

## PHARMACY

# Medicine from FagaraCoco

Tree in Argentina yields drug that may be an effective substitute for quinidine in treating diseases of the heart rhythm.

► DISCOVERY of a possible substitute for a heart disease medicine now very scarce because of the war is announced by five Argentine scientists (*Science*, July 20). The scientists are Dr. Venancio Deulofeu, Dr. Rafael Labriola, Dr. Alberto Taquini, all of the University of Buenos Aires, and Dr. Oscar Orias and Dr. E. Moisset de Espanes of the University of Cordoba.

Fagarine is the name of the new drug, which from tests on animals and human patients seems likely to prove effective in heart disease characterized by auricular flutter and auricular fibrillation or other disturbances of the heart rhythm.

Quinidine has previously been used in such forms of heart disease. As its name suggests, quinidine is related to quinine and like quinine is obtained from the bark of the cinchona tree. Since the Jap invasion of Java, previously the source of most of the world's supply of quinine, quinidine has also been very scarce.

Fagarine comes from the leaves and young twigs of *Fagara coco*, a tree growing in central and northern Argentina.

It was first isolated by another scientist, G. Stuckert. Chemical studies by Drs. Deulofeu, Labriola and associates indicate that it is composed of 19 carbon, 23 hydrogen, one nitrogen and four oxygen atoms. A probable structural formula for their arrangement in the fagarine molecule has been worked out.

Fagarine is more active in its effect on the heart than quinidine when given in the same doses, animal studies showed.

Six patients, two with auricular flutter and four with rheumatic heart disease and auricular fibrillation, have been given fagarine by Dr. Taquini, the heart specialist of the five-man research team. In all but one of these patients quinidine in the usual dose had failed.

Within 30 minutes after a single dose of fagarine, injected into the muscles, normal heart rhythm was restored in all six patients. In one patient the flutter started up again 28 days later as a result of an unusual effort made by the patient. Another dose of fagarine was again enough to restore the normal rhythm.

*Science News Letter, August 4, 1945*

## PHYSIOLOGY

# Test Before Transfusion

No girl should be given blood without Rh test, physicians are warned. Less than one cubic centimeter of Rh positive blood may be fatal to baby years later.

► NO BLOOD transfusion should be given to a young woman, a girl, or even a newborn girl baby unless tests for the Rh blood group are made first. This warning is given physicians in the *Journal of the American Medical Association* (July 28) by Dr. Philip Levine, of the Ortho Research Foundation, pioneer in Rh research.

In case the girl happens to have Rh negative blood, a transfusion of Rh positive blood may cause the death years later of her first-born baby, Dr. Levine has found.

What happens in case of the mingling of Rh positive blood with the incompatible Rh negative blood is a process

like immunization against disease. A reaction is set up which serves to destroy the Rh positive blood just as the blood of an immunized person checks the invading germs of a disease.

The evidence is that unbelievably small amounts of blood will set up this immunization, Dr. Levine points out. The passage of much less than one cubic centimeter of Rh positive blood from the unborn baby to the Rh negative mother's bloodstream is enough to set up this immunization. If, after that, the woman should have an Rh positive baby, the baby would be killed or made very ill by its own mother's blood.

And the indications are that once a

person is immunized, that person will remain immunized for the rest of his or her life. Although the Rh positive-killing antibodies in the blood may disappear in a relatively short time, the tissues responsible for the production of these antibodies remain capable of responding far more rapidly to any invasion of Rh positive blood. So that even though, after a time, blood tests may not show the presence of any immune antibodies in the blood, the immunization must be considered permanent.

Dr. Levine reported the case of a young woman, 20 years old, whose first baby was born with the most severe form of erythroblastosis fetalis, the disease caused by Rh incompatibility. This happened because she received seven transfusions of her father's blood when she was only six years old.

Before the fairly recent use of vitamin K as an anti-bleeding agent, it was a common practice to give newborn babies an injection of blood into their muscles, since it is rather difficult to transfuse blood into the small veins of infants. This process, like pregnancy, is particularly likely to immunize, because it feeds minute quantities of blood into the bloodstream over a long period of time. But any blood transfusion of incompatible blood is likely to cause immunization, Dr. Levine emphasized.

Dr. Levine hopes that application of his recommendation that no girl baby or young girl should ever be given blood in any way until she is tested for Rh, will save the lives of many babies in the future.

Even a recently recommended biologic test to detect Rh incompatibility can itself serve to immunize, Dr. Levine reported.

Discovery that the incompatible blood of the mother could cause the death of her own baby was not made until eight years ago when Dr. Levine studied the case of a young woman whose second baby was born dead. He found that the mother's blood would not mix with that of the father although both had group O blood. That was the first clue to the medical puzzle of why many families had been able to have one child and never any more that would live until birth or beyond the first few days of life.

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*Indium*, a minor metal, is proving useful in bearings; when plated on the face of the bearing and heated, it diffuses into the surface and retards wearing thus prolonging the life of the bearing.