

MEDICINE

New Serum Successful in Treating Undulant Fever

Inoculation with Material Produced From Goats Is New Weapon Against Animal-Borne Disease

TWENTY undulant fever patients quickly restored to health and normal activity by the use of a new serum constitute the proud record reported by a group of Cincinnati medical scientists to the American Society of Tropical Medicine.

The serum was produced from goats after inoculating them with chemically treated suspensions of the organisms that cause the disease. Drs. W. B. Wherry, A. E. O'Neil and Lee Foshay of the University of Cincinnati College of Medicine and the Cincinnati General Hospital are the group responsible for this advance in the fight against undulant fever.

The disease is a serious, long-drawn-out affair which may end fatally. It is caused by an organism known by various names, *Bacterium melitensis* being a correct technical title. Neuralgic pains, swelling of the joints, recurring attacks of fever, weakness and anemia are unpleasant features, and particularly unfortunate for the sufferer is the tendency for the disease to become chronic, with frequent relapses and very slow recovery.

Goats, cows and pigs suffer from the disease, and it is from these animals, particularly from unpasteurized milk of the first two, that man contracts undulant fever. The relation between the animal disease and the human disease and the value of pasteurization of milk as a preventive measure were established by Alice Evans of the U. S. Public Health Service. In the course of her research she herself suffered a severe attack.

Treatment of undulant fever has remained unsatisfactory until the development of the anti-serum by the Cincinnati scientists.

So far the serum has been given to only twenty-six patients, a small number, Dr. Foshay pointed out in his report. But the results in over two-thirds of the cases have been "extremely gratifying" and the lack of success in

six cases was partly due, he believes, to the fact that in the first cases the serum used was not strong enough or not given in large enough doses or given too late.

To be successful, it is important that the serum be given before the end of the fourth month of the illness, Dr. Foshay emphasized as a result of experience with these first twenty-six patients. Delay in starting anti-serum treatment was responsible for some of the failures, he said.

In the twenty patients who were benefitted by the serum, the fever stage was reduced from the usual weeks-long period to an average of only nine days. Other symptoms disappeared within from one to six weeks, with an average of fifteen days. The patients were able to resume their customary activities in from eight days to two months, with an average of three weeks. They have been free from relapse for periods ranging from four months to twenty-nine months, or over two years.

The success with this serum has encouraged the scientists to try to produce from the horse a more powerful and reliable anti-serum.

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PSYCHOLOGY

"Brain-Trusters" Are Not Congenitally Superior

IN THIS day of changing social and political systems, it is reassuring to find scientific justification for our American democracy, based as it is on the doctrine that all men are created equal and are therefore entitled to equal shares in the privileges and responsibilities of government.

Speaking before the American Association for the Advancement of Science at Pittsburgh, Dr. David Wechsler, chief psychologist of Bellevue Hospital, New York, made a strong case for democracy.

The doctrine of equality does not

mean, and nobody today would insist it to mean, that there are no mental and physical differences, Dr. Wechsler said. No one doubts that some men are physically stronger or have more retentive memories or better mechanical ability than others. But ruling out the obvious defective and the rare genius, the differences between men are too small to affect the average person's capacity to take part in the social and political institutions that govern his daily life.

Dr. Wechsler presented results showing men to be after all pretty nearly equal in a great variety of functions ranging from strength of grip and memory span to polishing spoons and knitting sweaters.

"It is not true," Dr. Wechsler concluded from his tests, "that there is inevitably a small percentage who are congenitally so superior to others as to make them the inevitable rulers of their fellowmen. Furthermore, even if this were the case, there is little evidence to show that the ruling classes are exclusively or even preponderantly composed of such individuals."

He doubts whether the I.Q.'s or mental ages, if obtainable, of the "brain-trusters" in the various governmental departments would turn out to be greater than those of "their less conspicuous predecessors" in similar offices. What distinguishes the "brain-trusters" from their predecessors in office is probably not a difference of native ability but a difference of attitudes toward social problems.

An aristocracy of brains might be as oppressive as an aristocracy of brawn, or even more so, Dr. Wechsler said, pointing out that the mischief produced by dictatorships does not hinge on whether they are autocracies of brain or brawn but on the fact that they are autocracies, that is, forms of government wherein the average man and hence human beings in general are negligible and contemptible entities.

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PHYSICS

New Method Helps Recover Radioactive Materials

SCIENCE has turned junkman and recovered thousands of dollars of valuable radioactive products from which gamma rays, so useful in cancer therapy, may be obtained.

Prof. George B. Pegram and Dr. John R. Dunning of Columbia University reported to the physical section

of the American Association for the Advancement of Science that the heavy ray-producing element polonium had been recovered from old radon tubes obtained from Memorial Hospital in New York City. In one test polonium equivalent to \$2,100 was obtained by the new method. Polonium is the radioactive element discovered by the late Madame Curie, who, with her husband, also discovered radium.

The scientific junkman method consists essentially of separating the polonium from impurities by use of electric current in a solution. An every-day use of this electrolytic technique is in the silver plating of metal, like knives, forks and spoons.

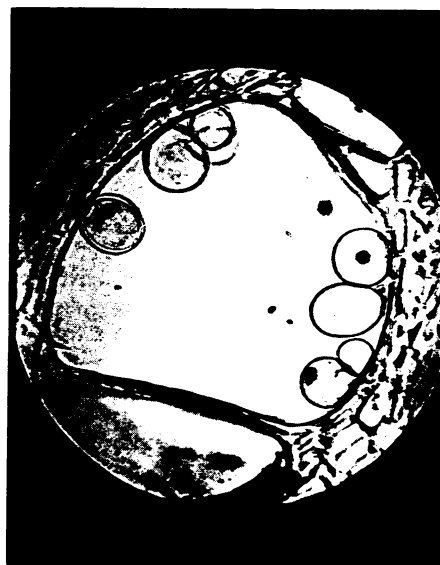
Using a variation for the common method adapted by the electrochemist

Prof. Colin Fink of Columbia University from earlier techniques, Prof. Pegram and Dr. Dunning employed a rotating electric contact in their polonium-bearing solution.

Revolving at speeds as high as 6,000 revolutions each minute the rim of the electrode moved with velocities up to 36 feet a second.

In a sample extraction test the scientists obtained 35 millicuries of polonium. A millicurie is the unit by which the amount of radioactive materials is measured. A gram of radium, worth \$60,000, is equal to 1,000 millicuries. By obtaining 35 millicuries the Columbia investigators recovered polonium worth \$2,100.

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YOUNG TYLOSES

One of the peculiar structures that clog up water ducts in living trees. They are outgrowths from living cells in the wood adjacent to the ducts. Some woods always have them; some have them only in certain circumstances, as when attacked by parasitic fungi. This photograph is remarkable because it shows the protoplasm and nuclei of the cells from which the tyloses have grown.

ANTHROPOLOGY

Human Beings Little Improved Since the Stone Age

HUMAN beings have shown no marked improvement in their evolutionary status since they were mere Stone Age men and cave dwellers, at the end of the last Ice Age.

Furthermore, today, the human species is faced with danger. By its benevolence and its medical and religious ideals, it is protecting and perpetuating the weak and unfit, the very types that nature used to weed out ruthlessly, leaving the fit to survive.

These warning signposts along the road of man's destiny were pointed out by Prof. Ernest A. Hooton, noted anthropologist of Harvard University, speaking before the annual meeting of the Society of the Sigma Xi.

Calling for a "biological new deal," Prof. Hooton said:

Destroy the Public Enemy

"Let us cease to delude ourselves with the belief that education, religion, or other measures of social amelioration can transform base metal into gold. Public enemies must be destroyed—not reformed. We need a biological new deal which will segregate and sterilize the anti-social and the mentally unfit. Intelligent artificial selection should replace natural selection."

The bearing that physique, good or bad, has on culture in being investigated in extensive researches, Prof. Hooton

showed. Growth studies of school children show that the physically fit child is apt to be the superior student. On the other side of the ledger, mental defectives are commonly associated with subnormal physique. The criminal also is under par physically.

Physically Inferior

"Charles Goring conclusively demonstrated that English criminals, as a group, are vastly inferior in physical development to the law-abiding population," said the anthropologist. "My own weary researches upon the American criminal in ten states are even more decisive. While the complete results cannot yet be divulged to a none-too-impatiently waiting public, it can be stated positively that the biological inferiority of the criminal is no less marked than his economic ineffectiveness and his general stupidity."

In his plea for better human stock, the anthropologist said:

"We all admit that our social engine has stalled, and a succession of political, economic, and sociological drivers have been pulling and pushing every movable gadget in a futile effort to make it start. May not a biological bystander suggest the possibility that some one has watered the gasoline?"

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PSYCHOLOGY

Psychologist Tells How To Prolong Mental Life

OLD AGE as well as extreme youth is being put through its mental paces by the psychologists. Prof. Walter R. Miles of Yale reported to the American Association for the Advancement of Science that although mental ability goes down hill steadily with old age, if you keep practicing your skills you will probably be able to excel the younger generation. For instance in trapshooting, while those 40 to 44 years of age do better than those 50 to 54, young shooters aged 10 to 19 do far worse than either group. In other skilled activities also the psychological elements of skill, practice and experience have a counterbalancing effect on the inevitable psychological ravages of age.

Prof. Miles suggested that longevity serves as a sort of mental test because he finds that the great men of all ages have lived long lives. Those who are listed in Who's Who, for instance, have longer life spans than the ordinary run of mortals.

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