end of five years, when he should have felt that he had found himself and his problem, he believed that he was in a *cul de sac* and was ready for a change.

A year ago he was asked to take part in the reorganization of the medical school of the Chulalongkorn University in Bangkok, Siam, and accepted the appointment as professor of physiology. The opportunity, which this position seemed to hold out, to take up again problems in physiological zoology was welcome and the prospects which the tropical environment of Bangkok offered were not distasteful to his adventurous nature. At the same time he felt keenly the obligations which he was assuming toward the Siamese university and devoted the entire summer to preparing himself in those aspects of medical physiology with which he had not previously had experience. The enthusiasm with which he came to look forward to going out to Siam was well justified. From boyhood his avocations had developed him into a skilled field naturalist. He was very fond of shooting and fishing and was one of those persons with the knack of finding game where no one else had thought to look for it. His physique was exceptional; he had been an excellent athlete and could come back from a long day's hunting without a sign of tiring. With his rather broad knowledge of zoology and physiology as a background for these proclivities it seemed fair to hope for original accomplishment from him in the tropics. And in addition there was little fear that the inertia which so often comes with life in warm climates would quell the exuberance of his energies.

In October he moved his family, which had been enlarged by the addition of a daughter the year before, to Bangkok. He was very happy there; perhaps more happy than he had been anywhere before. He liked the place and the climate. He made friends there, as he always did readily. He felt that the opportunities for research were exceptional and that everything was coming his way at last. He was planning to investigate the oestrous cycle in monkeys, and had received a grant from the National Research Council in support of this work. During the spring he made three expeditions into the jungle for the purpose of collecting material for his studies. On all these trips he suffered some hardships—was in fact lost in the jungle without food for thirty hours on one occasion—but felt no ill effects which he could not, in his vigorous way, disregard. Apparently his energy and self-confidence led him to neglect the necessary safeguards of his health and he had become worn down by his activities more than he realized. In June, while in the midst of preparing a report on his research work, he became ill. Septicemia, resulting from the extension of an infection contracted on his first jungle expedition, had developed and in two weeks he was dead.

So ended the scientific career of Reynold Spaeth, before the promise of his early years could be fulfilled. But on another side he left a full achievement. For Spaeth developed richly the charms and virtues of his personality. He had a natural gift for entertainment: could sing and play and draw and mimic with a gentle humor which made him most engaging company. Eager, assured, a thoroughgoing individualist, with ready, witty tongue and quick insight he gave his mind openly to others, yet with a generosity and patent frankness which saved him from bitterness toward those he could not hold with. For one so prone to action his mind was philosophical and in a true sense religious. But most of all he had a zest for living. In the intensity with which he lived his life there was perhaps some recompense for its too short duration. For in the joy of life he never forgot the discipline of scholarship and was ever loyal to his scientific conscience.

ALFRED C. REDFIELD

SCIENTIFIC EVENTS

MEMORIAL TO VINAL NYE EDWARDS

ON September 1 there was unveiled at the Woods Hole Bureau of Fisheries a bronze tablet in memory of the late Vinal Nye Edwards. The *Fisheries Service Bulletin* states that Mr. Edwards was associated with the bureau and the Woods Hole laboratory from 1882 up to the time of his death in 1919, a period of nearly forty-seven years. It was he who first showed Professor Spencer F. Baird the marine life of the Woods Hole region, and it is probable that Woods Hole was selected as the site for the first biological laboratory of the newly established Fish Commission mainly because of the information Mr. Edwards was able to give. He was engaged as collector for the laboratory during all his long term of service, and his intimate acquaintance with the life of the region proved an invaluable aid to the advancement of biological investigation.

The movement to erect a memorial to Vinal Edwards was initiated in July, and the response in the form of contributions and interest was so immediate and generous that an order was soon placed for the tablet. The arrangements were in charge of a committee of which Dr. Edwin Linton was chairman. Dr. Linton himself has been associated with the Woods Hole laboratory since its beginning and was intimately acquainted with Mr. Edwards. The other members of the committee were G. R. Hoffses, Dr.

Herbert Rand, Franklin Gifford, Alice Smith Cowdry, Dr. R. P. Bigelow and Dr. W. H. Rich.

The tablet occupies a place in the main hall of the laboratory building. On it are inscribed the dates of Mr. Edwards's birth and death and the following words:

This memorial to Vinal Nye Edwards is erected by his friends as a mark of their esteem, in recognition of his gifts as a naturalist and of his services to science.

The exercises were held on the lawn between the laboratory and the residence buildings and were well attended by the residents of Woods Hole and associates of the Marine Biological Laboratory as well as by the staff of the Bureau of Fisheries. The presentation address was made by Dr. Linton, who quoted from the many laudatory letters received from well-known American biologists who had known and worked with Vinal Edwards. The speech of acceptance was made by Lewis Radcliffe, deputy commissioner, and the unveiling was by Madison Edwards, a brother of Vinal Edwards.

A CALIFORNIA OIL WELL

DR. FREDERICK P. VICKERY, of the Southern Branch of the University of California, writes that on September 25 the Miley Oil Company's No. 6 well, located at Athens, Los Angeles County, California, reached the climax of a career of record breaking by becoming a producing well at a depth of 7,591 feet.

Some of the records established by this well are as follows: (1) Depth 7,591 feet. The deepest hole ever drilled, as well as (2) deepest oil well in the world. (3) Landed 4¾-inch, No. 15, casing at 7,591 feet. The longest string of pipe ever set. (4) Cemented 4¾ through perforations at 7,305. The deepest cement job ever attempted. (5) Took formation cores from depth of 7,570 feet and recovered perfect samples of good oil sand.

The well was drilled with rotary tools in a total of 230 working days, an average of 33 feet per day. The total cost of drilling, including labor, material and overhead, was $164,000, or $21.60 per foot.

The following casing was set:

15½-inch, No. 70, cemented at 988 feet.
8¼-inch, No. 36, cemented at 5,289 feet.
4¾-inch, No. 15, landed at 7,591 feet and cemented through perforations at 7,305 feet.

The well is producing about 150 barrels of 37° Be gravity oil per day with 20 per cent. of salt water. A gas lift is used to make the well flow, as pumping was considered impracticable on account of the depth.

THE FIELD MUSEUM EXPEDITION TO MADAGASCAR

A TWO-YEAR expedition to Madagascar, in search of the origins of the races now inhabiting the island, was started on October 15 by Ralph Linton, assistant curator of ethnology of the Field Museum of Natural History. He will work among the descendants of the Fatimite Caliphs who were driven out of Arabia and Egypt in the eighth century, and will also attempt to prove by an exploration of the entire island that it holds many of the oldest features of Malayan culture.

The peoples of Madagascar have long furnished a problem for ethnologists and archeologists. They are of mixed cultures, inclusive of three apparently main elements—Bantu negroes from Africa; the Hovas of Malay stock and a fringe of Arabs all along the coasts, the descendants of the Fatimite Caliphs. These three elements are sub-divided into fifteen or more main tribes which, in turn, are divided again into smaller partially distinctive groups. There are also hints of a pygmy element among the populations.

Mr. Linton, in his two-year stay, will explore the entire island, living with the tribes and making collections of their culture, ceremonials and domestic life which, when made the subject of scientific study, will show the history of the people despite their mixed bloods. The most extensive research will be made among the southern tribes who, despite the advanced stage of French activity on some parts of the island, are almost unknown to white men.

The natives of the island are expert in metal, textile and pottery making, and have for many centuries worked the gold mined on the island. A silk producing moth, unlike the Asiatic worm, is also cultivated. Beautiful cloth and baskets are woven from raffia, a fiber.

Mr. Linton will sail from New York and go first to London. He will spend two weeks in England, visiting and studying the Madagascar material in museums. He will also spend three weeks in similar work in France, sailing from Marseilles on December 10, and arriving in Tamatave, Madagascar, on January 7. Antananarivo, the capital of the island, will be used as the base for the expedition, which will immediately start work in a radius of that city.

SCIENTIFIC NOTES AND NEWS

DR. F. HENRY SMITH, professor of natural philosophy at the University of Virginia, celebrated his ninety-sixth birthday on October 14.

THE well-known histologist, Professor Camillo Golgi, of Pavia, recently celebrated his eighty-second birthday.