plete the existing "service fellowships" in the universities, which alone were available at that time, and which did not leave a student free for scientific work. The new fellowships thus created made possible among many others the early investigations of Frédéric Joliot. Intrigued by Claude Bernard's dictum that the mechanism of life might be elucidated by the study of physical-chemical phenomena, Edmond de Rothschild went further and created an enlarged endowment of 50,000,000 francs for an institute where physicists, chemists and biologists, working together, might attack this problem. Four scientists, Jean Perrin, Pierre Gérard, André Job and André Meyer, formed the permanent committee of this institute. Enlarging the original plan, a regular research organization was proposed. Four grades corresponding to university positions were planned: Boursiers (fellows), chargés de recherches, maîtres de recherches and directeurs de recherches, which would permit a man to devote himself to scientific research without giving part of his time to instruction.

THE "CONSEIL SUPERIEUR DE LA RECHERCHE"

To select the personnel and direct the expenditure, it was decided on the suggestion of Jean Perrin to form a committee of eminent scientists representing all the main branches of science, who would be willing to devote themselves to these tasks without remuneration. The proposed annual budget required by this scheme was estimated at 40,000,000 francs, of which 20,000,000 would be devoted to paying the salaries of the workers and 20,000,000 to defraying the cost of equipment. In June, 1930, Edouard Herriot, convinced by Perrin of the importance of such an organization for the national defense, asked for an appropriation from the chamber of 20,000,000 francs. An annual appropriation of 5,000,000 francs was granted and the "Caisse Nationale des Sciences" was set up. In 1931, research fellows were appointed and a committee was set up which was divided into subcommittees of ten to twelve members for each of the main branches of science. In 1933, the "Conseil Superieur de la Recherche" finally came into being.

The various sections during the first year appointed more than 200 investigators, and the 5,000,000 francs were found quite insufficient. Its appropriation was then increased to 7,500,000 francs, with the understanding that one sixth of this sum should be devoted to the humanities. In 1935, the laws in connection with the devaluation of the franc resulted in a reduction of the budget by 25 per cent. and abolished the special tax devised by Emil Borel. However, the period of difficulty was followed in 1936 by the appointment of Irène Curie-Joliot to the newly created office of undersecretary for scientific research in the government of Léon Blum. For the first time in the world, the claims of science as an essential national activity could have direct access to a government. After a few months, Irène Curie-Joliot was succeeded by J. Perrin, and the annual budget was increased from 11,500,000 to 26,500,000 francs. In 1937, thanks to the support of the minister of national education, Jean Zay, the budget was increased to 32,500,000 francs. To insure a stable organization and at the same time avoid every tendency to excessive bureaucracy, scientific directors have replaced civil service officials wherever possible.

Among the projects undertaken by the organization may be listed: the observatory for astrophysics at Forcalquier; the national chemical institute now being built at Ivry, the laboratory for atomic transformations which is a development of the laboratory of Joliot at the Collège de France, the laboratory for low temperature research at Bellevue, and in quite a different field, an "Institut des Textes." It also arranged the science exhibits at the International Exposition of 1937.

To be sure, the present annual budget of approximately 32,500,000 francs does not enlist in the service of science more than a small part of the native talent; however, the rapid increase in the budget in recent years marks a fundamental change of attitude. In France, the old belief has vanished that a true scientist lives in poverty and does marvels with makeshift equipment.

CYTOARCHITECTURE OF THE GORILLA BRAIN

THE late Alfred W. Campbell (1868–1937) made one of the first, and certainly the most adequate, comparative study of cytoarchitecture of the anthropoid cortex. His well-known book, "Histological Studies on the Localisation of Cerebral Function" (1905), was based upon brains of the chimpanzee and the orang which had been supplied to him by Sherrington and Grünbaum. He had not had opportunity at this time to take up the gorilla, and since it is generally believed that the cytoarchitecture of the gorilla brain has never been studied, it seems worth while to direct attention to a little-known paper on the subject published by Campbell in 1916 after he returned to Australia. In it, incidentally he modified his earlier views on the olfactory fields. The reference is as follows:

ALFRED W. CAMPBELL. "Histological Studies on the Localisation of Cerebral Function. The Brain of the Gorilla." *Reports from the Pathological Laboratory of the Lunacy Department, New South Wales Government*, 3: 20–35, 1916.

A copy of this report has just been sent to the writer of this note by the inspector-general of mental hospitals at Sydney, and I shall be glad to make it available through photographic reproduction to any student

of cytoarchitecture. The entire hemisphere was analyzed, and the paper is illustrated with five excellent plates. Campbell's first paragraph reads as follows:

In my work on the localisation of cerebral function, published in the year 1905, it formed part of my task to compare the cortex cerebri of homo with that of two members of the anthropoid ape family, namely, the chimpanzee (*anthropopithecus troglodytes*) and the orang-outang (*simia satyrus*). Through the kindness of Professor C. S. Sherrington, of Liverpool University, I have since been provided with the right cerebral hemisphere of a gorilla (*anthropopithecus gorilla**), which I have examined on lines similar to those followed in the original investigation, and as such specimens are difficult to obtain, and I believe this is the first to be submitted to such examination, I am prompted to offer the following report and ask that it be taken as an addendum to what I have already written.

* The animal was young, almost a baby, accordingly the myelinisation of the cortical nerve fibres was incomplete and imperfectly developed nerve cells (neuroblasts), especially in the deeper parts, were abundant. But, although the specimen differed in this way from those of the other apes examined, the determination of the various areas in which we are interested was not interfered with.

Dr. T. C. Ruch, whose forthcoming bibliography of all primate literature is being made ready for press, informs me that Campbell's study of the gorilla brain is the only complete survey in the literature. An account of Campbell's life will be found in the *Archives of Neurology and Psychiatry,* 40: 566–568, 1938.

J. F. FULTON

LABORATORY OF PHYSIOLOGY,
YALE UNIVERSITY SCHOOL OF MEDICINE

OCCURRENCE OF THE ORIENTAL RAT FLEA IN THE INTERIOR OF THE UNITED STATES

THE oriental rat flea, *Xenopsylla cheopis* (Rothschild), which is the chief transmitter of bubonic plague to man, was first reported from the interior of the United States by Roudabush and Becker.[1] They took many specimens of this flea during the year 1934 from rats shot on the dumping grounds of the city of Ames, Iowa. Next it was reported from the Middle West by Owen,[2] who found a dairy barn at the University of Minnesota Farm, St. Paul, heavily infested. The present writers now report the occurrence of this flea from two additional mid-western states, Illinois and Ohio.

Among the fleas in the collection of the Illinois State Natural History Survey were found eleven females and six males of *Xenopsylla cheopis,* which were taken by M. D. Farrar at Urbana, Illinois, on December 1, 1937, in elevator refuse. The Ohio record is based upon three females and three males sent in for identification from Youngstown, Ohio. They were taken in an office on August 10, 1938, by E. A. Berglund, and were reported to be biting men and causing considerable discomfort.

Opinion has held that this tropical rat flea can not flourish in temperate climates. Its presence for years in large numbers in the warmer port cities of the United States without being recorded from the interior of our country would appear to have justified such a conclusion. However, being now known from four of our central states, Iowa, Minnesota, Illinois and Ohio, a revision of such an opinion appears to be necessary. There is a possibility that a more resistant race of this flea has been developed in some of our northern ports, such as New York and Boston, and from there has spread to the Central States.

H. E. EWING

BUREAU OF ENTOMOLOGY AND
PLANT QUARANTINE,
U. S. DEPARTMENT OF AGRICULTURE

IRVING FOX

IOWA STATE COLLEGE

[1] R. L. Roudabush and E. R. Becker, SCIENCE, 80: 97, 1934.

[2] W. B. Owen, *Jour. Parasitology,* 22: 512, 1936.

SCORPION STINGS

I HAVE read with much interest the contribution by H. L. Stahnke on "The Venomous Effects of Some Arizona Scorpions" in the issue of August 19. A brief account of personal experience may have interest.

About 20 years ago I was stung on the top of my right foot, just at the base of the little toe, at about 10 o'clock at night. A small red spot appeared and pain began promptly, increased in volume, and soon the entire foot seemed to ache. There was only slight swelling then or later. The pain gradually diminished during the following day.

The most pronounced effect was what appeared to be a nervous reaction. As I naturally am a heavy sleeper and was tired physically, I do not know what happened during the night. The next morning, however, the tips of my fingers, toes and ears and the point of my nose and my chin throbbed and twitched noticeably. There was a slight itching sensation and also somewhat the same feeling that a foot has after being "asleep."

The twitching was a definite muscular reaction, and the extremities actually moved spasmodically. This continued during the first day but gradually diminished during the course of the second day after the stinging.

After the attack, the scorpion retreated into a deep crevice in an unfinished portion of the room and could be seen but not captured. It appeared to be about 3½ inches long. This occurred at the Federal Plant Industry Field Station near San Antonio, Texas.

It should be noted that I am markedly resistant to some poisons. I am practically immune from poison ivy infection, very resistant to local anesthetics and