

cart Calkins, who has been with the Survey since 1901.

A leading authority on deep earth temperatures particularly as related to important oil fields goes with the leaving of C. E. Van Orstand.

Dr. Nelson Horatio Darton's contributions have been in the geologic and topographic mapping of the southwestern part of the United States. For this work he has been awarded the Charles P. Daley medal of the American Geographical Society.

Dr. Arthur Coe Spencer is a specialist on mine deposits and has also investigated dam and reservoir sites.

Louis M. Prindle is an expert on the complex geology of northwestern Massachusetts and adjoining states.

Dr. Charles Butts is a stratigraphic geologist.

Dr. George Burr Richardson, a specialist in oil and gas and in the mapping of oil and gas fields of the United States, has also served the Internal Revenue Bureau for special investigations in connection with the valuation of oil and gas properties.

Arthur James Collier is an authority on coal, petroleum, and gold deposits.

These men are typical of those that the government service is sacrificing in the name of economy.

International Congress

By unhappy coincidence this "economy" attack on the U. S. Geological Survey comes at a time when America is host to foreign geologists. The International Geological Congress meets in Washington during the last week in July. Not a cent of Government support is given this meeting, although foreign governments have subsidized previous congresses held in their countries. Uncle Sam's greeting to the foreign geologists comes in the form of dismissals to some of their colleagues who will act as hosts.

Science News Letter, July 15, 1933

PHYSICS

Cuts Destroy Uncle Sam's Photographic Laboratory

UNCLE SAM has fired his experts on the making of photographic films. In the interests of "economy" dollar saving, the Government will scrap a laboratory which it has taken a decade to build and which could not be duplicated except at immense cost in time and money.

All the Government saves by this

move is less than \$10,000 a year. Thousands, not millions! Less than half of the initial cost of one of the Air Service's photographic planes! Yet with this Bureau of Standards laboratory gone, the plane and all other military and civil photographic outfits of the Government will depend entirely upon the few commercial film companies in this country for knowledge regarding the emulsions they must use. In peace time, this is a serious situation. In war time, it might be disastrous.

Only Research for Public

With the laboratory, goes Dr. Bert H. Carroll, young physical chemist, who has had the distinction of being the only scientist in this country to do research work for the public on the important subject of the making of the emulsions that make photographic films sensitive. He is one of the very few men in this country outside commercial film companies who are familiar with the subject. With him also goes Dr. Donald Hubbard, who has been in the laboratory for seven years rated as a "junior chemist" although qualified as a specialist in this field.

The making of emulsions for films has always been considered an art. The men who could do it have guarded their skill as a trade secret, and have passed it on to others only in the same company. Even they have great difficulty in making the emulsions in case they move to another plant and have to work under different conditions, because the underlying principles have not been understood. Even the most modern emulsion plant when it moves from place to place usually takes more than a year to get going again.

When the United States was faced with the World War, the importance of aviation photography became evident. We had to have photographs, from the air, of the enemy lines. This meant that we had to take photographs at long range. We had to take them with short exposures. We had to take them through the mists which invariably lie between a high flying plane and the ground. And we had to have results that would show details clearly.

This meant, in turn, that we must have better films. Films sensitive to the red end of the spectrum were an absolute necessity.

Then the Government discovered within the service, in the spectrographic laboratory at the Bureau of Standards, experts on the sensitization of plates or film to the red. Research was started

which resulted in the hypersensitization process used for ten years by the air service.

In 1922, funds were transferred from the air service to the Bureau of Standards for research on making films more sensitive, and particularly on the making of new and better emulsions.

It was necessary to build from the ground up. Nothing recent existed in print on the subject of emulsion making. Dark secrecy surrounded the whole subject. Even today, no university in the land is doing research on this subject. No laboratory in a public institution had undertaken it.

Even in the commercial research laboratories, the work has been extremely limited. Manufacturers have produced dyes which are added to the emulsion to make it sensitive to the red end of the spectrum, but they have published extremely little which dealt with anything remotely connected with making of the emulsions themselves.

Science News Letter, July 15, 1933

AVIATION

Public Safety In Air Endangered By Slashes

GOVERNMENT CUTS in the name of economy are endangering public safety in the air.

The U. S. Department of Commerce issues certificates for approved types of airplane engines. In June, 1933, this meant that the engine stamped with this mark of Uncle Sam's approval was of a safe and practical type. It meant that the engine had been tested by experts of the National Bureau of Standards in the government's own testing plant at Arlington, Va.

Manufacturer's Test Accepted

But in July, 1933, and thereafter unless funds not now provided for this purpose are forthcoming, Uncle Sam's certificate will mean something entirely different. It will mean that the manufacturer, not the government, has tested the engine. The tests will be conducted in the plant of the manufacturer, by persons in the employ of the manufacturer, with the manufacturer's testing equipment. A single government inspector visiting the plant will be expected to insure that test conditions are satisfactory.

Some aviators, who have to trust their lives to their motors, have expressed the opinion that a government certi-