to give particular attention to those areas where ticks were known to be not very abundant because, where no other cause was evident, parasites might account for the small number of ticks. With laboratory headquarters at the Veterinary Research Laboratory at Onderstepoort, Transvaal, collecting trips were made to various parts of the Union of South Africa and ticks were obtained from all the provinces. Some three weeks' collecting was done also in the Province and Protectorate of Kenya, in the region near Lake Naivasha.

Well over fifteen hundred animals were examined, including many large and small wild animals, and approximately eight hundred tubes of ticks, including some thirty-four species, were collected. An *Ixodiphagus,* closely related to and possibly identical with *I. caucurtei* Du B. of France, was discovered preying on *Hyalomma aegyptium* L. in the Transvaal. This parasite was recovered several times and for the first time it was possible to make a study of an *Ixodiphagus* in a colony of the insects under natural conditions.

The recovery of *Ixodiphagus* and the studies made on the species were considered to be of enough interest to repay for the venture, but the trip resulted in other discoveries which may prove to be of the greatest importance. Six days after the writer sailed from Durban *en route* to Mombasa, Dr. G. A. H. Bedford, entomologist in the veterinary laboratory staff, discovered a chalcid which attacks adult ticks. These insects are not yet named and almost nothing is known about them. Some weeks later, on the occasion of a visit to South Africa, Dr. Robinson, Cooper's parasitologist, when told of the parasite work now being done in South Africa, stated that some years ago he had received a box of adult *Amblyomma hebraeum* Koch from Cape Province and on arrival in England the box was found to contain adult chalcids which had emerged in transit. He further stated that the insects were evidently of a species different from the one discovered by Dr. Bedford, which Dr. Robinson had an opportunity to examine. This chalcid likewise has not been named or studied. It is therefore reasonably certain that there exist in South Africa two new chalcid parasites of adult ticks which the writer did not have opportunity to study.

Through Mr. C. B. Philip, of the West African Yellow Fever Commission, Rockefeller Foundation, Lagos, Nigeria, Africa, we have learned also of the recent discovery of a colony of an unidentified tick parasite in Nigeria.

The parasite expedition to Africa has indicated that the continent is a promising field for further search. A thorough study of the parasites in Africa will be a necessary preliminary to their importation into America.

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BOZEMAN, MONTANA

QUOTATIONS

DR. WELCH'S "APOTHEOSIS"

WHAT the Grecians called "apotheosis," said Bacon, was "the supreme honor which man could attribute unto man." In that definition of the word, the supreme attribution of honor to Dr. William H. Welch to-day becomes his apotheosis. The nation pauses to give him its highest praise while he still lives. Another great physician, Sir Thomas Browne, in his "Religio Medici," said that he cared for not so much as the bare memory of his name to be found anywhere after his death save in "the universal register of God." But fame pays little attention to the prayers of those whom she delights to honor. It is he among teachers who has overcome that "last infirmity"—the desire to be remembered—that is most likely to be chosen. Dr. Welch has gone his way doing what his kindly genius has suggested without other prompting than the appeal of the thing that needed to be discovered or done for humanity.

He has been called "a first citizen of the scientific world." He has three major achievements to give substance to the distinction that will outlive the personality which has made him both loved and admired. He organized the faculty of the Johns Hopkins Medical School nearly fifty years ago and the Johns Hopkins School of Hygiene and Public Health fifteen years ago. Then, with an undaunted spirit which discredits the general theory of his associate, Dr. Osler, he began when he was almost twice forty years old to develop the history of medicine as a new discipline in the training of physicians, with a library as his laboratory. The fourscore years have not abated his "eternizing passion" in the warfare against the enemies of man's bodily health and social welfare.

The substance of his achievement has been illumined by an old-time spirit of scholarship and graced by an art which is the "happy science of the soul." Like the one who is mentioned by Theocritus in his tribute to Asclepius, the father of medicine, Dr. Welch "put all his art into the work." That is his special distinction. He is both scientist and artist in the highest meanings of both words.

Hippocrates found life short and the art of healing long. Fortunately the life of this great modern physician who took early the Hippocratean oath has been lengthened to make more serviceable to his fellow-beings the art of healing, in both its preventive and its curative ministries. There is nothing left to wish him but still more years in the practice of this art before he "goes to the stars."—*The New York Times.*

SCIENTIFIC APPARATUS AND LABORATORY METHODS

HEAT TRANSMISSION THROUGH BLANKETS

SOME three years ago I was approached by a large manufacturer of blankets with the request to devise a method for measuring the "heat-retaining property" of blankets. These tests were to be not only for the sake of determining the coefficient of heat conduction of various kinds of blankets, but especially for the purpose of obtaining some data on the basis of which blankets could be improved.

There were, of course, the usual well-known methods available, but it seemed desirable to test larger samples than were generally used and also under conditions which more nearly resembled actual usage. Since what we may call the "normal conditions" for a blanket in use are based on body temperature and room temperature, I devised an apparatus in which the heated body was kept at 37° C. (98.6° F.) and surrounded by air at the temperature of a cool room, 13° C. (55.4° F.). The apparatus finally took the form shown in Fig. 1.

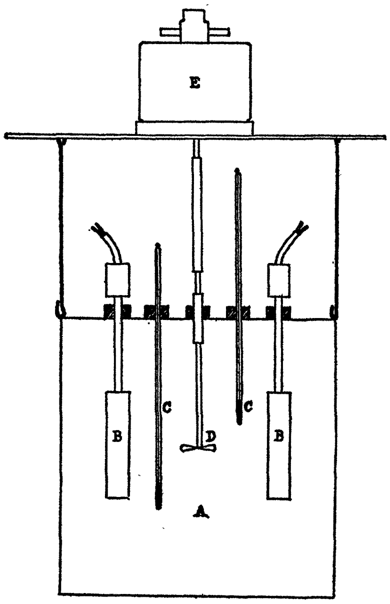

FIG. 1

A is a copper vessel 12 x 12 x 3½ inches, rounded at the sides and bottom and closed with a flat plate at the top. In the plate are five apertures from which are suspended by rubber or cork stoppers two immersion heaters B, two thermometers C and an agitator D, run by a motor E. The thermometers are placed so that one has its bulb a few inches below the center of the body and the other as much above. The vessel is filled with water, and when the stirring device is in motion the difference between the two thermometer readings is about 0.1° C. The body is suspended from the upper shelf of the food compartment of an electric refrigerator and the stirring motor is placed on this shelf and connected to the propeller shaft by rubber tubing. The temperature of the air in the food chamber is controlled by a Tagliabue Snapon controller, the bulb of which is not in the brine but in the food chamber, behind the body and near the back wall of the refrigerator. This control gives a maximum variation of about 1½° C. from mean.

The energy is supplied to the heaters by a storage battery and measured by a precision voltmeter and ammeter. The temperature of the body is measured by the two thermometers C, and the temperature of the box by two thermometers not shown in the figure, one placed in front of the body near the door and the other near the right-hand wall of the refrigerator. A cardboard screen placed directly inside the door of the refrigerator and low enough to enable the reading of the thermometers prevents the cold air from rushing out when the door is opened for observations.

The procedure in making tests is as follows. The blanket to be tested is cut in the form of a rectangle 17 x 32 inches and pinned into the shape of a bag which fits over the body snugly but without strain. It is drawn on from below and pinned together at the top, allowing B, C and D to project through. The current through the heaters is now adjusted until the average temperature of the body is 37° C. This of course takes a considerable length of time. The temperature of the box is constantly changing with the turning on and off of the compressor, and inasmuch as an increase above 13° decreases the flow of heat through the blanket and a decrease below 13° increases the flow of heat, there is an accompanying variation in the temperature of the body even though the power supplied remains constant. The rate of variation is of course the same as that of the refrigerator but there is a slight lag. The amplitude of variation of the body temperature depends upon the insulating quality of the blanket used and becomes unnoticeable in case of the "warmest" ones. The rate of change of the refrigerator temperature depends upon the quality of the blanket used and the room