little of inheritance. Cataract, glaucoma, optic atrophy, myopia, etc., are inherited in a great many instances, and are by no means uncommon. The neurologist has difficulty in naming ten diseases which come under his specialty without mentioning several that are inherited. The family doctor who is not a specialist encounters many cases of diabetes, gastric ulcer, anemias, hemorrhagic diseases, cancer, many of which have a background of inheritance. The numerous reports which are published showing pedigrees of these diseases do not represent the extent to which they are inherited; they merely indicate the occasional doctor who is interested in heredity. When we have educated our profession concerning the important part which inheritance plays in the production of disease; when we incorporate into their medical course a period of study embracing the fundamentals of genetics as applied to disease in man, then we may expect a more interested attitude after graduation, and a keener comprehension of the responsibility that is theirs in educating the public.

Because the whole subject is so closely bound up in the minds of the public with what we are pleased to term the "inalienable rights of man," the very attempts to study the problem calmly and sanely are thwarted by the reactionaries who insist upon placing emotion before fact. The problem must be met, and the first step toward it is the accumulation and sorting of facts which are known. How they are to be dealt with presents still another question. Dr. Lyon notes the huge sums expended by philanthropists and social organizations on the improvement of the environment, and contrasts it with the neglect shown to the study of heredity. There was an old story that in an insane asylum the patient was occasionally tested as to his ability to return to society as a normal or near normal citizen. The test consisted in the emptying of a trough of water with a bucket; into one end of the trough was pouring a stream of water through an open tap. When the patient turned this off, he was adjudged sufficiently sane to be dismissed. The increasing expenditures for our public institutions that care for the derelicts of society are beginning to pinch. Many of these unfortunates will still be with us even after we have done our utmost from both the environmental and hereditary standpoints; but in the meantime how long will society continue to expend thousands upon improvement of the trough and upon larger and more efficient buckets? When will it become sane enough to turn off the tap?

MADGE THURLOW MACKLIN

MEDICAL SCHOOL,
UNIVERSITY OF WESTERN ONTARIO

THE CULTIVATION OF A NEMATODE PARASITE OF AN INSECT

THE nematode parasite of the Japanese beetle reported by Fox and the writer[1] has been found in a limited area in New Jersey during 1929, 1930 and 1931. It has not been found in a large number of grubs obtained from other parts of New Jersey and from Pennsylvania. In the locality referred to the mortality of the beetle grubs was high during the two previous years due to the activity of the nematode.

Steiner[2] studied the parasites taxonomically and found that they belonged to the family Oxyuridae and described the form as a new genus and species under the name of *Neoaplectana glaseri*.

The nemas are cultivated on standard meat infusion agar plates containing 1 per cent. dextrose, and having a reaction of pH 7.4. Gravid, ovoviviparous females from infected grubs are placed on the surface of the plates together with a water suspension of an actively growing yeast. After two days at room temperature the surface of the plates swarms with larval nematodes which soon mature. From four to five days are consumed in the development of each generation and transfers are usually made after the second generation.

[1] SCIENCE, 71: 16–17, 1930.
[2] *J. Wash. Acad. Sci.*, 19: 436, 1929.