THE SOIL SURVEY FROM THE HORSE-AND-BUGGY DAYS TO THE MODERN AGE OF THE FLYING MACHINE

Macy H. Lapham

Under date of February 15, 1894, announcement was made of organization under direction of Professor Milton Whitney of a Division of Agricultural Soils in the U. S. Weather Bureau of the Department of Agriculture at Washington (15). This Division of the Weather Bureau was recognized later, on July 1, 1895, as an independent office, and in 1897 as the Division of Soils. It was, by Congressional approval, given status of the Bureau of Soils on July 1, 1901 (13). The field had been prepared by previous publication by Professor Whitney of several papers relating to soil investigations and soil and crop relationships while at the Maryland Agricultural Experiment Station at College Park (16, 17, 22). Similar papers under new authority of the Department of Agriculture were accompanied or were quickly followed by others of wider geographical scope (18, 19, 20, 21, 23, 24).

These studies, we may believe, gave rise in the mind of Professor Whitney to concept of the soil survey on nation wide level from which might be learned the character and uses of the soils of the various regions.

For years the U. S. Geological Survey had been studying and mapping areas of economic minerals; why should a survey of the soils upon which the economic life of the United States is so dependent be neglected? To know the soils of the country and how to live with them would be a commendable undertaking. The soils should be studied, mapped, and classified, and described in reports for information of the public.

In September, 1899, the writer was given appointment in the Division of Soils as Scientific Aid. Notice of appointment was made by an elaborately printed and embellished certificate signed in person by the Hon. James Wilson, Secretary of Agriculture, which stipulated that the appointee would be paid the modest sum of $40 a month; in striking contrast to the present day skimpie piece of thin paper signed with a rubber stamp which may certify one to a $5,000 or $6,000 job. Purpose of this newly created position of Scientific Aid was to give opportunity for a limited period to young college graduates to acquire experience and training while becoming fitted for permanent appointment to technical positions. Similar appointments given to others followed.

After arrival in Washington, several months were spent in the physical laboratories where techniques and equipment for laboratory and field studies were being developed. Among early associates were W. G. Smith who had been appointed in July of that year, and R. T. A. Burke who came into the Division following December. Others of earlier appointment included Thomas H. Means, Frank D. Gardner, Clarence W. Dorsey, and J. A. Bonsteel. Mr. Means was soon afterward transferred to the Reclamation Service—now Bureau of Reclamation—and a time in charge of a soils laboratory in Calif. He is now a resident of Berkeley as consulting engineer in San Francisco. Mr. Gardner, who retired, was for many years afterward with the State College of Pennsylvania. Mr. Gardner later became a citrus grower and resident of eastern California. Dr. Bonsteel resigned in 1920 to manage his farm in Cattaraugus County, N. Y. She returned to the Department in 1935 where her son, an editorial capacity with the Soil Conservation Service until his death April 28, 1943.

We shall not pass over service of early personnel without honorable mention of Miss Janette and Miss Sorena Haygood who for years maintained laboratory and field records. Miss Haygood, in fact, believed to have been the appointee since she was appointed January 4, 1895, while the Division was still a part of the Bureau. She was retired in 1923 and died months later after a long illness. Miss Haygood, now Mrs. Sorena H. Barse and now retired, is living in Chattanooga, Tenn.

Means, Gardner, Dorsey, and Bonsteel had pioneered in soil surveys in Utah, Colorado, New Mexico, and in the Connecticut Valley in the years of 1899 (7, 10, 11, 6, 12). In a letter to the Senate and House of Representatives transmitting Report 64 of the Department of Agriculture in which reports covering these early surveys were published, President McKinley makes this statement: "In recognition of the Secretary of Agriculture, this is an important work of this kind ever undertaken.

In the early summer of 1900, other soil surveys were undertaken in a number of states. Field work in the western areas with which the writer was familiar consisted mainly of a somewhat cumbersome and complicated electrolytic bridge and field kit for determining the amount of soluble salts, but inaccurately known as "alkali", a 6-foot soil auger, a shovel or spade for occasional use, note books, colored pencils, and a copy of the inadequate county or other available base map. Topographic quadrangles of the U. S. Geological Survey were used, when available, as a base.