

solved best by the use of the stable isotopes of the overwhelmingly important elements, hydrogen, carbon, oxygen and nitrogen which can only be supplied in quantity by the chemical method of the separation of isotopes.

"Fortunately it appears that the stable and radioactive isotopes complement each other in scientific investigation. The chemical method of separation of isotopes works best with the all-important elements, hydrogen, carbon, nitrogen and oxygen. The method of thermal diffusion and the artificially radioactive method of tagging elements works very well for the remainder of the elements in the periodic table."

While atom smashing and the production of radioactive elements for biological and chemical experiments is the current trend in physical science there are a whole host of experiments which are lengthy ones, involving the feeding of experimental animals with isotopic materials. For all such experiments, many of them the most important in the realm of biology and physiology, it is essential to have stable isotopes and not radioactive ones which disintegrate quickly. The half life of radioactive carbon, the element found in all living matter, is only about 20 seconds. Experiments performed with radioactive carbon must be done quickly. Such haste, potentially, may lead to errors.

Science News Letter, September 23, 1939

AGRICULTURE

Europe's Good Crops Promise To Prolong War

EUROPE has good crops this year, a U. S. Department of Agriculture survey shows. The war will therefore go on that much longer before old General Starvation begins his inevitable campaign. Herr Hitler waited until the reapers had gathered in the grain before sending them out to be scythed down themselves.

Potatoes and sugar beets, top crops in both Poland and the Reich, have yet to be dug: their harvest season is September and October. After that the diggers can go to work digging for themselves—trenches, and graves.

Europe's corn crop, like America's, is of bumper proportions this year. There is at least a fair chance that it may be harvested and not tramped down by hobnailed boots—the Iowa of Europe lies in countries that are still neutral: Rumania, Yugoslavia and Hungary.

Science News Letter, September 23, 1939



Tame or Domesticated?

WIDESPREAD custom regards "domesticated" and "tame" as synonyms. Yet even a moment's reflection will show how far from fact that is.

A domesticated animal is one that has been brought into common use by man, for food, clothing, work or other human purposes. It may still be able to get along all right in the wild if it escapes or is lost, like the turkey or the goat, or it may have been so changed by breeding that it would perish if restored to natural conditions, like modern high-bred hogs or sheep.

A tame animal, on the other hand, is one that is on friendly terms with man, whether it is useful to him or not. It may be intimately domesticated like the dog, or loosely domesticated like the cat, or not domesticated at all. We all know of tamed wild animals of the widest variety, from squirrels, chickadees and turtles to toads, crows and even skunks.

Some of the most traditionally domesticated animals are not tame at all. Silkworms, for example, are known only in domestication, yet no one ever thinks of them as tame animals. Bees also are domesticated insects (though carelessness may permit a swarm to escape to the wild), but they certainly are not tame. Sight of a bee-keeper, with his veil, gloves and smoker, is testimony enough on that point!

Larger domestic animals are often just about as unruly and hard to handle as bees. Travelers tell of the struggle that ensues whenever a Lapp woman wants to milk a female reindeer, or when her husband tries to harness up his sledge. The intractability of camels, and of their South American cousins, the llamas, is proverbial. Closer home we have the more familiar examples of the donkey and of his illegitimate child, the mule.

Sometimes the absence of tameness in

a domestic animal seems to be the result of differences in physiology, particularly sex. Most cows, ewes and she-goats are tractable and tame enough, but who would ever be foolish enough to turn his back to a bull, ram, or billy-goat?

At certain times, however, even the tamest of female animals will turn savage, especially when they have a brood of young. Tabby, who obligingly runs up a tree for the amusement of any wandering dog, will be turned by a litter of kittens into a prowling, demon-eyed murderess, just daring any canine to venture within a city block of her lair.

Science News Letter, September 23, 1939

ARCHAEOLOGY

Egyptian Paintings Found In South African Cave

CAVE paintings that seem to be the work of ancient Egyptians, not primitive Bushmen, are the reported discovery of a northern Transvaal farmer, G. Gadda.

Recognizing possible importance of the paintings, which if actually Egyptian would revise ideas of South Africa's history, Mr. Gadda has arranged for Dr. Robert Broom of the Transvaal Museum to inspect the cave.

Whether or not Egyptians explored or colonized in South Africa has been frequently argued, and the finding of Egyptian art so far inland would be a valuable clue. Twelve years ago, paintings found on rocks in southern Rhodesia, not far north of the present find, were considered by some observers to be significantly like Egyptian art, but more evidence has been awaited.

According to the Greek historian Herodotus, fifth century B.C., Pharaoh Necho sent a fleet manned by Phoenicians from Egypt to sail around Africa, about 600 B.C. Until recent years, this was regarded as an unlikely story.

Science News Letter, September 23, 1939

PHYSICS

Old Phenomenon Used In Modern "Black-Outs"

LIGHT STUFF. Street signs and direction markers that glow under invisible light in black-out Europe use an old phenomenon. Fluorescence under ultraviolet light is widely used in theatrical productions for changing costumes and scenery with the flick of a switch. In the new tubular lamps it is used to convert electricity into light more efficiently.

Science News Letter, September 23, 1939