

## BIOLOGY

# Colchicine Used on Rabbits To Double Chromosomes

Same Powerful Chemical Used to Create New Plants Now Used on Mammal but Won't Produce Super Race

**T**HE same powerful chemical that has been used in the creation of new and larger fruits and flowers has been tried on rabbit egg cells.

Colchicine, which doubles the number of heredity-bearing chromosomes in plant cells, allowed the production experimentally in glass vessels of rabbit egg cells with double the normal body number of chromosomes. The research is reported by Drs. Gregory Pincus and C. H. Waddington of England's Cambridge University. (*Journal of Heredity*, December)

Cell division in the experiments did not go beyond the very earliest stages of development. For the present at least, therefore, dreams of colchicine-induced races of giant super-rabbits (and, by inference, of giant super-men) must remain only dreams.

Artificial increase in mammalian chromosome numbers has never been accomplished before, and natural occurrence of higher numbers of these heredity-bearing units in the cell's nucleus has been reported only once or twice, and then not in egg cells but in structures

associated with the developing embryo.

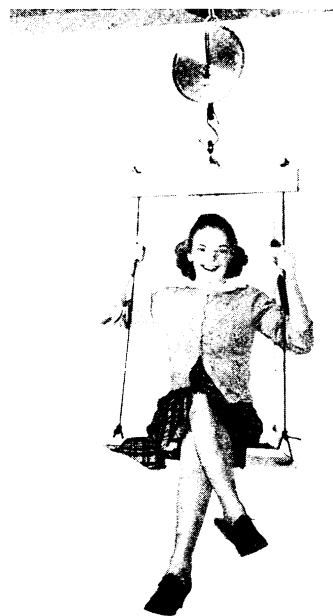
Drs. Pincus and Waddington accomplished their results by treating fertilized rabbit egg cells with colchicine, already well known for its chromosome-multiplying effects in plants. They also used alcohol, ether, and abnormally high temperatures; but colchicine was most effective.

The doubling of chromosome numbers resulted from the slowing down of the cell division process. The first stages of division, in which the chromosomes split and thereby double their number, went through as usual, but the cells then failed to finish the process, leaving the two sets of chromosomes in the undivided cells.

Subsequently a few of these cells did divide, but only at a rate less than normal. In no case did such divisions go beyond the very earliest stages.

Dr. Pincus was formerly connected with Harvard and Clark Universities and the present work was aided by grants from the Josiah Macy, Jr., Foundation and The Milton Fund of Harvard University.

*Science News Letter, February 3, 1940*



A MAGNET

*This 100-pound girl is held suspended by the tiny magnet at the top of her swing. If a 160-pound man could lift 720,000 pounds, he would only be doing the job which the newly developed magnet can do. Invented by G.E. scientists, the new magnet can lift 4,500 times its own weight, tops previous record of 1,500. Made of alnico, alloy of aluminum, nickel, iron and cobalt pressed together as a powder and sintered, the new tiny magnet gets its lift by a new design arrangement of its parts. Alnico itself can lift only 500 times its own weight. Surprising demonstration is to see the minute three-fourths ounce magnet hold up 200 pounds in tests. Uses: For better permanent magnets used in telephones, radio loud speakers and many another electrical device.*

## DENTISTRY

# Abscessed Teeth Treated With Hot Sulfanilamide

One Treatment Reported to Have Cleaned Up Abscess That Had Persisted for Ten Years; May Aid Sinuses

**S**UCCESS in the treatment of abscessed teeth with the chemical remedy, sulfanilamide, was reported by Dr. Fred R. Adams, of New York, at the Greater Philadelphia Dental Meeting in Philadelphia.

One injection directly into the abscess of a hot sulfanilamide solution killed all the trouble-making germs in every case but two, Dr. Adams reported. One case required two such treatments and another, three. Some of the abscesses that

were cleaned up in one treatment had persisted for 10 years. X-ray pictures of these cases showed that after a few months new bone had grown to fill the area formerly occupied by the abscess.

Heating the sulfanilamide solution for treatment is important, Dr. Adams emphasized. A stronger concentration of the drug can be obtained in hot water and the heat reinforces the chemical's action on the germs, he explained.

This method of using a hot sulfanila-

mid solution for irrigation should, in Dr. Adams' opinion, be useful in treating infections in other parts of the body, such as sinus infections and the bone diseases osteomyelitis and osteitis and in cellulitis involving bone.

*Science News Letter, February 3, 1940*

## PUBLIC HEALTH

## Friendliness May Act To Spread Influenza

**S**IDELIGHTS on the present influenza outbreak, if we are having one, it being difficult to tell statistically until it is pretty much well underway or over:

South Carolina has had an unusual amount of flu and infantile paralysis, which is puzzling because the population there is generally well fed and health services good. Suggested explanation is that the good roads plus the so-

ciability of the people may be a factor. South Carolinians speed around the state at the drop of an invitation. They are gregarious, friendly folk. And germs travel with them, unfortunately. The more people go about, congregate, the more chance there is of diseases being spread fast and dangerously.

It may be difficult to estimate just how severe this flu prevalence really is, oddly, because of success in combatting pneumonia that frequently follows flu. Sulfanilamide and its relatives, sulfapyridine, sulfathiazole, etc., are being used widely with evident success. And success will ruin the statistical criteria (pneumonia deaths) which will be tough on the statistics but saving of lives.

Because the way influenza spreads is known, there is one general measure that can be advised as a preventive. That is to avoid contact with persons who have the disease. In line with this it is advisable in an influenza period, says the

Public Health Service, to keep out of crowds, especially indoors, as much as possible; to refrain strictly from using common drinking cups, common towels and the like; to wash the hands thoroughly before eating; and to keep the fingers away from mouth and nose.

The federal health service also has the following advice for those unfortunate enough to contract influenza:

"If there is fever, go to bed at once, send for a physician and follow his instructions. If medical service is not available, staying in bed carefully covered for three or four days, or until all symptoms have disappeared, is a valuable precaution against any dangerous development of the illness. The return to one's usual occupation should be gradual, and at first care should be taken not to get overtired. Medicine or drugs of any kind, unless prescribed by a physician, should never be taken; no specific cure for influenza is yet known."

*Science News Letter, February 3, 1940*

warmer coasts of the United States; and the manufacturing process is well known and not complicated.

The principal reason why the Japanese have been permitted to enjoy a monopoly in agar is that its making, and especially the harvesting of the seaweed, involve a large amount of hand labor, and such labor is cheapest in Japan.

It is reported that an effort is being made to build up an agar manufacturing industry in the Netherlands East Indies, and a concern in southern California has been producing it more or less intermittently. If real need arose, and especially if a cheap mechanical method for harvesting seaweed could be devised, there is no reason why America's needs for this obscure but important plant material should not be supplied from American sources.

*Science News Letter, February 3, 1940*

#### MEDICINE

### Cobra Venom and Curare Used for Arthritis

**T**WO POWERFUL poisons, cobra venom and curare, the old Indian arrow poison, have been taken from the ranks of killers and put to use in healing two widespread human afflictions, arthritis and the mental disease schizophrenia.

In schizophrenia, the Indian arrow poison protects patients from injury during metrazol convulsions which are used to shock them back to sanity. Good results with this combination of curare and metrazol are reported by Dr. A. E. Bennett of Omaha, (*Journal, American Medical Association*, Jan. 27) Dr. Bennett cautions against general use of the poison with metrazol until further experiments have been made. He has also been using it "with encouraging results" in treatment of children suffering from spastic paralysis.

Deadly cobra venom injected into the muscles of patients suffering from neuralgia and various rheumatic conditions caused slight or moderate improvement in a little over half the cases, Drs. Otto Steinbrocker, George C. McEachern, Emanuel P. La Motta and Freeman Brooks, of New York City, report. Other methods of treatment had failed to relieve almost all the patients. Patients with rheumatoid arthritis were helped more by the cobra venom treatment than those with other complaints. The venom was first given in small doses as recommended by Dr. D. I. Macht, of Baltimore, but larger doses were soon found necessary.

*Science News Letter, February 3, 1940*

#### BACTERIOLOGY

## Japan Sole Source of Agar, Important Biology Material

### Seaweed From Which It Is Made Grows on U. S. Coast But Process Requires Large Amount of Hand Labor

**J**APAN has a world monopoly of one commodity that the average person never sees and seldom hears about, yet which indirectly is of considerable importance to his health and well-being. It is the stuff called agar, a gelatin-like material made from seaweeds.

Agar is indispensable as a culture medium in all bacteriological laboratories, and hence to all hospitals, medical schools, and research institutions occupied with problems in foods, dairy products, soils and all other phases of pure and applied microbiology. Indigestible itself, it is the best substance known to hold in readily available form such favorite germ foods as glucose, beef extract, boiled potato, and blood. Agar, in tubes, plates and flasks, is the germs' laboratory dining-table.

Agar comes in dried form, as a grayish, light, stringy solid. It will take up many times its volume of water to form a slightly amber, translucent mass that looks exactly like ordinary gelatin dessert. As a matter of fact, sweetened and flavored agar has been used to some ex-

tent as a dessert material, and also in medicines where smoothness and bulk are desiderata, but most of the importation has continued to go to laboratories.

Department of Commerce figures show that the United States buys between 600,000 and 700,000 pounds of the dried product every year. The price has been as low as 25 cents a pound, but in recent years it hit the dollar-a-pound mark, and at the present moment the price is \$1.50 a pound bid, and little or no agar offered. The Japanese say that severe storms around their islands during 1939 have interfered seriously with the seaweed harvest.

If American and world laboratories were completely deprived of Japanese agar they would not be permanently crippled, although admittedly there would be a period of embarrassment and confusion similar to that experienced on a larger scale when the German sources of dyestuffs and drugs were cut off in 1914. The several species of red seaweed from which agar is made grow in many parts of the world, including the