

# Life Sciences Notes

## IMMUNOLOGY

### Test for Penicillin Allergy

A simple chemical test that predicts whether or not an individual is allergic to penicillin is reported from the Weizmann Institute for Science, Rehovoth, Israel.

An estimated 10 percent of all persons are allergic to penicillin, which can cause reactions ranging from a mild itch to almost instant death in highly sensitive individuals.

Allergic reactions occur when antigens enter the body and induce antibody production. In some persons, penicillin teams up with proteins, forming an allergy-causing antigen.

Graduate student Joseph Haimovich, working under Dr. Michael Sela, has devised a simple method for identifying even minute quantities of antibodies in serum taken from patients. Penicillin bound to a virus is added to the patient's serum. If the virus is neutralized, scientists know antibodies are present. If, on heating, those antibodies are destroyed, they know they are allergy-causing antibodies which will result in a possibly severe reaction when they interact with antigens. If, on the other hand, the antibodies survive heating, it shows them to be nonallergic.

The researchers suggest it is possible to use this test regularly to spot penicillin-allergic persons before any of the antibiotic is administered.

## BIOCHEMISTRY

### Cultured Cells Form New Skin

Cells grown in a test tube can be used successfully to rebuild the outer layers of skin, a Stanford University dermatologist says.

Dr. Marvin A. Karasek took cells from an adult rabbit and grew them for 14 days in culture medium. When he transplanted them back to the rabbit, the grafted cells formed a new epidermis or outer layer of skin.

This is the first time grafted cells cultured in a synthetic medium have grown successfully on the host animal, Dr. Karasek says.

The newly formed epidermis survived five weeks after grafting and the cells maintained their ability to grow and differentiate during this period.

Dr. Karasek says his findings challenge the position that adult skin cells grown in culture medium are unable to differentiate or form a specific skin tissue. Scientists hope eventually to be able to use cultured skin cells for treatment of wounds.

## PUBLIC POLICY

### Congress, FDA Clash Over Vitamins

Last year the Food and Drug Administration proposed regulations governing the advertising and sale of vitamin pills and vitamin-enriched foods on grounds that the public is spending thousands of dollars on food supplements it doesn't need (SN: 2/11).

Since then, letters of protest from the food and drug industries, as well as food faddists, dieticians and others,

have been pouring in. Scheduled public hearings have been delayed.

Now, Congress is getting into the debate with a bill designed to block FDA action. The legislation, introduced by Representative Craig Hosmer (R-Calif.), is co-sponsored by 22 Congressmen from both parties. They say that since vitamin pills and foods cause no physical damage, individuals should be free to take them if they want to. "If they feel they are helped by them, then they are helped," Rep. Hosmer says.

But FDA feels it has a responsibility to what it considers the public good. "Except for persons with special medical needs, there is no scientific basis for recommending routine use of dietary supplements," FDA Commissioner Dr. James L. Goddard says.

## ENTOMOLOGY

### Potential Insecticide Found in Balsams

Juvenile hormone, essential to normal growth of insects, has been intensively studied in the last 10 years as a most promising weapon for biological control of insect pests. Death or sterility can result from either having the hormone when it should be missing or from not having it when it is critical.

Now, scientists report a chemical closely resembling juvenile hormone has been extracted from balsam fir trees. Known as terpenoid, the chemical is effective only against a European insect called *Pyrrhocoris apterus*.

The hormone-like chemical is one of thousands of similar materials balsam firs make for no known reason. However, Dr. Carroll M. Williams of Harvard University suggests in the July *SCIENTIFIC AMERICAN* that many other terpenoid materials will turn out to be effective against other specific insects.

## BIOLOGY

### Scientists Link Blood to Fertility

"Blood group studies are probably at present more valuable as a source of genetic information about human populations than studies of all other factors combined," Scottish scientists say in the Aug. 12 issue of *NATURE*.

From blood studies on 212 infertile men, Dr. John Grieve and co-workers at Queen's College, Dundee, suggest there may be a correlation between the frequency of blood group A in a community and its rate of population growth. They note a relative increase of group A and a relative decrease of occurrence of group O blood among men whose semen contains few, if any, live sperm cells.

Although the scientists are only raising a point that might or might not lead to important new understanding of inherited blood types and their relation to fertility, they point out that in India where the population is increasing at an explosive rate, only about 25 percent of the people have group A blood. In Europe, however, where rate of population growth is considerably less, about 40 percent of the people have A-type blood.