animal husbandry. The third section, of technical sciences, handles problems pertaining to transportation, communications, civil engineering, colonial equipment, implements and mine exploitation.

PLANT EXPLORATION IN MADAGASCAR

DR. CHARLES F. SWINGLE, botanist of the Bureau of Plant Industry, recently returned to Washington from a plant-exploration expedition to Madagascar, bringing back a mass of plant material which the bureau hopes will prove to contain a number of useful and valuable additions to the ornamental and economic plant life of the United States. Dr. Swingle was accompanied on the expedition by Professor Henri Humbert, professor of botany in the University of Algiers, North Africa, an authority on the plant life of Madagascar. As far as there is record, Dr. Swingle is the first American botanist to visit Madagascar, an island, nearly a thousand miles long, a possession of France, lying in the Tropic and Temperate Zones of the Southern Hemisphere in the Indian Ocean off the southeast coast of Africa.

The material brought back by Dr. Swingle, consisting mainly of live plants and seeds, will be tested for adaptation in the United States, but of course it may be many years before the value of it all is known.

Numerous ornamental plants—shrubs, vines and trees—some of which are unidentified, were in the collection. Of these, 12 species of Kalanchoe seem to be the most promising, especially in the southern states. Other promising ornamentals collected are a number of specimens of elephant's foot, several aloes and a striking and rare hibiscus-like plant.

In the collection are 23 lots of plants which seem to have some value as potential sources of rubber. Ten of these are now being commercially exploited for rubber in Madagascar. Some of them have been introduced previously into the United States and are now being tested in the department's experiment garden in southern Florida, but undoubtedly several are entirely new to the United States. The southern part of Madagascar, which lies just outside the Tropics in the South Temperate Zone, is like parts of our own southwest in many respects and the bureau hopes that some of these new rubber plants may be adapted there.

Apparently the real prize of the expedition consists of live specimens of *Euphorbia Intisy,* an almost extinct species of rubber-yielding plant. Twenty-five years ago the rubber from this plant was highly prized in France for making automobile tires. But the high value of this rubber spelled the doom of the species as a commercial one, at least for the time, for the natives collected the rubber so ruthlessly that even most botanists acquainted with Madagascar feared the species had become entirely extinct. The Humbert-Swingle expedition found some of these plants growing in an arid region, subjected yearly to six months without rain and sometimes to drought lasting as many years. This plant, which is almost leafless, is able to withstand these extremely arid conditions by having a water-storing root system of unique type.

Before leaving Madagascar with the collection, much of which was obtained near Fort Dauphin on the southeast coast, Dr. Swingle left a duplicate set of the living plants at Tananarivo, the capital, in the east-central interior, as a sort of "nest egg" to provide replacements in case of losses or injury to the collection during its long journey to the United States. Another duplicate set was sent to the University of Algiers, which cooperated in the expedition.

Dr. Swingle's trip was made possible through the cooperation of the Bureau of Plant Industry with the Arnold Arboretum, of Boston, with the University of Algiers, and by the friendly interest and numerous courtesies of the French and Madagascar governments.

A PROPOSED NATIONAL MONUMENT IN THE BAD LANDS OF SOUTH DAKOTA

THIS proposed national monument, which embraces a great part of the most scenic and interesting section of the South Dakota Bad Lands, is to be established by presidential proclamation, when certain requirements provided in a bill (S. 4385), upon which the House Committee on Public Lands has voted a favorable report after amending the measure as it came from the senate, have been met.

The total area proposed to be set aside in the substitute measure comprises approximately 50,760 acres (a reduction of 18,360 acres from the area proposed in the original bill), of which approximately 3,760 acres are privately owned.

The boundaries of the monument are fully set out in the bill, in which provision is made for its administration, protection and promotion under the National Park Service act.

The following are the conditions which must be met before the proposed act shall become effective:

1. A quantum of the privately owned lands within the proposed area, satisfactory to the Secretary of the Interior, must be acquired and transferred to the United States for monument purposes without cost to the government; and

2. Construction by the State of South Dakota, in a manner satisfactory to the Secretary of the Interior, of approximately 30 miles of highway, same to extend from

the town of Interior in a northwesterly direction to and over Big Foot Pass and through the region known as The Pinnacles, thence in a westerly direction to Sage Creek.

The bill also provides that only recognized scientific and educational institutions, upon permit from the Secretary of the Interior, shall be allowed to conduct expeditions within the monument area for the advancement of geological and zoological science.

The topography of the South Dakota Bad Lands is so unique, varied and interesting, and the fame of the region as a large field for scientific exploration of the geological past is so extensive, the committee feels that its scenic and educational features should be preserved for the use and enjoyment of the people.

The White River Bad Lands consist of the most important bad-land area of the world, several of the most interesting parts of which are included in the proposed bill. They lie generally in southwestern South Dakota, the most scenic part being in Pennington and Jackson Counties, and cover an area of about 1,000 square miles. A prominent arm, known as Pine Ridge, extends through northwestern Nebraska into eastern Wyoming. From Pennington County the Bad Lands extend northward for miles and miles in the form of lesser ranges, isolated mounds, buttes and offshoots.

The chief topographical features of the area embraced in the bill are The Pinnacles and the Great Wall. Viewing the former from the tableland, the spectator beholds a vast area of rutted ravines, high ridges, hills and cliffs of grayish white soil with varied stratas of coloring, extending as far as the eye can reach. The contour is so rugged that considerable of this region has never been surveyed. The fantastic outlines of these formations are constantly being changed by erosion.

In this region abound vast beds of fossil remains. Geologic formations, peculiar to this locality, appear in great variety. The whole area is a vast storehouse of the biological past, and for three quarters of a century it has been the scene of operations for scientific expeditions from all parts of the world. Specimens of these fossil remains repose in the world's principal museums.

THE WORLD'S ENGINEERING CONGRESS

THIRTY-TWO New York engineers and scientific men, with their families, will sail on the special ship reserved for the American delegation to the forthcoming World's Engineering Congress at Tokio, according to an announcement made by Dr. Elmer A. Sperry, chairman of the American committee. The entire New York party, which is scheduled to sail from San Francisco on October 11, will number sixty-four, and it is expected that this group will be augmented by further requests for passage on the ship.

The New York engineers, most of whom will be accompanied by their families, include: Edward Dean Adams, C. M. Keys, L. A. Osborne, Allen Hazen, J. V. W. Reynders, Robert Ridgway, Dr. Frank B. Jewett, George W. Fuller, Farley Osgood, George W. Gibbs, Dr. H. Foster Bain, Calvin W. Rice, Maurice Holland, E. De Golyer, F. L. Hutchinson, R. H. Colvin, H. de Berkeley Parsons, B. E. Eldred, Lawrence Addicks, Alfred D. Flinn, H. W. Harding, Daniel T. Turner, George T. Orrok, Dr. D. S. Jacobus, Ernest Hartford, William A. McDonald, Bert Emery, Colonel A. S. Dwight, Professor James W. Roe, Lacey H. Morrison, Magnus W. Alexander and Ernest Behrend.

The party is to arrive at Tokio via Honolulu on October 28, the day before the opening of the congress. The itinerary of many of the members of the New York delegation includes a world cruise following the meeting, although it is expected that many will take advantage of the invitation of officials of the congress to visit Japan's great industrial centers and to tour the empire's recreation and scenic centers.

PRESIDENT HOOVER ON EDUCATION AND PUBLIC HEALTH

IN his inaugural address on March 4 President Hoover said:

> Although education is primarily a responsibility of the states and local communities, and rightly so, yet the nation as a whole is vitally concerned in its development everywhere to the highest standards and to complete universality.
>
> Self-government can succeed only through an instructed electorate. Our objective is not simply to overcome illiteracy. The nation has marched far beyond that. The more complex the problems of the nation become, the greater is the need for more and more advanced instruction. Moreover, as our numbers increase and as our life expands with science and invention, we must discover more and more leaders for every walk of life.
>
> We can not hope to succeed in directing this increasingly complex civilization unless we can draw all the talent of leadership from the whole people. One civilization after another has been wrecked upon the attempt to secure sufficient leadership from a single group or class.
>
> If we would prevent the growth of class distinctions and would constantly refresh our leadership with the ideals of our people, we must draw constantly from the general mass. The full opportunity for every boy or girl to rise through the selective processes of education can alone secure to us this leadership.
>
> In public health the discoveries of science have opened a new era. Many sections of our country and many groups of our citizens suffer from diseases the eradication