PALEOBOTANY

NATURE RAMBLINGS
by Frank Thone

What Horse-Ancestors Ate

➤ LITTLE EOHIPPUS and his increasingly larger successors have trotted familiarly through many volumes, both heavily learned and lightly popular, for many years. Thanks to the abundant skeletal remains they left behind, in the rocks underlying our Great Plains, we know them all from hooves to teeth. We have even been able to infer from the teeth that the earliest horse-ancestors were browsers on rather generalized vegetation in the woods or on the forest-edges, but that the later forms became more and more specialized as grass-eaters.

But we did not know the grasses they ate. Bones and teeth, being solid and hard, fossilized well; "the grass which perisheth" left hardly a stem or leaf imprint in the muds of long ago on which we could base more than a plausible guess.

Now, however, we have the encouraging beginnings of a paleoflora of the Plains country during the last half of the Age of Mammals, thanks to Dr. Maxim K. Elias of the University of Nebraska and the Nebraska Geological Survey. He introduced his new science of paleoagrostology at the Dallas meeting of the American Association for the Advancement of Science (see SNL, jan. 3, 1942, p. 7), and now produces his first book, *Tertiary Prairie Grasses and Other Herbs From the High Plains,* published by the Geological Society of America ($1.50).

Although stems and leaves of almost all grasses are so perishable that they almost never survive long enough to form any kind of fossils, the seeds and their most closely associated structures, lemma and palea, are often of almost bony hardness; and the new science of paleoagrostology is based almost entirely on tiny fossils of these parts, painstakingly sifted out of the rock dust of excavations at dozens of sites all the way from South Dakota to the Texas panhandle. By great good fortune, it is on the characters of exactly these structures that botanists base their classifications of grasses. It is not often that the obliterating forces of nature are so nicely considerate of a struggling scientist's needs.

Dr. Elias has been able to set up some half-dozen genera, all similar to, or even identical with, existing grasses. One of them, which he has named *Stipidium,* has 21 species and forms; another, *Berrichloa,* has seven. Among the seeds are also those of a few herbs other than grasses, like some of the borages, as well as the stony fruits of the hackberry tree. Evidently the prairies of ten and twenty million years ago already had a rather familiar look about them.

Science News Letter, August 21, 1943

ENTOMOLOGY

Fight Against Insects Intensified By the War

➤ THE FIGHT against insects has been intensified because of the war, Dr. Fred C. Bishopp, assistant chief of the Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture, explained in Science Service's Adventures in Science program over the Columbia Broadcasting System.

Insects are among the most serious problems with which an army has to deal. Much attention is being given to keeping our soldiers free from loathsome pests with splendid results, Dr. Bishopp pointed out. Special precautions have been taken to protect them against lice, the little pests which are said to have stopped Napoleon's invasion of Russia by carrying the deadly epidemic typhus. Probably the most serious disease problem in our military operations is the mosquito-borne malaria, against which a number of methods of protection are being used.

Defense workers at home must also be saved from the annoyance and disease carried by insects, Dr. Bishopp related. Gardens, crops, stored grains, livestock, clothing and supplies likewise need to be protected.

"The insects have a whole bag of tricks and we entomologists now know many of them and are therefore less likely to be taken by surprise," Dr. Bishopp remarked. But it is hard, he explained, to convince people of the constant insect menace. They fail to back those attempting to exclude dangerous foreign pests, to strike early and effectively to prevent the spread and destructive foraging of insect hordes.

The war is making the problem of the entomologist increasingly difficult. By taking the Malay peninsula, the enemy has gotten control of the supply of one of our most dependable poisons for insects. Likewise a difficulty is presented by Kenya Colony in Africa having been the chief source of pyrethrum, used in making household sprays and against many food crop pests.

Experiments are being conducted, Dr. Bishopp said, to develop better methods of application and materials to make the scarce insect poisons go further. A search is being conducted for substitutes, and chemists are busy making hundreds of new compounds for the entomologists to try their effectiveness in insect control.

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Wasps in the home may be destroyed by placing a mixture of Paris green and honey where they will find it easily.

Both Brazil and Venezuela are producing *industrial diamonds* for American war purposes; they are used for drills, and for cutting, grinding and polishing high grade steel alloys.

Beeswax is needed by the Army and Navy; a national beeswax salvage program is now under way which government experts hope will round up a million pounds, the amount needed during one year.