

double those in 1910. This 20-year period since the separation of these two services especially directed to the promotion of the mining industry has been one of notable growth for both; yet because of the postwar economies their growth has not approached that of the industry they serve.

The discovery of geology by industry in recent years has placed the small corps of government scientists under new and larger obligations. The army of geologists and engineers in commercial work necessarily looks to the federal service for the collection of geologic facts and the working out of new generalizations and principles. High-pressure industrial development throughout the country has involved an increasing demand for raw materials, with a corresponding larger need for basic engineering information. The demand for intensive study of ore possibilities is most active in the same mining states—Colorado and Nevada—where the first mining work of the Geological Survey was done, the production of the epoch-making monographs on Leadville, Eureka and the Comstock, which had as their purpose to meet the anxious desires “of miners as well as of students of geology and economy.”

Another phase of governmental activity hardly foreseen in the beginning is the degree to which the public domain is administered on a scientific basis. In the twenty years beginning in 1907 approximately a million dollars was spent for geologic work in areas in which the federal government owns coal lands. Upon this investment of appraising its property the government is now collecting between \$400,000 and \$500,000 a year in royalties from coal mined from government leases. The oil and gas leases have been still more productive, although the chief contribution of this service to the public interest has been the conservation of the natural resources belonging to the people. The enforcement of the best economic practices by the federal engineers is their contribution to the conservation of life and health, both the zinc and the coal mines under federal supervision showing better accident records than other mines in the same states.

THE NATIONAL PARK SERVICE

THE cooperation of the National Park Service in affording relief to local unemployment during the past season is outlined in detail by Horace M. Albright, director of the National Park Service.

Upon telegraphic receipt last spring from the Washington office of the signing of the 1930 appropriation act of the Interior Department, throughout the national park system action was immediately taken to get construction under way and to purchase equipment. The headquarters office kept in close touch with

the field, making adjustments and transfers of funds where necessary to enable the park superintendents to carry on to the best advantage.

In addition to beginning construction and improvement work early in the season, these activities were carried on all summer under full steam and as late into the fall as weather conditions permit. Yosemite National Park, California, reports that it already has continued operations five weeks longer than last year, and proposes to continue until heavy snowfall shuts up the last activities. A few days ago it was reported that despite the heavy snows which necessitated shut-downs of work in the mountainous back country, 358 people were still on the pay roll. This is in addition to the highway construction being carried on under contract.

One of the highway jobs, that of building a tunnel through solid rock, will continue all winter, and the contractor in charge has agreed to take many men from the park forces as other work is suspended through climatic necessity.

In Carlsbad Caverns National Park work will continue all winter on the construction of an elevator shaft, 750 feet deep, and the installation of elevator equipment. Contracts will be awarded within a few days to enable work to commence at once.

At Hot Springs National Park award has just been made covering the construction of a complete hot-water system collecting all hot water from the springs, and also for the construction of concrete reservoirs, pumping station, pipe lines, etc. Much labor will be employed directly by the government.

Contracts will soon be let for the purchase of the pumping and electrical equipment. This project will cost approximately \$140,000 and will materially improve the unemployment situation in the Hot Springs region during the period of greatest winter stress.

Work will also be continued during the winter in Wind Cave National Park, where a lighting system will be installed, and in the Mesa Verde, where a deep water well—probably 3,600 feet or more deep—will be drilled.

In Grand Canyon National Park, work will be in progress all winter on the reconstruction of the Bright Angel Trail. This trail is one of the long-remembered features of Grand Canyon by all those who either hike or ride mule-back into the depths of the canyon. It passes along ledges and through clefts in the solid rock walls. The new trail now being constructed will still be just as spectacular as the old one, but of sufficient width and ease of grade to afford perfect safety.

THE NIAGARA FRONTIER RESEARCH COUNCIL

THE Niagara Frontier Research Council has completed its organization to include investigators repre-