Laboratory methods were non-existent in the camps, and the prevailing disease was called indigestion, malaria or typho-malaria, rarely by its true name—typhoid fever. At the close of the war a commission, consisting of Majors Walter Reed, V. C. Vaughan and E. O. Shakespeare, was appointed to investigate the outbreak. The final report of that commission was prepared by Dr. Vaughan, the only surviving member. It was a classical contribution to the epidemiology of typhoid fever. This report forcibly attracted attention to the necessity of conducting future military campaigns under strict hygienic conditions. In the interval between this and the recent war improved diagnosis and immunization made it possible to avoid this terrible scourge.

Upon our entry into the late war, Dr. Vaughan was again called upon to give his services. As one of the board in charge of the communicable diseases in our camps, he served with ability and distinction, receiving the rank of colonel, the Distinguished Service medal and the decoration of the French Legion of Honor. More recently he was the recipient of the Kober medal. His work during the two wars brought him full recognition as a leading epidemiologist.

As a member of the National Research Council which came into being at the request of President Wilson, Dr. Vaughan participated in the work of that body by his wise counsel and his vast experience.

It is as an instructive and inspiring teacher that Dr. Vaughan will be remembered by the thousands of students who had the opportunity and privilege of listening to him. He freely drew upon his experiences in life and by his masterly presentation made the lectures interesting and forcible.

Unquestionably the greatest service which he rendered to the cause of medical education came during his tenure of the deanship. At the time that he entered this office the new laboratory methods of instruction were just coming into their own. With his clear foresight he recognized the importance of having productive scientific men upon the faculty, and it was this fact which enabled him to get together men of outstanding ability, thus placing the medical school of the university in the front rank of the schools in the country.

Dr. Vaughan's interest in the investigations of his colleagues was not less than that in his own researches. He lived, so to speak, in the laboratory and was never so happy as when a new fact or result rewarded his work. He loved his fellow men and freely gave of his time and energy. As a scientist and educator he was among the first. He has left an enduring impress in both fields. A great leader, a constructive thinker and a broad idealist is gone.

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MEMORIALS

The British Medical Journal reports that a memorial tablet has recently been placed on the house of Dr. Aloys Pollender (1800–79) at Wipperfürth, Westphalia, who described the anthrax bacillus in 1849, a year before C. J. Davaine, who is generally credited with its discovery.

WE learn from the London *Times* that in the City Church of the Ethelburga, Bishopsgate, where Henry Hudson, the navigator, took his last communion, a second window in his memory was unveiled on November 28. The ceremony was performed by Mr. Albert Halstead, the American consul-general in London. The new window, designed and executed by Mr. Leonard Walker, shows Henry Hudson exploring the Hudson in his ship, *The Half-Moon,* and finding some Indians who welcomed his approach. At the base of the window are represented various animals, including the beaver and the skunk, indigenous to North America.

RECENT DEATHS

MATURIN LIVINGSTON DELAFIELD, originally of New York, who for the last twenty-five years has resided in Lausanne, known for his work in botany, died on December 18, at the age of sixty-one years.

DR. SAMUEL RIDEAL, known as a chemist and an expert on sanitary science, died suddenly in Southern Rhodesia, on November 13, at the age of sixty-six years.

DR. AUGUST TOBLER, director of the geological section of the Natural History Museum in Basel, Switzerland, one of the leading European workers on the geology of the East Indies and also of northern South America, died on November 23.

THE death is announced of Professor Angelo Ruffini, professor of histology and general physiology at the University of Bologna.

SCIENTIFIC EVENTS

GOLD, SILVER, COPPER, LEAD AND ZINC IN THE EASTERN STATES

THE total value of the mine production of gold, silver, copper and zinc (value of lead is excluded) in the Eastern States in 1928 was $23,867,816, according to final figures for the year compiled by J. P. Dunlop, of the U. S. Bureau of Mines. There was an increase in both quantity and value of the above metals, al-

though the average price of zinc was lower in 1928 than in 1927.

The quantity of crude ore treated in 1928 was 3,770,070 tons, which was about 569,000 tons more than in 1927. Only about 200 tons of gold ore were treated; the larger portion of the remainder was zinc ore, lead-zinc ore and copper ore sent to concentrating plants. The total quantity of copper ore concentrated and directly melted amounted to 833,325 tons. The pyritiferous magnetic ore of Pennsylvania yielded a large output of copper concentrates containing some gold and silver.

The mine production of gold increased from $17,074 in 1927 to $35,097 in 1928. The gold recovered from placer mines was $820 from small mines in Georgia, North Carolina, South Carolina and Tennessee. There was more development at gold lode mines in 1928 than in 1927. Siliceous ores, all from Georgia and North Carolina, yielded $1,120 in gold; pyritiferous magnetite ore from Pennsylvania yielded $20,506 in gold, and copper ore from Tennessee and North Carolina yielded $10,810 and $1,841 in gold, respectively.

With the exception of 16 ounces, all the silver output (102,501 ounces) in 1928 from lode mines was derived from copper ore and pyritiferous magnetite ore. Tennessee yielded 75,556 ounces, North Carolina 19,040 ounces and Pennsylvania 7,905 ounces. Placers yielded 3 ounces of silver.

The quantity of copper produced increased from 22,327,734 pounds in 1927 to 29,559,146 pounds in 1928. The output from Pennsylvania was 4,977,885 pounds and the remainder was from ore smelted by the Tennessee Copper Co., and the Ducktown Chemical & Iron Co., in Polk County, Tennessee. About half the copper recovered at Tennessee smelters was from copper ore mined and shipped from the Fontana mine in Swain County, North Carolina.

As there was only one shipper of lead ore or concentrates in the eastern states in 1928 the output can not be given. Lead-zinc ore was mined and milled at the Austinville mine of the Bertha Mineral Co., in Wythe County, Virginia.

The mine production of zinc increased from 118,170 tons in 1927 to 144,045 tons in 1928, most of which is derived from zinc ores containing little or no lead. The large producing zinc properties in the eastern states are those owned by the New Jersey Zinc Co., in New Jersey, the St. Joseph Lead Co., in St. Lawrence County, New York, the Bertha Mineral Co., in Wythe County, Virginia, and the American Zinc Co., of Tennessee, at Mascot, Jefferson County, Tennessee. Other shippers of zinc ore, mainly carbonates, in 1928 were the Universal Exploration Co., F. C. Caldwell, and the Embree Iron Co., all of Tennessee.

COLLECTIONS FOR THE FIELD MUSEUM FROM EASTERN ASIA

THE work of the William V. Kelley-Roosevelts Expedition to Eastern Asia for the Field Museum of Natural History has been concluded with the return of Herbert Stevens, leader of the last of its several divisions to remain in the field, according to an announcement made by Stephen C. Simms, director of the museum.

Mr. Stevens is now at the museum supervising the work of unpacking the collections he brought back, comprising some 500 mammals, about 1,100 birds, some 500 reptiles and fishes, approximately 5,000 butterflies, 2,000 moths, 500 beetles and bugs and about 10,000 flowers, plants and shrubs. Many of these are rare species, some unknown to science. These collections were made by him during a little less than a year's journeyings through the Chinese provinces of Yunnan and Szechuan, and along the Tibetan border. In the course of his work Mr. Stevens traveled more than 1,700 miles by trail across China, about 1,000 miles on foot and in addition traveled many miles by water. He was the only white man in his division of the expedition, and headed a caravan of native skinners, porters and other servants, with a train of pack animals consisting sometimes of yaks, but more often of mules and ponies. At times only human porters could be used.

The country which Mr. Stevens traversed is infested with bandits, and inhabited by a half-starved population suffering from the chaotic conditions in China. The journey through this region was fraught with many perils, but Mr. Stevens and his caravan came through all difficulties safely. At one time between camps their food supplies ran short, and for some three weeks they were forced to live on half rations, but by piecing out with food intended for bait in animal traps they were able to tide over until new provisions could be obtained.

Mr. Stevens, who was formerly connected with the British Museum, started into the interior with Colonel Theodore Roosevelt and Kermit Roosevelt, who were in command of the expedition as a whole. He separated from them to perform his special work shortly after entering Yunnan. From then on most of his traveling was done in a mountainous country averaging between 10,000 and 15,000 feet elevation, intersected by many rivers and heavily forested in many places. The larger part of it was in the land of the strange and exclusive Tibetan lamas, who despite their forbidding reputation Mr. Stevens found quite hospitable, though he could never be sure when trouble might arise. It is a land practically untouched by civilization, with no ordinary means of transport or communication, no Christian missionaries and much