be due to the transfer of the cult to a locality where serpents do not exist.

In reference to the human remains collected by Dr. Fewkes, Dr. Hrdlicka said that a comparison of the Porto Rican skull with South American skulls shows it to be like specimens from Brazil. In answer to an inquiry from Dr. Lamb, Dr. Fewkes said the bones were found in a mound near Utuado.

Under the head of voluntary communications, Dr. Hrdlicka suggested that archeological and anthropological work be carried on at Panama in connection with work on the canal.

The secretary presented data on the destruction of ruins in the southwestern United States, and suggested that the movement for their preservation inaugurated some years ago be revived. After a brief discussion in which the president, Dr. Kober, Dr. Fewkes and Dr. Hrdlicka took part, the matter was postponed to the next meeting. WALTER HOUGH,

*Secretary.*

## *DISCUSSION AND CORRESPONDENCE.*

### THE ANIMAL PARASITE SUPPOSED TO BE THE CAUSE OF YELLOW FEVER.

TO THE EDITOR OF SCIENCE: In your issue of October 23, 1903, you publish a communication from Mr. J. C. Smith, of New Orleans, in regard to the animal parasite in the bodies of mosquitoes infected from yellow-fever subjects. While the article is on its face contradictory and unsatisfactory, its burden is to claim the credit for scientific work to which he is not entitled. It reflects unfairly and unjustly upon Professor George E. Beyer, associate professor of biology in Tulane University, who was the biologist of the working party of the yellow-fever institute of the U. S. Public Health and Marine-Hospital Service, which made the investigations in Vera Cruz in 1902.

Professor Beyer is an acting assistant surgeon in that service, and for that reason can make no publication in the matter.

In the first paragraph of the article Mr. Smith claims that he was 'the first to have correctly interpreted and given value to the things found in the bodies of the mosquitoes infected from yellow-fever patients.' After setting forth this claim, he closes with the vastly more modest claim that he was entitled to have printed in the report of the working party an acknowledgment of his valuable services in working out the sexual life history of the parasite.

Mr. Smith fixes January 23, 1903, as the time when his assistance was asked, and his work was performed subsequent to that date.

The facts are that the working party discovered the animal parasite in mosquitoes infected from yellow-fever subjects in the summer of 1902, that they classified and named the parasite, illustrated it with drawings, and sent the drawings in November, and a preliminary report to the Surgeon-General in July of 1902, nearly six months prior to the time fixed by Mr. Smith. This report is an official record, is on file in Washington, and of itself shows that Mr. Smith was neither the discoverer nor the first correctly to interpret the parasite.

The eighth paragraph of the article does a particular injustice to Professor Beyer. It says: "Up to this time (January 23, 1903) Professor Beyer, who was the biologist of the party, knew of no evidence of a parasite in these mosquitoes, excepting some granular bodies, as they were styled, which were found in the cell of the salivary glands, and which I afterward showed the party were not granular bodies, but were linear bodies, five or six times longer than wide, the sporozites. On January 30 [1903] I reported having found in the bodies of a number of the mosquitoes an animal parasite in process of sexual development."

Professor Beyer had found this parasite six months before the time fixed by Mr. Smith as the day when he saw it in slides loaned him by Professor Beyer and known by the latter to contain the parasite. A number of physicians were acquainted with the discovery, its interpretation and value, in the summer and fall of last year. Dr. N. Del Rio in a statement acknowledged before the American Consul at Vera Cruz, June 8, 1903, says that as delegates of the Superior Board of Health of Vera Cruz, he, Dr. Matienzo and Dr. Iglesias were, during June and July, 1902, shown by Professor Beyer in the stomach and

glands of mosquitoes infected with yellow fever, an animal organism which the members of the American Commission classified as a Protozoan of the order of Coccidiida.

Dr. Henry R. Carter, a distinguished surgeon of the Public Health and Marine-Hospital Service, in a letter dated October 31, 1903, says that while attending the Public Health convention in New Orleans, on December 12, 1902, he visited Professor Beyer's laboratory in Tulane University, with several other physicians, and was shown a number of slides under the microscope. These showed, Professor Beyer told him, sections of the stomach walls, thorax and salivary cells of mosquitoes, with bodies which Professor Beyer claimed were the coccidium, and explained the stages in detail. Dr. Carter says that unquestionably, at that time, Professor Beyer claimed that his slides showed the sexual stages of a coccidium and that he had demonstrated the sexual cycle of a coccidium in the infected *Stygomyia fasciata*.

The proof that the work which Mr. Smith claims to have done in January of this year was all originally done in the summer of last year by the working party of the U. S. Public Health and Marine-Hospital Service is so clear that it is difficult to see how Mr. Smith could set up such a claim. The letter of Dr. Pothier which he prints in his article is contradictory of his claim.

Mr. Smith was consulted in January of this year and corroborated the work already performed. Ratification by a man of his undoubted high scientific knowledge was valuable. Professor Beyer has willingly counseled giving Mr. Smith all due acknowledgment, and has never sought to withhold all that he was entitled to, that is, due recognition of his assistance in demonstrating the life cycle of the parasite.

Mr. Smith has never published any interpretation of the coccidium different from the working party's. It is hard to see, therefore, how he was the first correctly to interpret the discovery when his interpretation was the same as that made by the working party months before.

I ask that you publish this refutation of Mr. Smith's claims in the same manner as his article. This request is made with no wish to provoke a controversy, but solely with a view to correcting an injustice.

I also suggest that a warning note be issued by you against a too hasty conclusion that the animal parasite discovered in infected *Stegomyia fasciata* be accepted as the cause of yellow fever. The working party's report makes no such claim. Surgeon-General Wyman recently issued a letter pointing out that this claim is not made. The value of the discovery of the coccidium lay in the fact that it pointed out a path for future investigation.

H. W. Robinson.

New Orleans,
November 28, 1903.

## *SHORTER ARTICLES.*

### THE NEW COSMICAL METEOROLOGY.

With every fresh outburst of large spots on the surface of the sun there is likely to be a sympathetic disturbance in the terrestrial magnetic and electrical fields, a change in the weather conditions of the world, and a recrudescence of popular interest in the subject. Speculation as to the causal connection between this solar action and the terrestrial effect is apt to become extravagant, even going to the length of seeking to identify particular spots on the sun with individual storms on the earth. This procedure overlooks some facts in the chain of events which in reality bind the two phenomena together, and it is the purpose of this paper to present in a somewhat orderly form the sequence as at present understood.

It has been found necessary to include both the sun and the earth in our meteorological research, and properly so, because the atmosphere of the sun is at work in sending energy, and the atmosphere of the earth is receiving energy, each through its process of convection and radiation. By these agencies, a special circulation is sustained in the atmosphere of the sun, and another in that of the earth, and the energy of one passing into the other binds the two together in a single cosmical thermal engine. Solar physics and astrophysics are evidently only other names for meteorology, which embraces all atmos-