

the value of the material history that our ancestors wrote into the soil of Mother Earth."

The Senecas have even stronger words to add about commercial relic hunters, who dig at Indian village sites and graves: "We protest that this work has no justification, that it is robbing America of the only remaining source of her prehistory, and is an uncivilized affront to the memory of our forefathers."

The Neighborhood Indian Society of Rochester, which adopted the resolution, is using it to petition state officials of New York to enact laws. They want laws forbidding excavations by "untrained, unregistered, and unlicensed persons."

Archaeologists who have spent years studying their specialized science in universities, would echo the Seneca protest. They themselves have protested against the wrecking of Indian sites by unskilled diggers. Any site once damaged becomes a blurred or unreadable page of our ancient history, lost forever.

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#### GLORY THAT WAS NOT GREECE

*Asia Minor did not have to await the coming of the Greeks to show forth beauty in stone. The Hittites in their day were a folk of high culture, as witness this exquisitely carved column base, found in the porch of a Hittite palace of the eighth century B. C. at Tell Tainat in North Syria by an expedition of the Oriental Institute of Chicago.*

#### PHARMACY

## Ephedra, Valuable Drug, Can be Grown on Badlands

### 500 Acres of Now Worthless Soil Able to Produce Crop For Whole American Market if War Stops Chinese Supply

**T**HE DAKOTA Badlands may never have been good for much before, but if fighting continues in China, this unproductive region of our own country may get a chance to redeem its reputation by making the United States independent of outside sources of an important medicine.

This medicine is ephedrine, valuable aid to asthma and hay fever sufferers and important ingredient of the solutions you drop or spray into your nose to relieve the miserable congestion and stuffiness of a cold. Ephedrine is obtained from the Chinese plant, ma huang or ephedra. In 1935 the United States imported 2,000,000 pounds of the little green ephedra stems for making nose drops, eye drops, capsules to relieve low blood pressure and various other medical uses. The next year the crop was bad and imports fell to 1,000,000 pounds. Only 700,000 pounds were obtained during the first ten months of 1937.

#### Manufacturers Worried

Drug manufacturers, worried over possibility of even worse reduction in the supply of ephedra, saw hope in the announcement by the U. S. Bureau of Foreign and Domestic Commerce that three German firms are manufacturing synthetic ephedrine.

Even better seems a report to the American Pharmaceutical Association which forecasts complete independence of outside sources of ephedrine. The ephedra plant itself has been cultivated successfully in the medicinal plant garden of the South Dakota State College at Brookings. The men responsible for this achievement are Dr. B. V. Christensen, director of the University of Florida School of Pharmacy, and Prof. Lovell D. Hiner of South Dakota State College.

The plants were grown from seeds obtained from the Peking Union Medical College and were first cultivated in the South Dakota college's greenhouses. Later they were transplanted to the medicinal plant garden where they survived the "ghastly black blizzard," when the average annual rainfall was not more

than a dozen inches, and the fierce winter of 1935-1936, pronounced the coldest for South Dakota in 50 years. Because the plants survived the drought so well, a test planting was made in the Badlands section of the state. The plants grew and were healthy even in this unproductive region, and although smaller than those in the college's garden, they yielded just as much of the drug, ephedrine.

At first the ephedrine yield—pharmacologists call it assay—of the plants was not very high but further cultivation has brought the assay up to that of the imported Chinese ephedra stems.

#### Emergency Production

Cultivation has not yet reached a commercial scale but Dr. Hiner has reported that several hundred pounds can now be cut from American-grown ephedra plants, and that "in case of emergency, ephedra of fair quality could be produced in South Dakota."

The plant itself is a low, bushy growth that appears to be all stems. Actually the leaves are there but have degenerated into scales. The medicine is obtained from the stems. The plant spreads something like grass by sending out underground stems or roots. In the course of two years one plant will grow to cover an area the size of a bushel basket. Dr. Hiner was able to obtain about two tons of ephedra from an acre, which means that the entire supply for the United States could be grown on some 500 acres of Dakota Badlands.

#### Labor Costs High

Cultivation of ephedra might be a successful venture during war or emergency that threatens to cut off outside supplies. At other times, however, it would not be successful financially. Officials of the American Pharmaceutical Association point out that in this case, as in the case of many other medicinal plants, the cost of labor would make American cultivation unprofitable if the plants could be obtained from other countries.

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