and the following papers were presented in the order given:

DR. WILLISTON: 'The Fossil Man of Lansing, Kansas.'

DR. LUDWIG HEKTOEN: 'The Memorial Institute for Infectious Diseases: Its Purposes and Plans.'

DR. SHINKISHI HATAI: 'The Development of the Ventral Nerve Roots in the White Rat.'

DR. C. B. DAVENPORT: 'Recent European Work on Experimental Evolution.'

DR. P. BASSOE: 'A Case of Gigantism and *Leontiasis Ossea*' (illustrated).

DR. L. HEKTOEN: 'A Case of So-called Congenital Rickets' with lantern slides.

DR. E. O. JORDAN: 'The Recent Epidemic of Typhoid Fever in Ithaca, N. Y.'

DR. L. F. BARKER: 'The Morbid Anatomy of Two Cases of Hereditary Ataxia' (family described by Dr. Sanger Brown).

DR. H. G. WELLS: 'Fat Necrosis from the Standpoint of Reversible Enzyme Action.'

DR. A. P. MATHEWS: 'On the Nature of the Action of Salts on Protoplasm.'

DR. E. P. LYON: 'Experiments in Artificial Parthenogenesis.'

DR. CHAS. INGBERT: 'An Enumeration of the Medullated Nerve Fibers in the Dorsal Roots of Spinal Nerves of Man.'

DR. S. A. MATHEWS: 'The Diuretic Effect of Combined Salt Solutions.'

THE June number of the *Biological Bulletin* contains the following articles:

AXEL LEONARD MELANDER and CHARLES THOMAS BRUES: 'Guests and Parasites of the Burrowing Bee *Halictus*.'

J. B. JOHNSTON: 'The Origin of the Heart Endothelium in Amphibia.'

J. W. SCOTT: 'Periods of Susceptibility in the Differentiation of Unfertilized Eggs of Amphitrite.'

ARTHUR W. GREELEY: 'Further Studies on the Effect of Variations in the Temperature on Animal Tissues.'

BENNETT M. ALLEN: 'The Embryonic Development of the Ovary and Testis of the Mammalia' (preliminary account).

DISCUSSION AND CORRESPONDENCE.

ANTARCTICA.

TO THE EDITOR OF SCIENCE: In the *Geographical Journal of London* for May, 1903, there is a four-and-a-half-page review by Dr. Mill of my monograph 'Antarctica.' May I crave space in SCIENCE to bring before American scientists some of the points touched on?

Dr. Mill says: 'Mr. Balch surely does not need to be assured that no British geographer would dream of withholding credit from any explorer on the ground of his nationality, least of all if that nationality were American.' Let me answer this by some instances.

During the last six decades certain European geographers have made repeated attempts to decry Wilkes and his officers. As late as 1901, Lieutenant Colbeck, of the Royal Navy, now commanding the *Morning*, published in Mr. Borchgrevink's book, 'First on the Antarctic Continent,' a chart on which the southward track of the *Southern Cross* is marked as between 161° and 162° east longitude down to 66° south latitude, a spot at least three degrees distant from the most easterly point of Wilkes Land. The *Southern Cross* then sailed eastward and never approached Wilkes Land proper at all. Nevertheless Lieutenant Colbeck called his chart "Track of Sy. 'Southern Cross' over Wilkes Land."

Sir Clements R. Markham has made, during the last twenty years, many a disparaging statement about Wilkes and his men. Finally, in his article in the *Geographical Journal* for November, 1899, he says: 'The Victoria Quadrant first presents, for examination, the lands sighted by Balleny and Dumont d'Urville from 118° E. to the Balleny Islands in 162° E., namely, Adelie and Sabrina lands.' *Wilkes is not mentioned.* In other words, in this case the president of the Royal Geographical Society ignores absolutely American discoveries and American explorers.

Dr. Mill himself, it seems to me, is not quite fair to Fanning, upon whose veracity he casts reflections, not only in his present review, but also in the February number of the *Geographical Journal.* There is no reason whatever to impugn the veracity of Fanning, who was an American, as was Morrell, whom Dr. Mill also attacks, and it is worth while calling attention to the fact that Dr. Mill does not attack a single English explorer.

Dr. Mill finds fault with me because I

think Cook's voyage of less importance in antarctic geography than Wilkes' voyage. He says: "If such extraordinary reasoning were to be allowed, one might say far more justly of the first transatlantic voyage: 'North America was not discovered,' a fact which would seem to rank the voyage of Columbus as of much less importance than the voyage of Cabot.'" But if Dr. Mill had compared the voyage of Columbus with the voyages of Columbus' predecessors, his simile would have been exact. A number of men sailed westward before Columbus, but their efforts produced no tangible result beyond showing that the ocean was a big space of water. But Columbus brought out the fact that there were great lands in the west, and for this he justly gets deserved credit. In the same way Cook only found ocean and ice round the South Pole, while Wilkes first discovered the existence of an Antarctic continent, and he, therefore, like Columbus, is entitled to the credit of the discovery.

Dr. Mill states that I have 'done a patriotic service, and also a service to science, in setting out the real achievements of Charles Wilkes,' and for this I beg to thank him. But he says I claim for Wilkes 'first discovery.' I have never claimed that Wilkes was the first to sight land in the Antarctic. On the contrary, I think it may have been Don Gabriel de Castiglio in 1603, or perhaps some entirely forgotten mariner whose possible discovery of West Antarctica before 1569 may have been the origin of the 'Golfo de S. Sebastiano' on the charts of Mercator and Ortelius. What I claim for Wilkes is that he was the first to discover land masses which were probably continental in their dimensions, and the first to announce to the world the existence of the probable South Polar continent. And every Antarctic discovery since the time of the American Exploring Expedition goes to show that Wilkes was correct.

Dr. Mill says that I am 'unjust to the memory of Sir James Clark Ross.' He does not specify how, but he apologizes for Ross as follows: 'We feel sure that Ross was not aware of Wilkes' orders dated 1838 at the time he wrote of the American and French expeditions.' Yet Ross had read Wilkes' 'Narrative,' for he quotes it repeatedly. Of the long and serious investigation I made of Sir J. C. Ross' charges against Wilkes—in which I stated that Ross paid no attention to the statements nor to the charts published by Wilkes, but quietly started a grievous error, and also that none of Wilkes' discoveries were disproved by Ross for the simple reason that Ross never was within sighting distance of any part of Wilkes Land—Dr. Mill does not say a word, and by his silence, therefore, he assents to my conclusions.

Edwin Swift Balch.

THE SPECIFIC HEAT OF MERCURY.

To the Editor of Science: May I direct attention to a corollary to the recently published work of Messrs. Barnes and Cook on the specific heat of mercury?* In these experiments a slender thread of mercury was heated by passing a current through it, and the results agree fairly well with other results obtained by previous experimenters who heated mercury in the ordinary way. The agreement might be still closer if the other results were as accurate as those of Messrs. Barnes and Cook. Petterson and Hedelius (quoted in the article referred to) failed to work accurately enough to detect the decrease of the specific heat with rise of temperature, and Regnault even thought the change to be in the opposite direction. As it is, the results agree well enough to show that, to about one part in 300, *the specific heat is not altered by the passage of a current.*

This fact, I think, can hardly be self-evident, and is worth an experimental proof. Specific heat is known to vary with temperature, *i. e.,* rapidity of agitation of the molecules, and experiments along this line may give us a clue to the nature of conduction, whether this takes place entirely through the intermeshed ether, or partly by a motion (twisting or otherwise) of the particles.

That the same is true for water as for mercury has been shown by the experiments

* *Physical Review,* February, 1903.