

SIR WILLIAM B. HARDY, director of the Low Temperature Research Station of Biochemistry at the University of Cambridge, who will deliver the Abraham Flexner Lectures for 1931 in the Vanderbilt University School of Medicine, will arrive in Nashville to begin his work on February 15. Sir William will remain in residence at the School of Medicine for a period of two months, during which time he will lecture to the students and faculty of the School of Medicine, and will possibly deliver some public lectures. The Abraham Flexner Lectureship was established in the Vanderbilt University School of Medicine in 1927 by Dr. Bernard Flexner, of New York City. The lectureship brings in alternate years a scientific man of international reputation to the School of Medicine. Dr. Heinrich Pohl, director of the Anatomical Institute of Hamburg, delivered the first lectures during the spring of 1928.

THE Galton Lecture, entitled "Warnings from Nature," will be given by Sir J. Arthur Thomson before the Eugenics Society, London, at the Galton Anniversary Dinner on February 16.

THE Hunterian Lecture was delivered before the Hunterian Society of London on January 19, by Dr. Arnold Lorand, of Carlsbad, on "The Problem of Rejuvenation."

THERE will be held in Rome, from June 3 to 7, an International Scientific Congress on Population in connection with the Second General Assembly of the International Union for the Scientific Investigation of Population Problems, this congress to be open to scientific papers by non-members as well as by members of the International Population Union. The congress will be divided into the following sections, for the reading of scientific papers, subject to possible changes as the plans develop: biology, demography, economics, anthropology, sociology, history, methodology.

THE eleventh summer session of the American School of Prehistoric Research will open in London

on Wednesday, July 1, 1931, and close on the continent about September 8. The program includes lectures by the director and by foreign specialists, study of museum collections, excursions to important prehistoric monuments and sites, and actual experience in digging. Countries to be visited include southern England, France, Switzerland, Germany and Czechoslovakia. Students will have digging practice in a Paleolithic rock shelter (Dordogne) France. The last four weeks of the term will be devoted to digging in Neolithic and Metal-Age sites of Czechoslovakia; this part of the program will be in charge of Dr. V. J. Fewkes, of the University Museum, Philadelphia, assisted by Robert W. Ehrich, of Harvard University. Preference will be given to applicants who have a knowledge of French and German and who already have a bachelor's degree. Those who wish to enroll should apply immediately. Applications and requests for further information should be addressed to Dr. George Grant MacCurdy, Director, American School of Prehistoric Research, Peabody Museum, New Haven, Connecticut.

THE Eighth Congress of the Far Eastern Association of Tropical Medicine opened at Bangkok, Siam, on December 8. British India and the various provinces were represented by nine delegates, all Europeans. Japan, Formosa, Korea and Kwantung together sent seven; the Dutch East Indies five; the Straits Settlements, Federated Malay States, Hongkong and Indo-China three each; the Philippines two; other countries represented being Hawaii, British North Borneo and Macao. China was the only far eastern country not represented. The League of Nations was represented by Professor B. Nocht, and the Rockefeller Foundation by Dr. Victor G. Heiser. Some 177 medical men took part. The King of Siam sent a message of welcome and the congress was formally opened by the Minister of the Interior. The president elected for this congress was the King's physician (Prince Thavara), who in his address sketched the history of both old and modern medicine in this country.

## DISCUSSION

### THE VAMPIRE BAT

BLOOD-FEEDING bats in tropical America are mentioned by some of the earliest writers following the conquest of South America.<sup>1</sup> The exact species of these bats responsible for attacking man and other animals apparently remained unknown until Charles Darwin,<sup>2</sup> naturalist, on the memorable voyage of the

<sup>1</sup> Flower and Lydekker, "Introduction to Study of Mammals, Living and Extinct," p. 676, 1891.

<sup>2</sup> "Journal of Researches into the Natural History and Geology of the Countries Visited during the Voyage of H.M.S. *Beagle* Round the World," p. 22, 1838.

*Beagle*, caught one in the act. He writes under the entry of April 9, 1832:

The Vampire bat is often the cause of much trouble, by biting the horses on their withers. The injury is generally not so much owing to the loss of blood as to the inflammation which the pressure of the saddle afterwards produces. The whole circumstance has lately been doubted in England; I was therefore fortunate in being present when one (*Desmodus d'orbigny*, Wat.) was actually caught on a horse's back. We were bivouacking late one evening near Coquimbo, in Chile, when my

servant, noticing that one of the horses was very restive, went to see what was the matter, and fancying he could distinguish something, suddenly put his hand on the beast's withers, and secured the vampire. In the morning the spot where the bite had been inflicted was easily distinguished from being slightly swollen and bloody. The third day afterward we rode the horse, without any ill effect.

Concerning the vampires, Flower and Lydekker write:

These Bats present, in the extraordinary differentiation of the manducatory and digestive apparatus, a departure from the type of other members of the family unparalleled in any of the other orders of Mammalia, standing apart from all other mammals as being fitted only for a diet of blood, and capable of sustaining life upon that alone. Travellers describe the wounds inflicted by the large sharp-edged incisors as similar to those caused by a razor when shaving: a portion of the skin being shaved off and a large number of severed capillary vessels thus exposed, from which a constant flow of blood is maintained. From this source the blood is drawn through the exceedingly narrow gullet—too narrow for anything solid to pass—into the intestine-like stomach whence it is probably gradually drawn off during the slow process of digestion, while the animal, sated with food, is hanging in a state of torpidity from the roof of a cave or the inner side of a hollow tree.

The sanguivorous nature of the vampires has thus long been known to mammalogists, but so far as I recall, these bats have never been referred to as among the parasites of man or other mammals. If many of the blood-sucking arthropods, such as the bedbug, are parasites, surely the vampires must be so classed.

The vampires range in distribution from Mexico, through Central America and throughout the warmer parts of South America. Several forms of them are known, being placed in three genera, *Desmodus*, *Diphylla* and *Diaemus*, the last known only from Brazil and Guiana. Contrary to popular belief, these bats are of small size, the length of head and body being but about three inches. They are fairly common in many places and consequently must do considerable biting in order to exist.

No instance is recalled in which their attacks on human beings have resulted in more than trifling annoyances. Goldman<sup>3</sup> quotes Dr. Linnaeus Fussell, who had medical charge of a U. S. Government surveying party in eastern Panama in 1870 as follows:

The bites of vampire bats should be referred to, as the stories told of them are by many deemed rather apocryphal. We were troubled with them more or less during the whole time we were out, but ordinarily they

<sup>3</sup> "Mammals of Panama," Smith. Misc. Coll., Vol. 69, p. 209, 1920.

did not prove a serious annoyance; toward the latter part of our trip, however, someone was bitten almost every night; one night, the 13th of May, nine men were bitten. The men were rarely awakened by the bites, which, however, bled freely, sufficient blood being usually lost to saturate the clothing and to show its effects very perceptibly in the loss of color and general feeling of weakness experienced.

The same manner of attack and the apparent lack of sensation in the act of biting is described by William Beebe.<sup>4</sup> He says of them:

For three nights they swept about us with hardly a whisper of wings, and accepted either toe, or elbow, or finger, or all three, and the cots and floor in the morning looked like an emergency hospital behind an active front. In spite of every attempt at keeping awake, we dropped off to sleep before the bats had begun, and did not waken until they left. We ascertained, however, that there was no truth in the belief that they hovered or kept fanning with their wings. Instead they settled on the person with an appreciable flop and then crawled to the desired spot.

Although the vampire bats must be regarded as among the free-living or temporary ectoparasites of man and other mammals, they can scarcely be regarded as more than curiosities in the field of human medicine. They are very much more easy to secure protection from than are mosquitoes and bedbugs. It has never been shown that they are carriers of any infection. In the field of animal husbandry they may at times be of more than passing interest.

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#### CONCERNING EARLY DIAGNOSIS OF WHOOPING COUGH

BEFORE diagnosis is attempted by the cough-plate method,<sup>1</sup> the beginner should master three important technical steps:

(1) The medium should be sterile, bright red and the surface should not be dry.

(2) A series of Petri dishes should be inoculated with *B. pertussis* and the small, discrete, round, elevated, shiny gray colonies should be studied from day to day. On the third to fifth day the colony approximates 1 mm in diameter and is surrounded by a zone which appears translucent in transmitted light and darkened in reflected light.

(3) Duplicate plates should then be exposed to early cases of known pertussis. Over-growth by mouth saprophytes can in part be avoided if the child drinks water just before the plates are exposed. An

<sup>4</sup> "Edge of the Jungle," p. 18, 1921.

<sup>1</sup> L. W. Sauer and L. Hambrecht, "Whooping Cough—Early Diagnosis by the Cough-Plate Method," *J. A. M. A.*, vol. 95, p. 263, July 26, 1930.