The academy has a membership of over four hundred, forty-five new members having been elected at the recent meeting.

OTIS W. CALDWELL,
Secretary

SOCIETIES AND ACADEMIES

THE HELMINTHOLOGICAL SOCIETY OF WASHINGTON

The fourteenth regular meeting of the society was held at the residence of Dr. Stiles, February 6, 1913, Dr. Stiles acting as host and Dr. Cobb as chairman.

Dr. Stiles presented a note on "The Value of Protozoa in Determining Fecal Contamination of Foods." *Entameba coli, Lamblia duodenalis* and *Trichomonas intestinalis* are obligate intestinal parasites having an easily recognizable spore stage. Any given case of infection is *prima facie* evidence of fecal contamination of food, and of insanitary surroundings. The indicator value of these protozoa, a thing which has been overlooked heretofore, is greater than that of *Bacillus coli.* In some parts of the south, infection with these protozoa will range from 10 to 60 per cent. of the persons examined.

Dr. Stiles presented a note by Stiles and Boatwright on "Subjective Symptoms of Thymol." The paper notes the results of 464 administrations of thymol to 244 patients, each patient receiving 1 to 7 treatments. Of the 464 administrations, 55.8 per cent. had no untoward effect; 44.2 had effects of some sort; 14 per cent. had nausea due to thymol or to Epsom salts; 13 per cent. had weakness due to thymol, Epsom salts or the lack of breakfast; 9 per cent. had a burning sensation referred to "the stomach," due to thymol; 9 per cent. had dizziness; 3 per cent. had headache; 2.8 per cent. had attacks of vomiting; 1.7 per cent. had a burning sensation in the throat; 1 per cent. had pain in the stomach; 1 per cent. complained of sleepiness. There was one case of dyspnea due to idiosyncrasy to thymol, and one of fainting due to idiosyncrasy to Epsom salts.

Mr. Crawley presented the following note on "Initial Stages of *Sarcocystis* Infection."

According to Erdman, the spore of *Sarcocystis muris* germinates in the intestine of the host and liberates a toxin, sarcocystin, which causes the adjacent digestive epithelium to be thrown off. The spore sets free an amebula which penetrates the denuded area and attains the lymph spaces of the submucosa, where it establishes itself and remains for 28 to 30 days.

My own observations indicate that the above account is far from correct. Feeding experiments carried on during the past few years show that the spore, under the form in which it occurs in the cysts, bores its way into the cylinder cells of the epithelium, occurring in some cells two or three hours after feeding, and there comes to rest. The spore changes in shape, becoming broadly elliptical or round, concomitant internal changes resulting in the production at the periphery of a row of masses of chromatin closely resembling stages in the schizogony of a coccidian. This point may be attained twelve hours after feeding. At the end of twenty-four hours the parasites appear to have abandoned the intestine.

According to my observations, the epithelial denudation mentioned by Erdman follows instead of preceding the invasion of the cells, a phenomenon well known as a sequel of heavy infections by other protozoan parasites.

Dr. Cobb presented some figures and specimens of free-living nematodes. Some marine forms have structures suggesting similar structures in insects and birds. One of them has a proboscis which might function in much the same way as analogous organs which in birds or insects are used for extracting food from flowers.

Dr. Cobb suggested that the clumsy term *lateral organ* be dropped as a descriptive term, since there are many other nematode organs which are also lateral. Since we do not know the true nature of this structure, he suggested the substitution of the new term *amphid,* which is compact, descriptive and yet non-committal as to function. For somewhat similar reasons he suggested that the *ventral gland* be called the *rennette.* Nematodes possess many other ventral glands. He has previously published a note on the urea content of this structure, thus justifying the functional implication carried by the diminutive rennette (*ren,* kidney).

The secretary presented a note by Dr. Albert Hassall, on "Nomenclatural Oddities." Certain rules of the code of zoological nomenclature are not observed by some writers, and some practises not contrary to the code are nevertheless undesirable from many standpoints. Disregard of the code and of good usage makes considerable trouble for the bibliographer, cataloguer and indexer. Common offences are: The casual introduction of unnecessary synonyms or the deliberate substitution of new names for old on grounds that never had recognition in the code; the proposal of new

names in footnotes, indices, figure labels or other out-of-the-way places; the habit of labeling a name *new species* in two or more publications; and the naming of new species by flocks of workers, so to speak, some specific names being referable to a chain of as many as five authors who have collaborated in the description.

By unanimous vote the society instructed the secretary to prepare a letter protesting against the proposed changes in the international code of zoological nomenclature which are being advocated by the German Zoological Society, and to submit the protest to the Ninth International Zoological Congress.

MAURICE C. HALL,
Secretary

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

THE 466th regular meeting of the Anthropological Society of Washington was held in room 43 of the new building of the National Museum at 4:30 P.M., February 18, 1913, the president, Mr. George R. Stetson, in the chair.

Professor W. H. Holmes read a paper on "Agricultural Implements of the Mound-builders," saying:

The rich alluvial and prairie country of the middle Mississippi Valley is especially adapted to the practise of primitive agriculture and here are found large numbers of skillfully made flint blades of large size suitable for hafting as hoes and showing unmistakable evidence of long usage in operations that gave the working end a high degree of polish. They are made of grayish flint or chert which occurs plentifully in the form of flattish nodules in southern Illinois. These nodules were readily shaped by fracture with stone hammers, and vast numbers were gotten out and worked up by the mound-building tribes. The processes of manufacture were demonstrated by the speaker and it was shown with what ease and rapidity the blades could be made.

It was also shown by examples obtained from the Missouri River tribes that hoes made of the scapulæ of the buffalo were in use in very recent times and that the hoes found in excavating ancient sites near Omaha correspond with these recent Indian forms in shape, manner of hafting and surface polish, and that both display, although in bone, precisely the same kind of polish and markings as do the similarly shaped hoes of flint. It was suggested that these flint hoes were modeled after scapular hoes, since these were in general use by the tribes and have doubtless been in use from very early times among all the tribes advanced to the sedentary agricultural status of culture.

Referring to questions of antiquity which have been raised recently in regard to the burials of the Omaha district, it was suggested that since the buffalo was a comparatively recent arrival in the Mississippi Valley, a culture in which the bones of buffalo are represented must be younger, not older, than that of the mound-builders, since no traces or pictorial representations of the buffalo are found within the older Indian mounds.

This paper was briefly discussed. Mr. Stetson read notes on certain implements lately found in Britain. Professor Holmes commented concisely thereon.

Professor Holmes then read a paper on "Scope and Relationships of History and Archeology."

The second paper embodied in outline a study of the nature and scope of archeology and of archeological research as related to the field of human history as a whole. The history of man, or anthropology, according to Powell's classification, may be considered under seven heads or departments, giving rise to as many branches of research, as follows: somatology, psychology, philology, sociology, sophiology, technology and esthetology. In working out its problems each of these seven branches employs every available agency of research within and without its particular field and makes use of every form of record in which the history of man is embodied.

The records or sources of information to be drawn upon in these researches are comprised under two principal heads: intentional or purposeful records, on the one hand, and non-intentional or fortuitous records, on the other.

The intentional records are of four forms, as follows: (1) pictorial or pictographic; (2) commemorative, taking the form of monuments; (3) mnemonic, in the form of tradition and lore, orally transmitted; (4) inscribed or written records. Fortuitous records take numerous forms: (1) the diversified material results of human activities in which the commemorative motive is absent, but which comprise the great body of the products of handicraft; (2) the immaterial results of human activity as embodied in language, beliefs, customs, music, philosophy, etc.; (3) the ever-existing unpremeditated body of memories which accrue to each generation and are in part transmitted adventitiously; (4) the record em-

bodied in the physical constitution of man which when properly read tells the story of his development from lower forms; (5) the record of intellectual growth and powers to be sought and studied in the constitution of the mind; (6) the environments which reveal the story of the nurture and building up of the race throughout the past.

It is from these diversified records of present and past times that the story of the seven grand divisions of the history of man must be drawn. Archeology stands quite apart from this classification of the science, traversing in its own way the entire field of research. It claims for its own more especially that which is old or ancient in this vast body of data. It is even called upon to pick up the lost strands of the earlier written records, as with the shadowy beginnings of glyphic and phonetic writing, and restore them to the historian. It must recover the secrets of the commemorative monuments, the tombs and temples intended to immortalize the now long-forgotten great. It must follow back the obscure trails of tradition and substantiate or discredit the lore of the fathers. It must interpret the pictorial records inscribed by the ancients on rock faces and cavern walls which men meant should last forever. All that archeology retrieves from this wide field is restored to human knowledge and added to the volume of written history.

The services of archeologic science are equally potent in the field of the fortuitous records of humanity, for it reads that which was never intended to be read. The products of human handicraft, present and past, which have recorded automatically the doings of the ages are made to tell the story of the struggles, the triumphs and the defeats of humanity. The fortuitous records embodied in the non-material products of man's activities of to-day, although in themselves not antiquities, are made to cast a strong light on the history and significance of the material things of the past. Even the body of knowledge gathered from many sources and stored in the memory of the living, though unreliable and transient as a record, may be made to illumine the past; and the physical and psychical characters of man are in themselves records and may be made to tell the story of their own becoming and to explain the activities and the products of activity throughout the ages. All that archeology gathers from this wide field of research is added to the volume of written history.

In the great work of assembling the lost pages and completing the volume of the history of man, archeology may well claim first place among the contributing sciences.

This paper was discussed by Messrs. Casanowicz, Carroll, Stetson, Babcock, Hewitt, Swanton and Neumann.

A SPECIAL meeting of the Anthropological Society of Washington was held March 6, 1913, at 4:30 P.M., in the auditorium of the new building of the National Museum, the president, Mr. George R. Stetson, in the chair.

Dr. Walter Hough read a paper on "Savage Mutilations for Decoration."

The paper was a short excursion into the enormous field of custom with regard to ethnic mutilations, and sufficient examples were given to lay the subject rather completely before the society. In it were described the most striking forms of head shaping by pressure in infancy; the various forms of teeth mutilations; ear, nose, cheek and lip modifications and ornaments; pressure and mutilations in the arms, waist and limbs, and modifications of the bones of the feet. With mutilations also should be considered, perhaps, extraordinary hair dressing and treatment of the finger nails.

Many slides were shown of tattooing, scarification and decoration of the skin by means of dyes and pigments, and some of their multifarious meanings given. On the whole, it was concluded that ethnic mutilations originated from many concepts, the more important being a desire for identification, in some cases individual, but in most cases tribal; a desire for ornamentation, mainly individual in its treatment, but following environmental and tribal fashions; and also very important mutilations growing out of superstitious and religious ideas.

Many ethnic mutilations also relate to sex, puberty, social rank, honor for warlike feats and the like. All these ideas, which at times have been advanced as the explanation of the causes, show that the matter is extremely complex. The bearing of ethnic mutilations on primitive surgery was also hinted at, as well as its effects on the development of costume.

Dr. Williams and Dr. Swanton made certain inquiries and brief appurtenant remarks, which Dr. Hough answered.

WM. H. BABCOCK,
Secretary