MEDICINE

Why Vaccine Trouble?

Surge of polio attacks after inoculation by withdrawn vaccine may have been caused by unkilled virus in solution, or injection may have triggered already present infection.

➤ THE POLIO vaccine withdrawn from use, after paralytic cases were discovered in children inoculated with it, may have produced the disease by one of two theoretical effects:

1. All the live virus used in making the Salk dead virus vaccine may not have been killed.

2. Associated paralysis may have occurred not as the result of the vaccine itself as such, but because of the injection.

The second possibility is a difficulty that has been recognized and upon which research has been conducted for some time. The irritation caused by the injection is believed to localize polio virus, not necessarily in vaccine, and thus cause clinically identified polio paralysis in the part of the body where the injection was given.

The cases of polio reported following the use of Salk vaccine made by Cutter Laboratories, Berkeley, Calif., developed paralysis near where the injections were given. In the mass tests of the Salk vaccine made last year and evaluated in the report issued last month, paralysis in vaccinated children was negligible, statistically speaking.

In the rigorous tests of the vaccine made by the Cutter Laboratories during the three-month period of manufacture, it was judged pure, potent and safe. At various stages of manufacture it was inoculated into monkeys, guinea pigs, rabbits, mice and cultures, tested for contamination. The brain and viscera of experimental animals were inspected for any sign of disease.

The vaccine now withdrawn passed these strict tests and was not suspected of any difficulty of any sort. It was therefore licensed by the U. S. Public Health Service. When, however, there were reports of the cases of paralytic polio in the vaccinated children the government quickly withdrew all the vaccine from use.

It will take several months of investigation, at least, to determine what is the trouble. The incubation period of polio is seven to 14 days. The vaccine is a relatively perishable article and has an expiration date of six months.

The progress of medicine records some difficulties with immunizing agents in past years. The last case of a licensed material of a similar sort that gave serious trouble was diphtheria anti-toxin in Dallas in 1924. In the use of the BCG vaccine against tuberculosis used in France there was once a considerable number of deaths. Four to five years ago in Japan there were some 75 deaths reported from defective diphtheria toxoid.

Trouble with a polio vaccine of a different sort, not a killed virus, occurred in 1934-35 when a preparation being used experimentally, and not yet licensed by the government, did cause cases of polio and deaths among children given this vaccine. These disastrous results put a stop to polio vaccine-making for a time. But knowledge was gained in subsequent years, the Salk vaccine was finally produced and came through its massive tests successfully.

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ASTRONOMY

Horoscopes Fill Gaps In Astronomy, History

➤ HOROSCOPES INTENDED to forecast the fortunes of individuals among the ancient Greeks are being used to fill important gaps in our knowledge of astronomy as well as historic events, the American Philosophical Society meeting in Philadelphia was told by Prof. O. E. Neugebauer, mathematical historian of Brown University, Providence, R. I.

The earliest Greek horoscopes known to science are preserved on papyri and are dated slightly before the beginning of the Christian era. The great astronomer Ptolemy wrote his "Almagest" about the same time, 140 A.D., but Ptolemy was concerned only with theoretical astronomy. Very little information is available for that time about actual positions of sun, moon and planets.

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PHYSIOLOGY

More Cats Are Southpaws

➤ THE FAMILY cat may have a preferred paw just as her owner may be right-handed or left-handed, and pussy is most often a southpaw when she is not ambidextrous.

This was shown in experiments conducted by Dr. J. Cole of the University Laboratory of Physiology, Oxford University, in England.

The finding is important because it adds to our knowledge of the handedness of various species from parrots to men, and because it throws light on the cause of handedness.

Of individuals with one side or the other dominant, left-handers seem to predominate among cats and parrots, right-handedness is most common among humans, and rats, monkeys, and chimpanzees are in between. This is the conclusion from Dr. Cole's research and that of others.

Dr. Cole's research with cats is particularly interesting because of its bearing on theories of what makes one side dominant.

One theory is that handedness is the result of feeding habits. If a mother habitually puts a cookie or a cereal spoon in baby's right hand, the baby thus rewarded for putting the right hand to his mouth might be expected to develop right-handedness.

But cats, Dr. Cole points out, do not feed by putting food into the mouth with the paw. In fact, some difficulty was encountered in persuading pussy to reach for a bite of food with one paw.

Kitty was induced to use a paw by putting a tempting bit of rabbit meat in a glass tube. (Rabbit was used, Dr. Cole explains, because this kind of meat was not rationed in England.) At first the morsel was placed in the very end of the tube where the cat could reach it with her mouth. Later it was pushed down the tube so that she would have to reach in with one paw. If she used the left paw 75 times out of 100 reaches, it was concluded that she was a southpaw. Of the animals tested, 20% were right-handed, 38.3% left-handed and 41.7% ambidextrous.

Dr. Cole suggests that the anatomy of the brain is more important than experience in making an animal prefer one hand or paw.

The cat experiments are reported in the April issue of the *Journal of Comparative and Physiological Psychology*.

Science News Letter, May 14, 1955

MEDICINE

Improve Radioactive Spotting of Tumors

➤ MORE ACCURATE spotting of brain tumors by radioactive arsenic is now possible with an improvement in the detecting method devised by Dr. Gordon L. Brownell, physicist, and Dr. William H. Sweet, brain surgeon, of Massachusetts General Hospital in Boston.

Radioactive arsenic is injected into the patient's veins. The amount of the deadly chemical is so small it cannot poison the patient, who then lies for one hour while twin scintillation counters move back and forth, scanning the head line by line.

Arsenic concentrates in brain tumors and the machine outlines a map of these areas. The new equipment is more sensitive than that previously used, and Dr. Brownell believes that it will increase accuracy of the procedure. In the first 400 cases, the old equipment found and correctly localized about 80% of the tumors.

The two doctors' research was supported by the American Cancer Society.

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