

CHEMISTRY

Shanghai Fighting Disrupts Exports of Tung Oil

FIGHTING in Shanghai, disrupting the normal life of the port, has already seriously interfered with the export of tung oil, an essential ingredient of paint, varnish, linoleum, printer's ink, and a number of other important commodities. Dispatches received at the U. S. Department of Commerce indicate that of the 8,000 tons of tung oil on hand when the trouble commenced, only 1,000 tons could be shipped during August.

The great center for tung oil shipment is Hankow, far up the Yangtse river. The oil is normally sent down river to Shanghai for transshipment to ocean-going ships. There is a railway line running from Hankow southward to Canton, which offers an alternative route for export, but of course, the necessary re-routing of the shipments has not yet gone into effect.

If either side in the present undeclared war succeeds in gaining undisputed possession of Shanghai, commerce will presumably resume normal flow in relatively short order. On the other hand, if Japan drives a thrust toward Hankow, the tung oil trade may be destroyed at its very center.

In the meantime, there are reserve stocks of tung oil in this country estimated to be sufficient to supply all needs until about the end of 1937. Domestic production, in the Gulf states, has been increasing rapidly during the past few years, but is still able to take care of only a small fraction of the total demand.

Science News Letter, October 2, 1937

MEDICINE

Warns of Possible Danger In Use of Sulfanilamide

MEDICINE'S spectacular new weapon against a host of infections, the drug sulfanilamide—also known as prontosil and prontylin—is gradually revealing itself as having occasional toxic by-effects.

From far and near warnings of the possible toxic reactions to this new agent come filtering in to the American Medical Association.

In its *Journal*, (Sept. 25), the Medical Association gives space to eight articles that cite untoward reactions in certain patients following the use of the drug.

Sulfanilamide sprang into front page

eminence last winter when, according to reports, it was used for the septic sore throat of Franklin D. Roosevelt, Jr.

Extraordinary benefits have since been reported through the use of this drug in other streptococci infections and also in meningococci, pneumococci and gonococci infections.

From Milwaukee comes the report of a case of acute hemolytic anemia during treatment with sulfanilamide.

Chicago produces a case of severe loss of vision resulting from toxic optic neuritis after treatment with the new drug.

New Orleans reports four cases of skin eruptions among patients receiving the drug. Baltimore adds two similar cases.

Cleveland reports severe allergic manifestations in two patients. Four cases of a peculiar skin eruption have occurred in New York City when patients taking the new agent sat in the direct sunlight.

Los Angeles reports one patient with an untoward skin reaction. Sioux City, Iowa, has a similar story to tell.

Atlanta, Ga., has nothing negative to report. On the contrary it tells of the successful use of artificial fever in combination with sulfanilamide in treating gonococci infection.

The reports are not presented to detract from the value of the new drug but to warn physicians that care must be taken in its use. Most of the physicians reporting think it possible that the skin eruptions represent an allergic cutaneous reaction to the drug.

Science News Letter, October 2, 1937

SEISMOLOGY

Severe Earthquake Occurs on Equator

FAR OUT in the Pacific, about 450 miles northeast of New Guinea, a severe earthquake occurred a few minutes after eight o'clock on the morning of Thursday, Sept. 23. Tentative determination of its position was made by the U. S. Coast and Geodetic Survey, after examination of data gathered telegraphically by Science Service.

Exact time of origin was 8:05.9 a. m., eastern standard time. Approximate position of epicenter was on the Equator, at longitude 150 degrees east. Seismological observatories reporting were: Dominion Meteorological Observatory, Victoria, B. C., the University of California, Berkeley, Calif., the stations of the U. S. Coast and Geodetic Survey at San Juan, P. R., and Ukiah, Calif., and the Franklin Institute, Philadelphia, Pa.

Science News Letter, October 2, 1937

IN SCIENCE

ARCHAEOLOGY

Dig in Cave Floors, Find Prehistoric Apartment Life

CAVE floors, containing no less than three layers of Indian remains, have been excavated near Billings, Mont., by Prof. H. Melville Sayre, president of the Montana Society of Natural History.

The finds, which reveal Indian cave tenants of prehistoric days, take on additional importance, since Montana has been little explored archaeologically.

In the first level, Prof. Sayre found Indian beds of grass, leaves, vines, and sagebrush. Other levels contained fireplaces, household utensils of bone and stone, bones of animals, buckskin thongs braided with fiber, and shells from the Pacific coast.

Fragments of hematite, source of red paint, indicate that braves of these cavern apartments probably wore startling war paint or ceremonial decorations, even as later Indians did.

Science News Letter, October 2, 1937

VITAL STATISTICS

Automobiles Grave Risk For Aged Pedestrians

GRANDMOTHER and grandfather, each time they step across the street, are taking much greater chances of fatal injury than do Junior and his sister who frequently spend whole afternoons dodging automobiles in the street.

One hundred and three men in every 100,000 over 65 years of age were killed in automobile accidents last year. Thirty-four of every 100,000 women over 65 were injured fatally in automobile mishaps. This figure is contrasted with a 17 per 100,000 death rate for boys between 1 and 14 years of age and 8 per 100,000 for girls of the same age.

Slowing down of mental processes and reaction time with increasing age was blamed by Metropolitan Life Insurance Company experts who compiled the figures for the high mortality rates. The rate is higher than that for men and women between 15 and 64 years.

Two-thirds of the accidents involving old people happened to pedestrians, it was pointed out.

Science News Letter, October 2, 1937

E FIELDS

AVIATION

Airplanes Used to Freight Supplies for Climbers

AIRPLANES dropping food and supplies replaced the long string of laboring porters during the conquest of Lenin Peak, in the Pamir Range of Asia, whose 23,700-foot peak was recently scaled by a party of eight Soviet alpinists. Starting from the town of Osh, Kirghizia, in June, the mountaineers reached the summit on Aug. 17.

Radio equipment kept the climbers in constant communication with their base camp, and hundreds of pounds of food-stuffs and equipment were dropped to them in freight parachutes, eliminating the usual man-killing task of back-packing supplies up the mountains, where, at the summit, the concentration of oxygen is only two-fifths as great as at sea level.

By means of portable radios, the climbers received daily weather reports from the Weather Bureau station at Tashkent. One set was carried to the summit by the alpinists.

The Pamir Range is one of the least known of the great mountain ranges of the world, and one of the "last frontiers" for the alpinist.

Science News Letter, October 2, 1937

ENTOMOLOGY

Bees' Language Discovered; Its' Strange Sort of Dance

BEES HAVE a language of scented dancing. By means of it a scout bee that has made a rich discovery can send his fellow workers out after honey with almost as much dispatch as police are rushed to points of need by radio calls.

Scientists used to think that bees located flowers by color or scent. This is partially true. But in an exhaustive study of the bee habits, Prof. K. Von Frisch of Munich found that bees communicate with one another by a strange sort of dance performed within the hive. In this way they tell where honey can be obtained most easily.

Often it will take hours and sometimes days for a good feeding-place to be discovered. But when one bee has

found the honey, many, perhaps several hundred, will appear in a very short time. And they all come from the same hive as the discoverer.

Prof. Von Frisch set out to discover the language or mode of communication of the bees.

Here's what he found: If a new kind of flower begins to bloom, it is discovered by a scout bee. He loads up with honey and flies home. In the hive he reports the discovery by a queer sort of dance, turning round and round in a circle with queer tripping little steps, once to the right, once to the left, very vigorously, often for a minute on the same spot. Other bees crowd around with high interest. They rush out of the hive and soon can be found at the honey source.

The dance is a signal that honey has been found. The bee carries upon him the scent of the flower containing the nectar. The other bees noting this odor search for it as they fly out of the hive in all directions. Moreover, the discovering bee returns to the good honey source and broadcasts another odor created by a scent organ on its abdomen that also guides the other workers.

Science News Letter, October 2, 1937

VITAL STATISTICS

Foreign-Born Urban Males Live Longer Than Natives

THE MASCULINE foreign-born city dweller is apparently a tougher hombre than his native-born male neighbor.

At least, figures reported by the Metropolitan Life Insurance Company statisticians indicate that he can expect to live longer.

His advantage in cities of 10,000 population or more is nearly four months throughout most of his life. At 30 years of age the immigrant boy still has 36.18 years of life ahead of him, while the native male can look forward to 35.81 years. As both grow older the advantage becomes less, but even at 90 the immigrant has .14 year more of life to anticipate than the American-born male of the same age.

But his advantage is lost when both go out to the country-side, where the native male lives longer than the foreign-born one. Foreign-born country dwellers live longer than their city brethren, while native-born rural inhabitants also outlast city natives. Native females also have an advantage over their foreign-born neighbors.

Science News Letter, October 2, 1937

MEDICINE

Cancer Cells Present In Everyone's Body

EVERYONE has some cancer cells in his body, in the opinion of Dr. Albert Fischer of the Carlsberg Foundation, Copenhagen. (*American Journal of Cancer*, September)

Cancer cells are a "variety of the normal average tissue cell," Dr. Fischer believes, as a result of his researches. These cancer cells are present in every tissue and organ of everyone's body. The reason everyone does not have cancer in consequence of having cancer cells in his body is that there is an extremely small number of them, and because they die easily, they do not have much chance of multiplying and forming a sufficiently large colony.

"Old age, chronic proliferative activity, infectious diseases and viruses" are the "realization factors" which are all that are needed, Dr. Fischer says, for the development of the ever-present cancer cells into a malignant tumor.

Science News Letter, October 2, 1937

ENGINEERING

Make Tiny Ball Bearings, Size of a Pin Head

TINY, precision ball bearings are now being manufactured in Switzerland. In overall size, including the ball race, they are no larger than the head of a pin. They can be substituted for jewel and plain bearings in all forms of clock-work, motors, and delicate machines.

They are particularly useful for aviation instruments because they can withstand shock and vibration better than jewel bearings. Tests on the reduction of friction obtained have been made for comparison with jewel and plain bearings. The mean damping time for rotational motion in identical conditions was eight times longer than for plain bearings and 20 times longer than for tapered pivots. The ball bearings have an extremely low coefficient of friction so that only approximately the same force is required for starting as for running.

The smallest ball bearings now available (1.5 millimeter diameter) have three balls and the larger ones have eight. It is claimed they operate satisfactorily up to 10,000 revolutions a minute. Only 15 per cent. as much oil is needed for lubrication as is required for plain bearings, so that they do not need lubrication for years in a small unit.

Science News Letter, October 2, 1937