

## ROCKETS AND MISSILES

# Rocket Clubs Superfluous

Existing science clubs should be able to help the growing number of young amateur rocketry enthusiasts with the aid of technically trained personnel from industry and the military.

► NEW ROCKETRY clubs do not have to be organized to handle the swelling ranks of rocketry amateurs.

Current enthusiasm for amateur rocketry can best be handled within existing science clubs, and military reserve officers not on active duty should be allowed to act as community or school rocketry advisers as a means of earning points necessary to maintain their commissions.

Kendall K. Hoyt, executive director of the Association of Missile and Rocket Industries, Washington, D. C., said the formation of new clubs especially for amateur rocketeers "could have an adverse effect on the nation's efforts to train youngsters for tomorrow's science leadership."

School and community funds for science activities, which are already in short supply, would be watered down even further by the formation of new clubs to duplicate part of the job in which existing clubs are experienced.

"Besides," Mr. Hoyt stated, "high school teachers already have enough of a burden with extra-curricular activities without adding new clubs, and industrial concerns which have been generous in assigning their technical personnel to assist science clubs may rebel at being called upon for help by an expanding number of clubs."

In using research officers to back up teachers and scientists in community science club activities, Mr. Hoyt believes the Government would realize "an excellent return" on its multi-million dollar reserve program investment that many critics recently have called stagnant.

In order to maintain their commissions and earn retirement pay, reservists must accumulate 50 points per year through correspondence courses, reserve unit meetings, administrative work or by acting as instructors. Such officers can earn one point for any single day in which they devote at least two hours to an approved reserve activity.

They can provide a strong background of military safety know-how and organized discipline that is necessary in conducting amateur rocketry projects, Mr. Hoyt believes. In addition, through units organized at the community level, reservists can be the core of any campaign conducted to publicize science youth activities, arrange for needed funds or secure experienced technical assistance.

The reserve Air Force colonel compares his proposed program with the Civil Air Patrol Cadet program which he organized during World War II. "That," he said, "was a case of youngsters learning from military

veterans and at the same time preparing to meet a vital future need."

Mr. Hoyt told SCIENCE SERVICE he is "alarmed" at the growing number of rocketry groups.

"These youngsters are just hurting themselves by forming outside groups that tend to spread available funds and competent assistance too thin," he said, adding that "they are also hurting science career preparation efforts by focusing prime attention on rocketry and away from such vital pursuits as biology, medical research, basic physics and mathematics and other important fields."

He urged the Department of Defense to collect suggestions immediately from educators and youth leaders on how the reserve program can best cooperate with organized science clubs.

Miss Margaret Patterson, executive secretary of Science Clubs of America, said SCA is prepared to transmit any resulting plan and suggestions to the 18,000 affiliated science clubs, reaching 400,000 young scientists who could benefit.

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## BIOCHEMISTRY

## Last Step in Blood Clot Process Is Discovered

► THE WAY in which thrombin, the body's essential blood-clotting enzyme, carries out its function has been uncovered.

Drs. Koloman Laki and Jules A. Gladner of the National Institute of Arthritis and Metabolic Diseases, Bethesda, Md., who made the discovery, hope it will shed new light on hemophilia and other mysterious blood disorders.

Blood clotting is a complex process involving a series of biochemical steps, each dependent upon a previous one. Blood platelets rupture releasing certain factors which act on prothrombin in the blood. Prothrombin is then converted into its active enzyme, thrombin. Clotting cannot occur without thrombin.

The formation of thrombin is followed by the last step in clotting, the formation of fibrin from fibrinogen. Just how thrombin acts on fibrinogen to form the clot has not been understood until now.

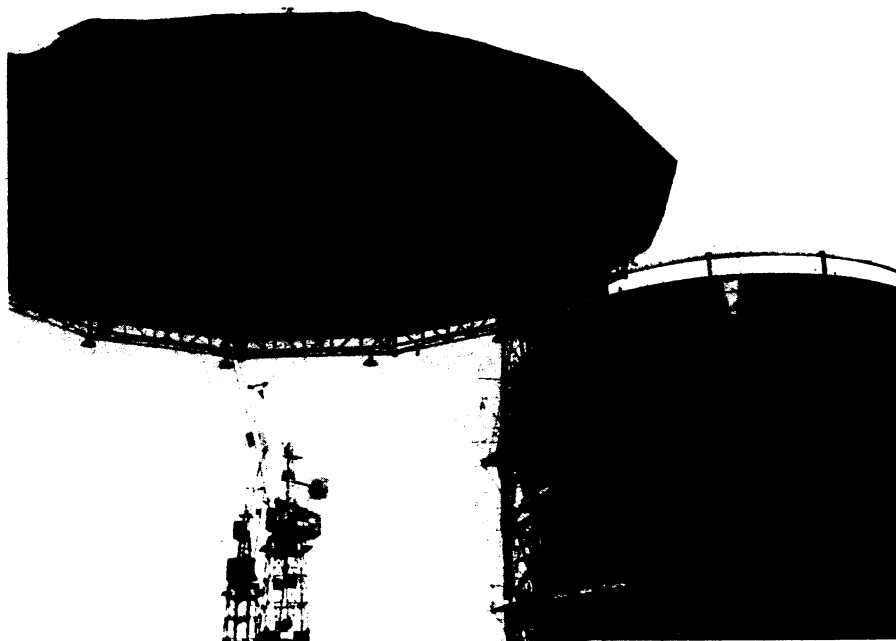
Drs. Laki and Gladner have found the "active site" on the thrombin molecule that is responsible for its action, and have discovered how thrombin changes fibrinogen to fibrin. Their findings are reported in the *Journal of the American Chemical Society* (March 5).

The scientists explain that the thrombin acts on the fibrinogen by rearranging the electric charges on the bonds of each molecule so that the fibrinogen molecules clump together as fibrin to form a clot.

The specific molecular bonds which thrombin split were previously unknown. The bonds are known as peptides.

Further research revealed three other enzymes similar to thrombin also break down protein molecules by splitting the peptide bonds which hold them together. How the enzyme determines which peptide bonds it will break probably rests with the structure of the enzyme molecule itself.

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**LID GOES ON NUCLEAR POWER STATION** — A giant crane lifts on the temporary removable roof of the 100-foot, second pressure chamber of the Berkeley nuclear power station in Gloucestershire, England. The removable roof enables welding work to be done in all weathers. The power station is expected to be fully operational by 1961.