MEDICINE

Common Rat Flea in Hawaii Can Spread Typhus Fever

ADDED to the recent troubles of Hawaii is the discovery by one of its scientists, Joseph E. Alicata, that a common rat flea of the islands is capable of spreading the germs of endemic typhus fever.

This is not the European typhus fever dreaded as a war plague, but the much milder variety found in non-epidemic form in the United States.

Reporting his discovery to the Washington, D. C., Academy of Sciences, Mr. Alicata explains that he let sticktight fleas feed on laboratory animals infected with typhus fever germs, to see whether or not this kind of flea, like some of its relatives, could pick up the typhus fever germs and pass them to other animals.

The finding that it can do so is of considerable interest, he points out, because sticktight fleas are commonly found on rats, dogs, cats, mongooses and chickens in the islands. According to one survey, sticktight fleas were found on 13% of rats trapped in Honolulu and made up about half the fleas collected on rats of the island of Oahu.

Fifty-nine cases of typhus fever were reported in Hawaii in 1941, but health officials here do not know whether these were endemic or European typhus fever.

Science News Letter, March 7, 1942

AERONAUTICS

Aerial Mine Invented To Trap Airplanes

AN anti-aircraft projectile which the inventor terms an "aerial mine" is the subject of patent 2,274,264, issued to Erich Bickel of Baden, Switzerland. It consists of a case containing a small charge of high explosive, suspended by a long wire from a parachute. Fired into the air in numbers, in advance of an enemy plane, the wires are expected to snag on the speeding craft, which will be destroyed by the explosive charges.

The essential feature of Herr Bickel's invention lies in the mode of packing the parts. Heaviest part of the projectile is the forward section, on which the wire is reeled, with the parachute packed in the tapering nose. At the predetermined moment, a small powder charge in the base pushes this, and the explosive mine behind it, out of the case, shrapnel-fashion.

The mine, being relatively light, lags in flight, unreeling the wire from the faster-flying, heavier forward section. When all the wire has been paid out, it straightens, jerking the parachute out of the nose, which flies on empty. The mine is now afloat in the air, ready for business.

This invention appears to be an elaboration of an idea first suggested during World War I by Prof. R. W. Wood of the Johns Hopkins University. Prof. Wood's proposal was simply for steel wires or tapes, to tangle hostile planes and pull them down, launched from anti-aircraft shell in a closely similar manner.

Science News Letter, March 7, 1942

METALLURGY

New Heatless Armor Plate Developed by Australians

FOUR metallurgists of Sydney, Australia, have developed a new armor plate which is readily welded and needs no nickel or heat treatment, according to the Australian News and Information Bureau. Scientists believe the new armor plate production method may replace present Allied methods. Other Australian war inventions include the Kirby flashless mortar and the Owen sub-machine-gun.

Science News Letter, March 7, 1942

CHRONOLOGY

Poll Shows That NAS Wants Calendar Reform

A POLL of the National Academy of Sciences, whose membership comprises the outstanding leaders in American science, indicates a three-to-one preponderance of opinion in favor of a calendar reform which would "even up" the length of the months, giving each 26 working days and having each month begin on Sunday.

Results of the poll are announced in *Science* (Feb. 20) by Prof. W. E. Castle of the University of California.

Prof. Castle states that he mailed a ballot to all members of the Academy, and received responses from 168 of them or more than half the membership. Of those answering, 76% favored the change, 10% opposed and 14% went on record as "undecided." Of those who favored the change, 58% wanted it initiated in 1945, which is the next year that begins on a Sunday; 42% voted "No," unless the war ends soon enough.

Science News Letter, March 7, 1942

IN SCIEN

RADIO

Radio "Hams" Asked to Sell Equipment for War

RADIO amateurs are being called upon by the American Radio Relay League to sell their transmitters and receivers for use by the armed forces of the United Nations. Manufacturers are unable to fill the need under present circumstances.

Only standard manufactured equipment is needed. Homemade or "composite" equipment is not required at present.

The greatest need is for transmitters, the League stated. According to their figures, only 5% of amateur transmitters were purchased from manufacturers, while two-thirds of their receivers are factory-made.

Science News Letter, March 7, 1942

CHEMISTRY

Rubber's Elixir of Youth Sought in New Patents

SEEKING means for keeping rubber from getting old is almost as much a preoccupation of present-day chemists as the quest for the elixir of youth was for their alchemical ancestors. Newest effort along this line is represented in a process just patented by Joseph R. Ingram of the Nitro, W. Va., plant of the Monsanto Chemical Company, in which a coal tar derivative, indene, plays the principal part.

Aging in rubber consists primarily in its combining with oxygen of the air. This makes it stiff, deprives it of elasticity, finally produces breakdown — even as you and I. To ward off this fatal oxidation, compounds known as anti-oxidants are added in processing the rubber. Indene, in the form of compounds with formaldehyde and related chemicals, is claimed to be superior in this respect.

Mr. Ingram has been granted two patents, nos. 2,274,367 and 2,274,368, on his process and its products. Rights have been assigned to the Monsanto firm.

Science News Letter, March 7, 1942

CE FIELDS

ENGINEERING

Paint That Glows In Dark Suggested for Blackout

PAINT that glows in the dark would be used on all walls of factories that may have to be blacked out if the suggestions of Dr. Gorton Fonda of the General Electric Research Laboratory are put into effect.

Phosphorescent materials would be painted on the walls. These store up energy when the lights are shining and give it off for a short while when illumination stops. When the blackout comes the walls would continue to give off a faint ghostly glow for a short time during which the workers' eyes would become adapted to the darkness. This would also give time for the workers to find their way to their emergency posts.

Science News Letter, March 7, 1942

WILDLIFE

Newfoundland Game Herds Likely To Be Increased

THE Newfoundland Department of Natural Resources has recently completed a survey of their Virginia-sized island with the thought of increasing the game and meat supply by introducing either American white-tail or English red deer. By some incredible accident of geography this oldest of English colonies was never populated with the same numerous big game species as were nearby Canada and the United States. Only the black bear and woodland caribou are native to Newfoundland.

Some years ago moose were brought from the mainland and released on the island paradise. Since then they have becomes established, and reproduced to the point where some hunting is possible. Moose and caribou, however, are animals that prefer to remain as far away from human habitation as possible, and it is doubtful that they will ever populate the parts of the island occupied by scattered farms.

Deer, on the other hand, are quite agreeable to living in close proximity to human habitation. It is the thought of game officials that they can perform a dual function by introducing deer. Not only will they be increasing the game supply but they will also be alleviating the fresh meat scarcity in farming communities. At the same time they will be introducing an animal that will merely occupy a place heretofore vacant, an animal that will not compete in food or territory with the moose or caribou.

John Pierce, Maine Cooperative Wildlife Research Unit leader and biologist in charge of the recent survey, recommended introduction of white-tail rather than English red deer. Red deer, said Mr. Pierce, are more apt to compete for food with the present big game than are white-tail deer. Besides, he said, large areas of northern Newfoundland are in many ways similar to the mainland of Canada and United States where deer already thrive, in many places to the point of a superabundance.

According to Mr. Pierce, the absence of deer is more of a geographic accident than a deep-seated biological reason. In the end, Newfoundland may prove even better adapted to deer than the mainland, for the climate is less extreme both in winter and summer. This peculiarity is accounted for by oceanic and continental influences.

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BOTANY

Pineapple Plants Treated With Calcium Carbide

PUTTING calcium carbide on pineapple plants to force them into bloom is the device used by planters of tropical Australia.

Secret of the technique is the fact that calcium carbide is the parent stuff of acetylene, which evolves as a gas when the carbide is moistened. Acetylene is one of the hydrocarbon gases that has been used to stimulate plant processes, including blossoming.

The Queensland planters, however, have found it unnecessary to go to the somewhat expensive bother of gas-treating their pineapples. They merely drop bits of calcium carbide into the heart of the leaf cluster when the plant is in bud, and the first rain, or even heavy dew, causes the evolution of the acetylene.

Care has to be exercised in the treatment, because too much carbide burns the plants, too little produces no results. But experience indicates the right amount, and brings about an increase in the pineapple crop.

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BOTANY

Treated Sesame Has Bigger Oil-Bearing Seeds

SESAME, known to Occidentals mainly because of its mention as a magic password in the Arabian Nights tales, is an important food-oil plant in warmer lands. For this reason, there is possible economic importance in the experiments of Prof. D. G. Langham of the Instituto Experimental de Agricultura y Cria at El Valle, Caracas, Venezuela. Prof. Langham has succeeded in obtaining new strains of sesame with much larger oil-containing seeds by treating standard strains with colchicine, heredity-changing drug (*Science,* Feb. 20).

The new strains, which have double the chromosome number of the old, produce approximately equal numbers of seeds with comparable specimens of the ancestral varieties; but the seeds are on the average 56% larger. There are also several outstanding changes in the plant structure generally.

Science News Letter, March 7, 1942

MEDICINE

Practical Instruction Urged for First-Aiders

IMAGINE a bomb explosion in which a man is burned about the face and hands, severely cut on the shoulder from flying glass, and receives a compound fracture of the leg.

The victim lies amid piles of debris in an upstairs room from which he must be carried down in the dark with shielded flashlights.

This, says the *Lancet* (Jan. 17), is the sort of problem that first-aiders should be taught to handle.

In a plea for more realistic instruction of first-aiders, a *Lancet* editorial urges teachers to give their classes plenty of such examples to work on.

The editorial notes that American first-aiders commit the same blunders as the British:

"They fail to examine patients carefully enough; they pay attention only to the worst injury; they use splints which are too short; and they incline to be too free with the tourniquet."

The editorial concludes with the warning that "any of these dark nights the skill and conscience of the first-aid lecturer may mean the difference between survival and death for somebody, and if invasion comes the efficiency of our first-aid may turn the scale."

Science News Letter, March 7, 1942