

Cope, who is only 35, has already published more than 30 papers announcing results of his researches in organic chemistry, which will have ultimate application in the fields of plastics and drugs. This prize was founded particularly to encourage research in pure chemistry by the younger generation of chemists.

Two other \$1,000 prizes were awarded to chemists attending the meeting. The Eli Lilly and Company prize in biological chemistry was presented to Dr. Joseph

S. Fruton of the Rockefeller Institute for Medical Research, for studies in the difficult field of the proteins and their structural units, the amino acids.

The Borden Company prize for research in the chemistry of milk was handed to Dr. William Mansfield Clark of the Johns Hopkins University, who has done special work on the precise determination of the acid or alkaline state of milk.

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#### CHEMISTRY-MEDICINE

## Weapon Against Cancer

**Radioactive zirconium is seen as new chemical for use in combatting disease. Since it is a solid it can be applied directly to tissues under treatment.**

➤ **CANCER** can now be exposed to the fire of a new and powerful chemical battery, as potent as radium emanation but much more maneuverable. It is radioactive zirconium in completely pure form, preparation of which was announced before the Cleveland meeting of the American Chemical Society by a wife-and-husband research team, Dr. Margaret H. Kurbatov and Prof. J. D. Kurbatov, both of Ohio State University.

Radioactive zirconium is a solid, coming in extremely finely divided form—colloidal particles, in the chemists' term. Being a solid, it can be applied directly to the tissues under treatment. This gives it considerable advantage over radium emanation, which is a gas and has to be applied enclosed in small tubes or hollow needles.

Radioactive zirconium has the same half-life as radium emanation, three and one-half days. This should make easier the development of a clinical technique for its use, since the potency and rate of disintegration of radium emanation figure importantly in the determination of treatments. Thus far, however, the new substance has not been given medical application.

Zirconium has been prepared in radioactive form before now, but hitherto all preparations have been mixtures of the radioactive with the ordinary element.

In preparing it in pure form, the Doctors Kurbatov made use of an entirely new technique, an ultra-micro-chemistry which they themselves evolved. It involves the bombardment of rare elements with the powerful cyclotron at Ohio State University, and examining the results with two instruments, the Geiger

counter and the electrometer, which register number and kind of radioactive rays or particles given off. These data can be interpreted in terms of new substances brought into being by the bombardment. Quantities smaller than a billionth of a gram can be thus detected and studied.

In the case of the radioactive zirconium, they subjected the scarce element yttrium to the cyclotron's action for several hours. The quantity of radioactive zirconium thus formed was so small that it could never be seen, even with a microscope, yet its activity, particularly its emission of gamma rays, left no doubt of its presence and its identity.

There is another radioactive zirconium, which has the much longer half-life of 63 days. Thus far, however, it has been produced only in mixture with common zirconium. It can be used when absolute purity is not required. A number of other radioactive substances have been isolated in pure form at the Kurbatovs' laboratory.

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#### PSYCHOLOGY

## War Disabled Should Be Treated as Though Normal

➤ **WHEN**, at work or in a social group, you meet a man disabled by a war injury, keep an attitude of normality and treat him as though there were nothing intrinsically different about him as a result of his handicap. So advises Maj. Walter E. Barton in a report to *Public Health Nursing*, a professional journal for nurses.

Major Barton lists nine other points to remember in helping deformed or crippled war veterans regain their emotional stability and "focus attention on what is left instead of on what is lost." Although written for nurses, these pointers may be a useful guide for relatives, friends and fellow workers of the veterans. They are:

1. Be natural. A natural manner that one would bring to a normal person is all that is necessary.

2. Face the reality of the disability. Create within the patient a willingness to face the fact of his limitation.

3. Ignore the deformity. Let no horror or sorrow appear in the face or manner of the person in contact with the deformity.

4. Reassure the handicapped. Help the soldier concentrate on the determination to get well and on the determination to overcome the loss.

5. Restore his faith in his ability. The martyr's attitude may be noble but it doesn't bring much happiness to the individual.

6. Continue social living. Encourage the patient to resume social contacts after he returns to his own home.

7. Give the patient a job to do. Work is associated in our minds with health.

8. Keep a balance in life. In order to maintain mental health, some work, some play, some rest should be a part of every day.

9. Stress the importance of beauty of spirit. The handicapped person who has overcome his disability carries a great message to those who feel overburdened by life's many tribulations.

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#### PUBLIC HEALTH

## Falls Lead As Cause Of Accidental Death

➤ **THE WAR** and its restriction on automobile driving have pushed falls into first place as cause of accidental deaths in the United States, the Metropolitan Life Insurance Company reports.

Nosing out motor vehicles, falls in 1943 killed more than 25,000, which was about 2,000 in excess of the number killed by motor vehicles.

Chief victims of fatal falls are old people. Whether because they fall more often, or because when they do fall the results are more serious, is not known, but more than two-thirds of the deaths from falls happen among persons aged 65 and older.

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