

President Wallace's prediction. They, along with other research organizations and institutions, are contributing their bit to the defense of the country."

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## Soybean Crops Needed

**C**HINA'S great contribution to America's victory farming, the soybean, will receive greater attention than ever during the coming crop season, G. G. McIlroy, director of the American Soybean Association, announced.

Nine million acres, 54% more than last year, are expected to be planted to this versatile crop, which can contribute feed for the production of meat and milk, oil for explosives, paint, soap and human food, or can be plowed under to give the soil the nitrogen which diversion of nitrates into munitions is taking out of commercial fertilizers.

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## Insecticide Shortage

**M**UNITIONS for man's ceaseless defensive warfare against insects and plant diseases have been forced onto a scarcity basis because of the war, James R. Hile of the Acme White Lead and Color Works, Detroit, revealed. Part of the shortage is due to the more imperative demands of war industries for materials used in the making of fungicides and insecticides, part to the cutting off of overseas sources by Axis conquests.

Arsenic, classic standby of insect fighters, is hit both ways, Mr. Hile explained. About half of the arsenic used in this country comes in normal times from abroad, mainly from Sweden, Belgium and Japan. These sources are lost for the present. At the same time, other industries are demanding larger shares of the arsenic still available. Great quantities are needed in the manufacture of khaki cloth, blankets, etc. Arsenic is demanded in increased quantities for glass-making. It is also needed for the production of chemical weed killers, to replace chlorates now absorbed by the powder-mills.

Rotenone, one of the most important of the organic insecticides, used to come largely from the East Indies, which are now out of the market. South American rotenone, which used to supply about 40% of the nation's normal requirements, can be stepped up to perhaps 60%, but not more. This leaves a bad lack, with no replacements in sight.

A similar situation holds with respect

to the other great plant source of insecticide, pyrethrum. The principal source of this used to be Japan, but the British African colony of Kenya has almost entirely displaced our present Axis enemy so far as pyrethrum is concerned. The entire requirement for 1942 can be supplied from Kenya, if enough shipping space can be made available.

So far as arsenic and rotenone are

concerned, the situation is being saved largely through careful distribution of available supplies. Non-essentials, like grub-proofing of lawns and golf greens and protection of ornamentals, are being put on short rations, and the supplies on hand are being directed to the combating of pests and diseases attacking principal food and fiber crops.

*Science News Letter, April 4, 1942*

GENERAL SCIENCE

# Unified Science Must Serve Unified World After War

## Annual Report of Rockefeller Foundation Points Out Nationalistic Partitions in Science Must Disappear

**N**ATIONALISTIC partitions within the world of science must disappear in the world which scientists are to aid in reconstructing after the war, declares President Raymond B. Fosdick of the Rockefeller Foundation, in his annual report.

This is, of course, not a brand-new idea, Dr. Fosdick points out. Scientists have been feeling their way in that direction for at least 300 years—ever since physical science has been recognizable as a distinct field of human thought. But the post-war years must see an acceleration of the process.

"In brief, the age of distinct human societies, indifferent to the fate of one another, has passed forever; and the great task that will confront us after the war is to develop for the community of nations new areas and techniques of cooperative action which will fit the facts of our twentieth century interdependence. We need rallying points of unity, centers around which men of differing cultures and faiths can combine, defined fields of need or goals of effort in which by pooling its brains and resources the human race can add to its own well-being. Only as we begin to build, brick by brick, in these areas of common interest where cooperation is possible and the results are of benefit to all, can we erect the ultimate structure of a united society."

In the meantime, the Foundation faces the problems and perils of the immediate present. Outstanding in its contributions to the nation's total war effort are the measures taken for the protection of American and Allied troops

against tropical diseases, especially the yellow fever that still lurks in Africa and the malarias that beset the defenders of civilization all the way from Trinidad to the Burma road.

Another activity of the Foundation has been the recording on microfilm of vast quantities of scientific data and historic records in bombarded Britain. These compact duplicates of civilization's basic documents can be easily transported out of harm's reach, or buried deep beyond any bomb's penetration. If the bulky originals are destroyed, the microfilm records will still enable scholars of the future to build again on the foundations of today and all past ages.

*Science News Letter, April 4, 1942*

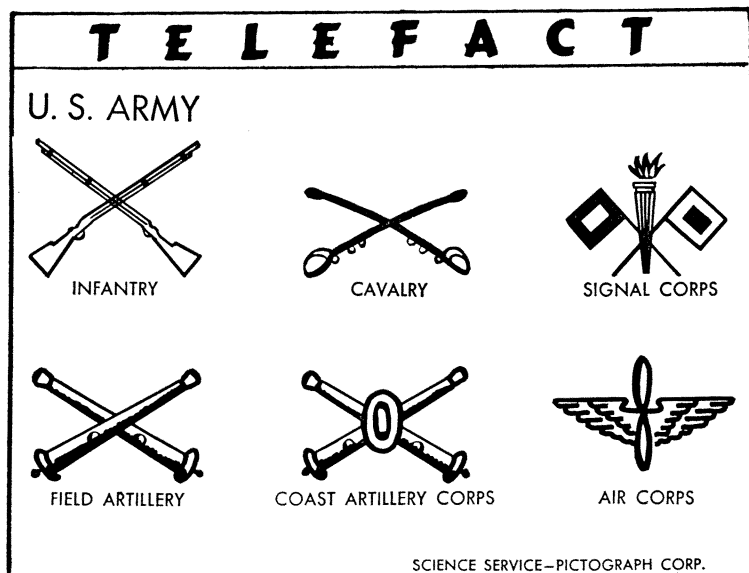
ASTRONOMY

## Swift Stellar Object Still Unsolved Mystery

By CHARLES A. FEDERER, JR.  
Harvard College Observatory

**T**HE fast-moving object in the constellation of Leo, the lion, discovered by Dr. Y. Vaisaeae of Turku, Finland, on March 12, has been confirmed and photographed by astronomers at the Lowell Observatory at Flagstaff, Arizona. However, it is not yet known whether the new object is a comet or an asteroid (*See SNL*, March 28).

A week after its discovery, the Lowell observations, made by H. L. Giclas, show that the object is moving about one minute of arc every 15 minutes, which is rather fast for an asteroid, especially since its apparent path is at



right angles to the ecliptic and directly across the sky from the sun. If it is a comet it may have already come nearest the earth, for its motion is slowing down, which may indicate the object is going away.

On the other hand, an asteroid might appear to move this way, if it had an orbit of high inclination to the earth's orbit.

In a letter to Harvard Observatory, clearing-house for astronomical news in the western hemisphere, Dr. V. M. Slipher, director of Lowell Observatory, writes:

"Herewith are two positions of the fast moving object, obtained by H. L. Giclas, of our staff. He photographed it both with the 13-inch search telescope and with our 9-inch Schmidt of 22-inch

focus. On both negatives the images are not stellar but are somewhat diffused and have the appearance of comet trails."

The positions are: March 18 at 1:27 a.m. EWT, 11 hours 12 minutes 45 seconds; plus 11 degrees 41 minutes; March 19 at 2:08 a.m. EWT, 11 hours 15 minutes 3 seconds; plus 13 degrees 24.5 minutes.

This indicates that in the week after its discovery, the object had moved 15 degrees or one twenty-fourth of the way around the sky. Its motion is just west of north, and on the evening of March 24-25, it passed about six degrees west of and slightly north of the star Delta Leonis. However, only large telescopes can see it, as it is of the thirteenth magnitude.

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#### ENGINEERING

## Army Backs Total Blackouts Doubts Value of Dim-Outs

### Air Is Clear Over America and Faint Lights or Puzzling Patterns Would Not Deceive, Is Belief

**T**OTAL blackouts of all illumination visible from the air, not pattern blackouts nor dim-outs, will continue to be the favored method of anti-air raid precautions, high officials of the Army Engineer Corps told Science Service.

These officials said demands for pattern blackouts by commercial electrical engineers have been thoroughly studied

by Army engineers and found unsuited to this country. They added that the clamor for pattern blackouts has served only to confuse civilians.

"In Great Britain," they explained, "the enemy is presented with a concentrated target more easily defended by anti-aircraft fire, barrage balloons and interceptor planes. Enemy planes must

fly at a high altitude and hence ground lights are less easily seen. Further, atmospheric conditions are usually poor.

"The United States is exactly opposite. Its vast coastlines make concentrated defense virtually impossible. The air is more clear than over England. Enemy planes, therefore, can come in at comparatively low altitudes and any pattern of ground lights can be picked up by the pilot and may be helpful as a reference point. A total blackout, on the other hand, is quite effective."

Army engineers doubt that pattern or camouflage lighting which seeks to mix up normal street lighting patterns would confuse an expert navigator. In the first place, they say, the navigator can reach a city by instruments, and need not rely on ground lights. Once over a city at comparatively low altitude he can pick up features of the terrain, rivers, hills, etc., to guide him to the target carefully located on his map.

"Suppose," they continued, "an enemy pilot is confronted by pattern lighting on the ground. He does not attempt to find his exact target by these lights, but discovers it by features of the terrain shown on his map or by flares. Once he spots his target he then uses the lights he sees as reference points to guide him while he circles or otherwise maneuvers to get over the target. Thus the lights which are supposed to confuse him actually aid him. Any fixed light can serve as a useful reference point to the target, hence the dim-out too is ineffective. Further it does little to eliminate dangerous traffic conditions.

"On the other hand," the Army engineers explained, "a total blackout, if really complete, greatly adds to a pilot's troubles.

"While he may find his target by noting the terrain carefully, the instant he begins to circle or maneuver in any way, he loses it again, if there are no lights to serve as reference points.

"Meanwhile the anti-aircraft and interceptor planes are given valuable time to get in their licks."

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The modern *circus* may have been invented by an eighteenth century British cavalryman named Philip Astley, who taught his mount tricks, later gave exhibitions which included performing humans.

*Peru* has the highest standard-gauge railroad in the world—at one point it reaches a height of 15,665 feet.