

## GENERAL SCIENCE

# Ten Top Science Advances

► THE ten most important science advances made during 1949, as picked by Watson Davis, director of Science Service, are:

1. Atomic explosion in Russia.
2. Hormones, cortisone and ACTH brought dramatic relief to sufferers from arthritis and promise to be useful in muscle weakness, kinds of cancer, aging disabilities and even mental illnesses.
3. Use of anti-allergy drugs to relieve the symptoms of colds.
4. Demonstration that dramamine relieves air and sea sickness and other nausea.
5. Non-stop round-the-world flight of

Army bomber in 94 hours.

6. Development of guided missiles, although details are still secret.

7. Commercial synthesis of chloromycetin, antibiotic for disease-fighting, first chemical manufacture of such material.

8. Discovery of Stone Age man in Alaska, giving man a greater antiquity in America.

9. Development of fluorocarbons as a new and promising class of chemicals, useful particularly as lubricants.

10. Discovery that lenses transmitting infra-red (heat) can be made from germanium metal opaque to ordinary light.

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## MEDICINE

## Convulsions from Malaria

► EPILEPTIC convulsions and "explosive behavior" are showing up in World War II veterans who had severe tropical malaria during their war service overseas.

Because vigorous anti-malaria treatment with quinine and newer drugs can rout the malaria germs before they do further damage to the brain, doctors should be on the alert to the possibility of malaria as a cause of convulsions among former service men, three physicians warn in the forthcoming issue of the *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* (Dec. 17) in Chicago, Ill. The physicians are Drs. David R. Talbot, Alan C. Elerding and John O. Westwater of Wadsworth General Hospital, U. S. Veterans' Administration Center, Los Angeles.

Examples of "explosive behavior" in a

23-year-old Marine veteran of Guadalcanal given in the medical report are: "manhandling his sister, threatening his father with a gun, forging a check and armed robbery of his uncle."

"At such times the patient felt 'forced' to do these things," the doctors report. "Later he would realize such actions were wrong and would surrender to authorities. There was only partial memory of these events."

Brain wave diagnosis may be valuable, the doctors state, for proper diagnosis of the condition. When the trouble is due to the severe tropical type of recurrent malaria, treatment of the malaria is of primary importance. Use of anti-epilepsy or anti-convulsive drugs must play a secondary role.

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## AGRICULTURE

## Aromatic Strawberries Are on the Way

► IF THEY could, Department of Agriculture scientists would develop strawberries complete with sugar and cream. Short of this, they are doing everything humanly possible to tickle the American palate.

Their latest gustatory masterpiece is a strawberry with a mouth-watering aroma, in addition to all the other tasty qualities which have earned the strawberry its princely place on the family table. It is not yet available commercially, but preliminary tests clearly indicate that the banana split will be hard-pressed for its favored position at the soda fountain.

An aromatic strawberry has been a long-standing ambition of Dr. George Darrow of the Beltsville, Md., Research Center. But it has not been easy. Patience, ingenuity and a poisonous drug have been a large

part of the story.

Working with Drs. Haig Dermen and Don Scott, Dr. Darrow started out with a European strawberry that is aromatic. The initial problem was to combine its sweet-smelling quality into the American garden varieties. Unfortunately, the hybrid was sterile, producing no seeds. This was almost 15 years ago.

At this point the poisonous drug, colchicine, was applied. Colchicine is the chemical that became famous for its ability to multiply the number of chromosomes, the units in the plant cell that govern heredity. As early as 1937 Dr. Dermen successfully used colchicine to double the chromosomes of the European berry. Although this "tetraploid" European berry was patiently crossed in every imaginable way with the American variety, it was not until now that it produced fertile hybrids. It is this hybrid, with aroma from its European parent and size and taste qualities from its American parent, that

Dr. Darrow thinks may have commercial possibilities.

However, it may be some years before this strawberry is on the market. Now it is the task of Dr. Darrow and his colleagues to breed other necessary characters into his aromatic berry. Most important of these are, resistance to root rot and leaf spot, firmness for shipping, and adaptation to the extreme South where strawberries are extensively grown.

All this will take time. Once all these characters are bred in, a matter of years, it will take another three years to make the runner plants available in quantity to commercial growers.

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## ZOOLOGY

## Tropical Jumping Spiders Jump to Attract Mate

► WHAT makes jumping spiders jump? The answer, in two carefully chosen words, is, That depends.

It depends for one thing on which way the wind is blowing, and for another thing, on how far along the evolutionary scale the particular species has come.

Jumping spiders, like certain other insects, birds, and other animals, go through characteristic gyrations, dances, and sundry other forms of showing off, presumably to attract a mate. Dr. Jocelyn Crane of the Tropical Research Department, New York Zoological Society, has come up with some new conclusions after studying the near tropical jumping spiders of Venezuela.

Although the sight of another spider usually sets off the courtship dance, Dr. Crane finds that chemicals borne by the air will also precipitate a spider jig. The more primitive the species, the more important the chemical stimulus.

Frequently a male spider will start showing off as soon as he spies another spider, male or female. When two males discover that they have been wasting their fanciest footwork on a rival, they promptly cut out the nonsense and rush at each other in mortal combat. This is true of relatively backward types; the more advanced species of jumping spider have worked out a code of etiquette for this situation, involving a ceremonial inter-male display.

Dr. Crane's paper on courtship and threat displays among jumping spiders was awarded honorable mention in the A. Cressy Morrison Prize Competition for 1949, announced at the annual meeting of the New York Academy of Sciences. The prize-winners of \$200 each were Abraham Slavin for "Stability Studies of Structural Frames", and Harold R. Hagan for "Embryology of the Viviparous Insects."

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*Water emulsion paints* are growing in popularity for home use; they are modest in cost, easy to apply, dry quickly and are free of objectionable odors.