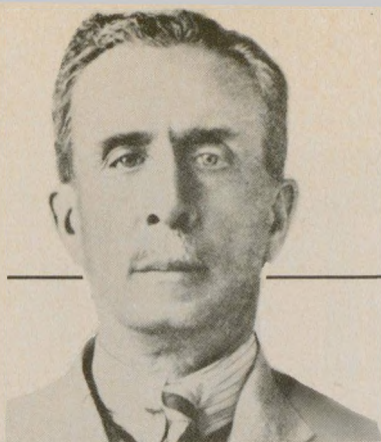




DR. CARLOS CHAGAS

CHAGAS' CENTENNIAL

■ This month is the 100th anniversary of the birth of Carlos Chagas, the only researcher who singly described the etiologic agent, insect vectors, some of the wild hosts, epidemiology, and manifestations of a human disease. He discovered the widespread parasitic infection, now known as Chagas' disease or American trypanosomiasis, when he was conducting an antimalaria campaign in the Brazilian village of Lassance, in 1909, and he noted that local huts were infested with large numbers of triatomines or "kissing bugs." Examining these blood-sucking insects, he found their posterior intestines teeming with a new species of trypanosome, which he later named *Trypanosoma cruzi*.

After detecting the flagellates in the circulation of monkeys, Chagas confirmed the presence of the parasites in the blood of a feverish child living in a house with a swarm of the biting insects and a trypanosome-infected cat. Subsequently the physician-microbiologist observed 22 acute cases of the disease and performed autopsies on more than 100 patients who had exhibited chronic forms of the infection. Reporting his findings to the National Academy of Medicine in Rio de Janeiro in 1911, Chagas referred to the disease, which is characterized by an acute, febrile, edematous stage and chronic cardiac, gastrointestinal or neural disturbances, as "a new world in pathology."

Despite many years of research, efforts to develop a curative or prophylactic drug or preventive vaccine against Chagas' disease have not succeeded. The resistant flagellates are transmitted in the feces of at least 12 species of triatomines to approximately 150 species of wild mammals as well as human beings in an area ranging from the southern United States to Argentina and Chile. Of 35 million people living in regions where the disease is endemic, an estimated 7 million are infected with the organisms.

Parasitologist's Progress. The son of a coffee planter and grandson of a physician, Carlos Ribeiro Justiniano Chagas was born July 9, 1879, in Oliveira in the Minas Gerais section of Brazil. Initially he planned to become a mining engineer, but in 1895 he developed a vitamin B deficiency and during his illness he was persuaded by a maternal uncle, who was a leading surgeon, to study medicine. At the Medical School of Rio de Janeiro, Chagas' chief interests were malaria and yellow fever, but after obtaining his M.D. in 1903 he maintained a general practice in the city until he went to Santos in 1905 to control malaria among workers building a port.

In 1907 Chagas became a staff member of the institution founded by Oswaldo Cruz, who later asked his young colleague to direct the antimalaria campaign in Lassance. During his two years in this vil-

lage, which was then the terminal of the projected Central Railway, Chagas lived in a railroad car. Shortly after he presented a paper on "A New Human Trypanosomiasis" to the National Academy of Medicine, Chagas was visited in Lassance by a group of distinguished physicians. A member of the party, noted clinician Miguel Conto, at a dinner in the village offered a toast to the parasitologist and baptized the new trypanosomiasis "Chagas' disease."

Following his stay in Lassance, Chagas spent ten months studying tropical diseases in the Amazon Basin. When Cruz died in 1917, Chagas succeeded his mentor as director of the Institute at Manquinhos and also became head of Brazil's health department. In that capacity he established programs to combat tuberculosis, leprosy, syphilis, malaria, and malnutrition. For his contributions, he received the Schaudinn Prize, an award from the Pasteur Institute, and honorary degrees from Harvard and the University of Paris.

Chagas had angina and died suddenly while he was working in his laboratory on November 8, 1934. His son and namesake studied medicine and at the age of 26 became full professor of biophysics at the University of Brazil in 1936. A specialist in studies of electric eels and curarization, he introduced the use of electron microscopy and radioisotopes into his country.