

Recommendations from these White House conferences on child welfare, of which this of 1940 is the fourth since 1909, will provide a yardstick for state and city officials and welfare groups, in their planning during the forthcoming decade.

*Science News Letter, January 27, 1940*

## GENETICS

## Cousins Recently Born Are Brother and Sisters

**C**HILDREN with two sets of parents, but brother and sisters, nevertheless. That is how the geneticist sees the case reported in New York of the three babies born to identical twin fathers and identical twin mothers.

Benjamin and Hyman Rubin, identical twins, married Sylvia and Ruth Reisman, also identical twins, according to this report. Now one couple are parents of identical twin girls and the other couple have a boy born just four days before.

The little boy is a cousin of the little girls, but is, genetically speaking, their brother. Since his father is identical in heredity to the father of the girls and since his mother is identical to their mother, he is exactly as closely related to them as though he had been born to the same parents.

This is no mere play upon words, but is scientifically accurate. For identical twins have their origin in a single egg cell. They have drawn exactly the same set of genes in the vital grab-bag of human heredity. So far as the traits they can pass on to their children are concerned, they are interchangeable.

Scientists reserve a special welcome for the birth of identical twins. The reason is that no scientific experiment can be completely satisfactory without the inevitable control. When one laboratory rat is fed a new drug or given a new serum, the effects can be judged only when another rat, otherwise like the experimental animal, goes without—when there is a “control.”

In educational or other experiments on man, the “control” is often missing. In the identical twin, Nature provides an ideal control—two human chicks from the same single mother egg cell. Two persons with equal potentialities.

In the Rubin babies, Nature has been more than generous and provided, in addition to this “control,” another in the form of another baby born of parents exactly the same genetically and at practically the same time.

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## PUBLIC HEALTH

# Health of Industrial Workers Protected by Examinations

## Non-Compulsory Program Worked Out by State Industrial Commission in Wisconsin; Employer Pays

**H**EALTH of industrial workers in Wisconsin is being protected by a non-compulsory program of physical examination worked out by the state's Industrial Commission, Harry A. Nelson, director of the Workmen's Compensation Department of the commission, reported at the Second Annual Congress on Industrial Health. The congress was held under the auspices of the American Medical Association in Chicago.

The program represents the recommendations of labor organizations, employers, physicians and insurance companies. It is in no way compulsory. It includes standards and safeguards designed to meet the approval of both employers and employees.

In concerns adopting the program,

every employe is examined before employment by a physician selected and paid by the employer. Time lost from work by employes and transportation expenses in connection with the examinations are also paid by the employer. Following the pre-employment examination, periodic reexaminations are given at such times as the examining physician directs. The intervals between examinations depends both on the employe's condition and the type of work he is doing.

Conditions threatening the employe's health can be detected by such examinations in time, it is hoped, to ward off the health menace, either by appropriate treatment or by change in working operations and conditions at the plant.

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## MEDICINE

# New Infantile Paralysis Leads May Reveal Way It Spreads

## Saliva Will Be Examined for Virus; Disease Spread Now Seems More Like Diphtheria Than Like Typhoid

**N**EW LEADS on infantile paralysis research make the eventual conquest of this crippling childhood plague seem excitingly near at hand. Research plans announced by Basil O'Connor, president, National Foundation for Infantile Paralysis, show that scientists are following new trails in their search for ways of preventing the disease.

Saliva from mouths of infantile paralysis patients both before paralysis sets in and during the paralytic stage is going to be examined for the virus that causes the disease. The clue for this line of search comes from the recent discovery of the virus in sewage from localities that were gripped by infantile paralysis outbreaks. The virus was also discovered in the intestinal discharges of patients and of healthy persons who did not have infantile paralysis but who had been in

contact with patients. This proved the existence of healthy carriers of infantile paralysis, akin to the healthy carriers of typhoid fever.

How do the healthy carriers and the patients spread their germs to others? The saliva tests may give the answer to that question.

Infantile paralysis, it is now believed, spreads more like diphtheria than like typhoid fever. In infantile paralysis, as in diphtheria, there must be direct contact with a patient or a healthy carrier of the germs. In typhoid fever, water or food may spread the germs, which are discharged from the body with its waste matter.

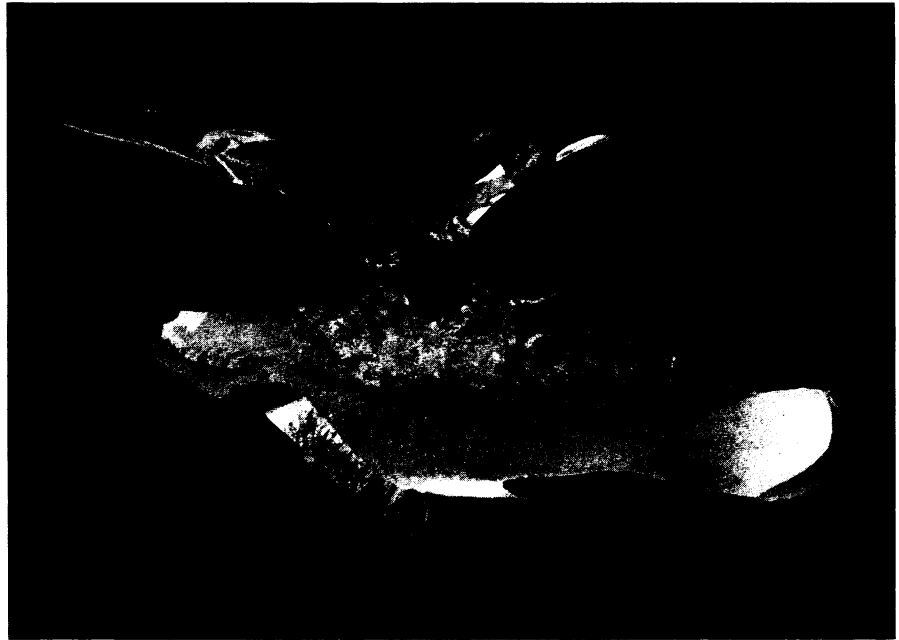
If infantile paralysis germs, discharged with body wastes, were spread by water or food, scientists would expect everyone who used the same water and food sup-

plies to get the disease during epidemics. But they do not. Here is a mystery the scientists hope to clear up.

Another unsolved mystery is where the virus goes in the body of patients. Where do healthy carriers carry their germs? Scientists know the virus travels along nerves, and that when it reaches the nerve cells in the brain and spinal cord it does its chief damage. But for all that is now known, the virus may invade other tissues of the body and hide itself there. Complete information on this point will be sought by examination of all the tissues of the bodies of patients who die of the disease.

If infantile paralysis virus travels from human wastes to contaminate water supplies, will chlorination make the water safe by killing the germs? Scientists believe it will, but when they began thinking about this, they realized that germ-killing chemicals, from carbolic acid, or phenol, down are tested by their power to kill germs that can be seen under the microscope, like the colon bacillus, but not against the invisible virus type of germ. This has led to another line of research, testing the virus-killing power of chemicals, which may help with the problem of infantile paralysis and of other virus-caused diseases.

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**FREAK OF THE MELTING POT**

*Out of the melting pots at the National Bureau of Standards in Washington, where scientists produce experimental optical glass, came the queer and unusual glass "airplane" shown above. The glass comes from the melting pots in large pieces which must be broken up into smaller chunks and eventually turned into lenses and prisms. How the glass will break is determined by the internal stresses which develop on cooling. The illustration on the cover of this week's SCIENCE NEWS LETTER shows another such odd shape. Both photographs are by Fremont Davis, Science Service staff photographer.*

#### DENTISTRY

## Rub Sex Chemicals on Gums To Prevent Loss of Teeth

### Hormones Strengthen Protective Keratin Layer, Keeping Gums Healthy and Giving Resistance to Germs

**J**UST as women now rub cold cream on their faces, both men and women may soon be rubbing their gums with sex hormone chemicals in order to strengthen them and prevent loss of teeth.

Experiments by Dr. Daniel E. Ziskin of Columbia University's School of Dental and Oral Surgery show that sex hormone preparations treat successfully diseases of the gums by "armor plating" the gums through a strengthening of the outer protective portion or keratin layer.

Men should use male sex hormone for best results, and women should use female sex hormone, but either hormone on either sex is effective.

Keratin is a horny substance which when present in normal deposits serves

to protect the mouth against infection. The sex hormone treatment is used to supplement other treatment, but succeeded in some stubborn cases that were not helped by any other method.

"The keratin layer is necessary," Dr. Ziskin explained, "to maintain healthy gums, and may be lost or reduced in thickness in the presence of certain irritating factors. Such loss or reduction lowers resistance to bacteria which ordinarily could not penetrate, and opens the way for more serious involvements.

"Loss of keratin may result from local causes, such as tartar on the teeth, or from causes originating within the body, as for example, pregnancy."

"The new method does not promise to be a cure for tooth decay since gum dis-

orders are not necessarily either the cause or the effect of diseases of the teeth. However, the presence of irritating factors in the teeth, such as tartar or cavities, can bring about inflamed gums. In so far as the gums are concerned, the application of sex hormones will be of assistance in the treatment of dental disorders."

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#### GENETICS

## Chimp Has 48 Chromosomes, Same Number As In Man

**C**HIMPANZEES have the same number of chromosomes per cell as man, 48, it has been provisionally determined in a study reported (*Science*, Jan. 19), by Drs. C. H. Yeager and T. S. Painter of the University of Texas and Dr. R. M. Yerkes of Yale University.

Counting chromosomes in any of the higher vertebrates is an exceedingly difficult task, which probably accounts for the almost total lack of such counts, strongly contrasting with the voluminous records that have been piled up on chromosome studies in plants and lower animals, where counting is easier.

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