

## BACTERIOLOGY

# Germ of Smallpox Believed Found by English Scientist

## British Association Hears of Physiological Behavior Of Tiny Spheres, One-Fifth Micron in Diameter

**D**EMONSTRATION that the germ of smallpox is probably a minute spherical body one hundred-and-twenty-five-thousandth of an inch, or one-fifth of a micron, in diameter, near the lower limit of microscopic visibility, was announced before the meeting of the British Association for the Advancement of Science by Prof. J. C. G. Ledingham, director of the Lister Institute of London.

This climaxes the medical war against smallpox, which began with Jenner's discovery of vaccination, long before Pasteur founded bacteriology. Although smallpox has been a disease absolutely controlled for decades, incongruously enough its causative organism has been heretofore unknown. For a quarter of a century, minute spherical bodies have been found in certain virus diseases, such as smallpox and cowpox, but these have always been ignored. Their agglomerations constitute large inclusions which are striking features in the body cells and in the pox lesions of patients.

Prof. Ledingham made practically pure suspensions of minute bodies from fowlpox and vaccinal lesions, and found that they reacted specifically with serum from animals that had recovered from attacks of fowlpox or vaccinia. He also demonstrated the presence of specific agglutinins in the blood serum of a rabbit inoculated with vaccinia. Agglutinins are substances of as yet unknown nature whose presence in the blood causes bacteria and other foreign bodies to gather together in clumps.

Prof. Ledingham believes "that in a fairly large group of virus diseases of both plants and animals such minute elementary bodies are very likely to be found if carefully sought. Such demonstrations would materially assist the study of virus infections whose infective particles are below microscopic vision."

The cultivation of virus vaccinia in a medium containing no living cells was

announced by Dr. G. Hardy Eagles of the Lister Institute. He used a medium composed of extract of rabbit kidney, rabbit blood serum and salt solution. This first successful attempt to cultivate a virus in a cell-free medium may eventually allow the production of vaccinia in the laboratory instead of in experimental animals. It is also important from a theoretical viewpoint.

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## PSYCHOLOGY

## Orang-Utan Excels Other Monkeys in Mental Test

**L**OTS OF MONKEYS can perform the simple trick of pushing over a cup to obtain the food which they have seen hidden under it, although that is not so easy—for a monkey—when more than one cup is used and the tempting morsel placed under only one. In fact the object-under-the-cup test is

one which is used in testing ten-month-old human infants.

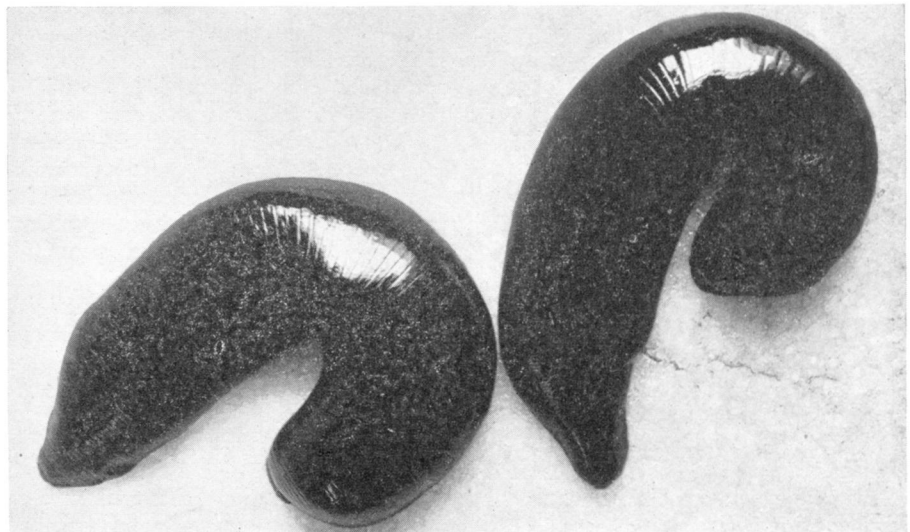
But a psychologist at the University of Wisconsin raised the question, can a monkey select the right cup and obtain the food if he is not allowed to reach the cups right away but is forced to wait several seconds or minutes. Dr. Harry F. Harlow tried it out on a number of different kinds of primates at a zoo.

Among the animals tested were an orang-utan, a gibbon, four macacus rhesus, two Java monkeys, a mona monkey, two ringed-tail monkeys, a sooty mangaby, two green monkeys, three mandrills, three baboons, and a lemur. Since the experimenter and the cups and food were outside the cages, it was only necessary to keep the apparatus holding the hidden bait out of reach of the animals and to move it up to the bars at any time desired.

The dunce of the class proved to be the lemur. Although he learned to push over a cup to obtain his treat, he could not pick the right cup from two after even a momentary delay. Honors were carried off by the orang-utan. He was successful after ten-minute delays, the longest that were attempted.

A number of more difficult problems involving transposition of the containers, and discriminating between amounts of food under different cups were also solved by some of the animals.

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### WHAT ARE THEY?

*We have all heard of leeches, those big worms whose insatiable sanguinary appetites used to be exploited by older generations of doctors in the days when phlebotomy was a sovereign remedy for a whole host of symptoms. But how many of us have ever seen one? They still exist in the wild state, clinging to rocks in ponds and sluggish streams; once in a while a scared small boy emerges with one or two of them clinging to his bare leg. But the day when they occupied an honored place in every 'pothecary-shop window is past. Only the tireless and sharp-eyed field naturalist deliberately seeks them now. Here, Cornelia Clark's camera has caught two of them, curled up asleep.*