

THE GEOLOGICAL SURVEY OF WYOMING
Horace D. Thomas, State Geologist

BIENNIAL REPORT
OF THE STATE GEOLOGIST
1955-1957

Laramie, Wyoming
January, 1957

January 19, 1957

The Honorable Milward L. Simpson
Governor of the State of Wyoming
Cheyenne, Wyoming

Dear Governor Simpson:

Pursuant to the requirements of Article 12, Section 18-1204, Wyoming Compiled Statutes, 1945, the Biennial Report of the State Geologist for the years 1955-57 is herewith submitted.

Respectfully yours,

Horace D. Thomas
State Geologist

HDT:ssb

Biennial Report of the State Geologist

of the

State of Wyoming

for

1955 - 1957

by

Horace D. Thomas, State Geologist

INTRODUCTION

This report covers the activities and accomplishments of the Geological Survey of Wyoming during the two-year period 1955-57. The geological projects undertaken are briefly described, the various activities of the Survey are discussed, and the resulting publications are listed.

ORGANIZATION OF THE GEOLOGICAL SURVEY

All states but Massachusetts, Colorado, and South Carolina have active geological surveys. Many are located at state universities or colleges and are commonly affiliated in some fashion with the department of geology. During 1955, the 47 state geological surveys employed 421 geologists (367 full-time; 54 part-time) and had a sum of \$6,761,546 available during the year. The average appropriation for each survey is \$150,256 per year. Some states, such as California and Illinois have annual appropriations ranging from \$471,000 to \$878,000. Wyoming, with its annual appropriation of \$20,000 ranked fourth from the bottom, and only Maine, Connecticut, and New Hampshire appropriated less money. Wyoming is far more important in mineral production than either of these three. It should be pointed out, however, that some of these surveys carry on programs similar to that of the Natural Resources Research Institute at the University of Wyoming, to that of the Wyoming State Oil and Gas Supervisor, and to that of the Wyoming State Mine Inspector.

The Geological Survey of Wyoming has been located at the University of Wyoming since 1933. Dr. S. H. Knight, Professor of Geology, served as State Geologist from 1933 to 1940. The incumbent, Dr. H. D. Thomas, Professor of Geology, has served since April, 1941. The State Geologist, by

virtue of action of the University Administration, carries a half-time teaching load and devotes the other half of his time to the Geological Survey.

In 1951, for the first time, a full-time Assistant State Geologist was employed. Mr. William H. Wilson resigned from the Ground Water Branch of the U. S. Geological Survey to accept the appointment. He holds B.S. and Geological Engineer degrees from the University of Utah, and an M.A. degree from the University of Wyoming, having specialized in economic geology (mineral deposits) and ground water geology. The addition of Mr. Wilson to the staff aided immeasurably in broadening the program and the services of the State Geological Survey.

A full-time secretary, Mrs. Shirley Burke, is also employed. Her duties involve the maintenance of office records, the distribution of publications and maps, and the supervision of routine office matters.

Students in geology at the University are employed on a part-time basis to undertake specific geological assignments as geological draftsmen, to maintain collections of samples and cores from wells drilled for oil and the electric logs of deep wells, and in many other ways.

The general organization of the Geological Survey, its location at the University and its affiliation with the Department of Geology are sound. Because of its location at the University, it is possible to obtain the advice and part-time assistance of the 6 geologists on the staff of the University Geology Department. In addition, close cooperation is maintained with the University of Wyoming Natural Resources Research Institute, whose work is devoted to research on the utilization of Wyoming mineral resources. The Wyoming office of the Fuels Branch of the U. S. Geological Survey is located in Geology Hall, and close cooperation is held with that agency. The U. S. Bureau of Mines Petroleum Experiment Station and Oil Shale Laboratory is located nearby on the Campus. The advice, suggestions and assistance of chemists, physicists, engineers and other scientists on the Campus are readily obtainable. The laboratories and library facilities on the Campus are valuable aids in carrying on the work of the Geological Survey.

In September, 1955, quarters in the new Geology Building on the campus were occupied. The Survey has three offices, a map filing and distribution room, and a drafting and filing room. In addition, a large part of the basement is devoted to storage space for oil well samples and cores. The library has been combined in one stack room with the University geological library. More important, the Survey benefits from the installation of fine new technical equipment by the Department of Geology, such as X-ray diffraction equipment, differential thermal analysis equipment, and other devices used in mineral and rock determinations.

PROPOSED PRE-CAMBRIAN PROJECT

For the 1957-59 biennium, it is proposed to enlarge the program of the Geological Survey through the addition of a long-range program of mapping the areas of pre-Cambrian rocks in Wyoming, and an additional \$9,200 has been requested for that work. The mapping of these areas by graduate students under the direction of a professional supervisor would enable the State to obtain this information at a minimum cost.

The basin areas of Wyoming have been fairly adequately mapped, because within them lie the deposits of coal, natural gas, petroleum, bentonite and other commodities associated with sedimentary rocks. The pre-Cambrian areas remain essentially unmapped, even though those of southeastern Wyoming contain all the known metallic mineral resources of that part of the State. With the exception of a few small areas, the pre-Cambrian rocks have never been investigated by trained geologists. The U. S. Geological Survey has shown no intent to map these areas, and the only way it can be achieved is through the appropriation of State funds.

The detailed mapping of the areas of pre-Cambrian rocks would be most valuable because: (1) old mining districts could be reevaluated with modern techniques and under present economic conditions, (2) in the process of new mapping there is good chance for the discovery of new mineral deposits, (3) newly discovered deposits of uranium and rare earths could be studied and new ones might be found, and (4) the scientific knowledge gained would be useful in the development of a fuller understanding of the geology of the State.

ACTIVITIES OF THE GEOLOGICAL SURVEY

COOPERATION WITH THE U. S. GEOLOGICAL SURVEY

Informal cooperation is carried on with all branches of the U. S. Geological Survey. The State Geologist has brought to the attention of the U. S. Geological Survey certain geological problems needing attention, and the Federal Survey has taken action on them. Conversely, the Federal Survey keeps us informed on the independent projects it is carrying on in Wyoming. This complete cooperation lends effectiveness and efficiency to the geological work carried on by both agencies in the State and prevents overlap or duplication of effort.

In November, 1956, the U. S. Geological Survey was independently carrying on 31 specific projects in Wyoming, according to Dr. W. H. Bradley, Chief Geologist. These include geological studies and mapping of specific areas (14 projects); stratigraphic studies (5 projects); and economic geology (12 projects). In economic geology, 8 projects deal with uranium occurrences;

others are concerned with titanium, selenium, trona, and bentonite. All field work on 11 of the projects has been completed and reports are being prepared for publication.

Formal cooperative agreements with the U. S. Geological Survey for the undertaking of geological investigations in Wyoming have been carried on since 1941. State and Federal funds are matched in equal amounts on specific projects. These agreements have enabled the State to obtain geological work for half the cost, and to take advantage of the highly skilled personnel of the U. S. Geological Survey. Projects have been carried on dealing with phosphate rock, titaniferous magnetite, anorthosite, cordierite, titanium, regional geology, ground water supply, and the examination of individual mineral deposits. The results of completed projects have been published either by the State Geological Survey or by the U. S. Geological Survey.

Fuels Branch. - Formal cooperation is maintained with the Fuels Branch of the U. S. Geological Survey, whose offices have been located in Geology Hall since November 20, 1943. During 1956, Dr. J. D. Love was relieved of the administration of this office and now is Research Geologist. Dr. W. R. Keefer is now supervising geologist. Both are graduates of the University of Wyoming. Four other geologists, a draftsman and a secretary complete the staff.

The Fuels Branch is concerned principally with the petroleum geology and fuel resources of Wyoming, but some uranium investigations are also included in the program. As a result, 42 maps, charts and bulletins have been issued; 35 as federal publications and 7 as publications of the State Geological Survey.

Mineral Deposits Branch. - In 1944, a long-range cooperative program was established to study the geology of the Laramie Range. Principal attention was paid to the alumina and titaniferous iron deposits, but during the course of the program a very large deposit of a rare mineral, cordierite, was discovered. All field work on the project has been completed. Part of the results have been published -- one State bulletin deals with the alumina rock, a second deals with the cordierite deposits. A preliminary report on the titaniferous iron deposits has been placed on open file where it is available for public inspection. Four additional reports will result from this project. These include a final report on the titaniferous iron deposits, one on the general geology of the Laramie Range, a theoretical paper on the gneisses, schists and related rocks, and one dealing with the theoretical aspects of the titaniferous iron deposits. The last two will be published in technical journals and reprints will be distributed as contributions of the State Geological Survey.

During 1954, a new cooperative project was begun on titaniferous sandstone deposits discovered in Hot Springs, Natrona and Albany Counties. The investigation comprises a mineralogic study of the deposits which will be basic to their possible commercial utilization. The work is being done in Laramie by Mr. John Murphy, geologist of the U. S. Geological Survey, and Dr. Robert Houston, Assistant Professor of Geology, University of Wyoming. Publication of the results, as a State Survey bulletin, is anticipated in 1957.

Engineering Geology Branch. - Prior to 1951, cooperative projects were carried on with the Engineering Geology Branch, and as a result the Federal Government has issued two maps of Wyoming showing metallic and nonmetallic mineral deposits, and the State has issued one map showing sand and gravel deposits. No formal cooperative projects have been carried on since 1951.

Ground Water Division. - Prior to 1951, the State Geological Survey cooperated formally in two ground water projects on which reports were issued. No formal projects were undertaken during 1955-57, but this office enjoyed the full cooperation of the Ground Water Division on minor problems pertaining to Wyoming ground water occurrences.

COOPERATION WITH OTHER FEDERAL AGENCIES

U. S. Bureau of Mines. - In 1953, the State Geological Survey entered into a formal agreement with the U. S. Bureau of Mines for the annual collection of basic data on Wyoming mineral production. Close, but informal, cooperation is carried on in other ways. Deposits of certain minerals which need core drilling, or other subsurface development, have been brought to the attention of the Bureau of Mines and, if warranted, that agency has carried on subsurface exploratory work. There has been a free interchange of information between the State Geological Survey and the Bureau of Mines.

U. S. Coast and Geodetic Survey. - The State Geological Survey supplies the Seismological Field Survey with data on the occurrence of earthquakes in Wyoming. Earthquake report cards are distributed to forest rangers, postmasters, and others over the State. These report cards are returned to the State Geologist with information regarding earthquake occurrences. The assembled data are then sent to the Seismological Field Survey. A fine seismograph has now been installed in Geology Hall and negotiations are underway to tie this station into the network now formally reporting earthquakes.

Other Agencies. - The State Geological Survey is called upon to supply geological information to many other Federal agencies, such as the Soil Conservation Service, the Grazing Service, the Reclamation Bureau, the Department of Commerce, and others. Data have been supplied to Congressional Committees and to other Federal groups or committees.

COOPERATION WITH UNIVERSITY AGENCIES

Department of Geology. - The intimate interrelationship of the Geological Survey and the Department of Geology has been pointed out earlier in this report. It should be pointed out further, however, that the field research undertaken by graduate students is of great value to the Geological Survey. These results are made available to us early. Many of the resulting theses have been published by the Geological Survey. In turn, the Geological Survey has assisted students in defraying field expenses on projects in which the Survey is interested, or by supplying thin sections or polished surfaces.

The graduate students constitute a valuable store of part-time assistance for the Survey. They have been employed to catalog oil well samples, plot oil well logs, draft geological maps and illustrations, and to undertake other assignments. The students, in turn, receive useful experience in applied geology. If it were not for the high-quality part-time help available through the employment of graduate students, the full-time staff would have to be considerably larger.

Natural Resources Research Institute. - The Natural Resources Research Institute was established to carry on scientific research on the utilization of the mineral resources of the State. The Geological Survey and the Natural Resources Research Institute work in close cooperation and the State Geologist is a member of the executive committee of the Institute. The Geological Survey may bring to the attention of the Institute any mineral deposits whose quality or uses might be determined through laboratory investigations. In turn, the Institute supplies the State Geological Survey with needed analytical information on mineral specimens submitted as an aid in determining the potentialities of certain deposits.

COOPERATION WITH STATE DEPARTMENTS

Natural Resources Board. - The State Geological Survey stands ready to cooperate with the Natural Resources Board in any possible manner on the mineral resources of the State or in engineering or ground water problems on which geology has a bearing. The Geological Survey has supplied data on mineral deposits, made examinations of potential damsites, conferred on ground water problems, and participated in public conferences held over the State on natural resources.

Oil and Gas Conservation Commission. - The State Geologist, by law, is a member of the Oil and Gas Conservation Commission. The Geological Survey is now receiving from the State Mineral Supervisor copies of electric logs of wells drilled in the State. Such logs have been difficult to obtain in the past and the arrangement facilitates keeping the electric log file complete.

Commissioner of Public Lands. - Prior to the issuance of permits for the collection of fossils in Wyoming, which are obtained from the State Commissioner of Public Lands, the endorsement of the State Geologist is necessary. The Geological Survey also has been called upon to offer opinions on mineral associations in respect to State mineral leases. These are strictly geological matters and each one appears to constitute an individual problem. In addition, the Geological Survey advised on and materially contributed to the revision of State mineral leases. This should eliminate unnecessary clerical expenses and protect the State from lawsuits originating over conflicting leases.

State Highway Department. - The Geological Survey has cooperated with the Highway Department in the erection of roadside markers describing geological points of interest. The Geological Survey prepared the geological descriptions and the Highway Department supplied and erected attractive wooden signs. Descriptions of the geological features observable through Wind River Canyon have been placed at either end of the canyon to enable tourists and others to better understand the superb geological cross section of the earth's crust visible from the highway.

State Game and Fish Commission. - Over the years, the Geological Survey has assisted the Game and Fish Department on matters of water supply for hatchery use.

TECHNICAL INVESTIGATIONS

Mining Geology

Kirwin district, Park County. - The study of the old Kirwin mining district, which was begun by Mr. Wilson in 1951, has been substantially completed and it is expected that an open file report will be prepared sometime during 1957, after final field checks have been made. The proposed geological mapping of approximately 350 square miles is about one-third completed. The area is exceedingly rough and mapping is arduous and difficult. This region has never been mapped before. The final report, when completed, besides including data on the Gold Reef mining area will be a valuable contribution on the volcanic history of northwestern Wyoming.

Hartville district, Platte County. - Mr. Ballard Ebbett, a graduate student in geology at the University of Wyoming, was subsidized by the State Geological Survey in the investigation of the pre-Cambrian rocks of the Good Fortune mining district of the Hartville uplift. Field work extended over the summers of 1954 and 1955 and laboratory work during the winters. The final report, titled "Structure and petrology of the metasedimentary rocks of the Good Fortune mining area, Platte County Wyoming", completed in June, 1956, is fundamental to the understanding of the occurrence of iron ore deposits in the area.

Encampment district, Carbon County. - Mr. Vernon Anderson, a graduate student at the University of Wyoming, was subsidized by the State Geological Survey in a field study of a portion of the old Encampment copper district during the summer of 1955. When completed, the study will be an initial contribution on an area that vitally needs remapping in order to evaluate its mineral potential.

Mineral Inventory

As a long range project, the Geological Survey has been compiling factual and reliable data on the known mineral deposits of the State. As a result of this program, Bulletin 45, "Wyoming Mineral Resources" was published during 1952. Although this is a valuable contribution, a great deal more study is necessary in order to obtain still more complete and reliable data. As a means toward this end, the following mineral deposits were examined by Mr. Wilson during 1955-1956:

Gold-silver-lead deposits, Park County	Uranium, Park County
Copper, Carbon County	Manganese, Weston County
Copper, Park County	

Engineering Geology

Dam sites. - During 1955-1956 the Geological Survey assisted the Natural Resources Board by making geological examinations of 15 proposed reservoir and dam sites in connection with possible water leakage and foundation conditions. The locations are as follows:

Pass Creek, Johnson County	Laramie River, Albany County
North Fork Powder River, Johnson County	Shoshone Lake, Fremont County
Inyan Kara Creek, Crook County	Sybille Creek, Platte County
Piney Reservoir, Sublette County	Sunshine Creek, Platte County
Gros Ventre River, Teton County	Sulphur Creek, Uinta County
Teton Creek, Teton County	Horse Creek, Laramie County
La Barge Creek, Lincoln County	Leavitt Reservoir, Big Horn
Douglas Creek, Albany County	County

Converse County High School. - In 1955, the Geological Survey was called upon to make examinations and prepare a report upon geologic or soil conditions which were contributing to the structural failure of the new Converse County High School. Mr. Wilson had examined this site in 1952 and at that time recommended the selection of a different site because of poor foundation materials. The school was built in the condemned area, however, and the anticipated failure took place.

Meeteetse High School. - In 1956 the State Geological Survey was called upon for advice on the cause of cracking and settling of the Meeteetse High School building.

Ground Water

An examination of the Goose Egg spring, Natrona County, was made at the request of the Game and Fish Commission regarding its suitability as a water supply for a fish rearing station. Partial subsidy was granted Mr. James Robinson, graduate student in geology, for a study of and the preparation of a report on ground water occurrences in the vicinity of Laramie. Helpful advice was given to many individuals, principally ranchmen, on the possibilities of obtaining water on their lands and on the drilling depths to possible aquifers.

Paleontology

Studies in paleontology initiated by graduate students and staff resulted in publications concerning a Cambrian fossil sponge from the Wind River Mountains and on Cambrian trilobites from northwestern Wyoming. These were issued as part of the reprint series of the State Geological Survey. Two graduate theses were completed on the Pennsylvanian and Permian invertebrate fossils of the Laramie Range and of the Wind River Mountains.

Regional Geology

During 1955 and 1956, eleven graduate students completed the regional geological mapping of several thousand square miles in Carbon, Albany, Fremont, Sublette, Hot Springs, Natrona, Sheridan and Platte counties. The resulting reports are available for public inspection and copies of the accompanying maps are distributed by the State Geological Survey. These maps are in demand because of their use in petroleum exploration, uranium prospecting, and ground water developments.

Stratigraphy

Two reports by graduate students were completed on the stratigraphy of Cretaceous rocks in the Rattlesnake Hills, Natrona County, and of the Ordovician rocks of the Big Horn Mountains.

Mineral Identification Service

The Geological Survey maintains a free mineral identification service designed to be of value to prospectors, amateur rock collectors, and the general public. If the submitted specimens appear to have possible economic importance, they are turned to the Natural Resources Research Institute for

assay or analysis. Several potentially important mineral deposits in the State have been brought to light through this service in the past.

With the great increase in prospecting brought about through the discovery of uranium in Wyoming, there has been a much greater demand for this service and at times the Assistant State Geologist has been hard pressed to keep ahead of the specimens delivered in each day's mail. As a result of this intensive prospecting, valuable minerals other than uranium have been and will be discovered.

OIL WELL SAMPLE LIBRARY

The Geological Survey has in its oil well sample library the most important representative collections of Wyoming oil well samples in the Rocky Mountain region. The collection has been accumulated through the cooperation of oil companies operating in Wyoming, who have donated samples and cores with the belief that they will be properly cataloged, cared for, and preserved for the future at the University.

Although a large part of the basement of the new Geology Building will be devoted to space for sample storage, it is necessary for the U. S. Geological Survey to occupy part of this space until the completion of the remodeling of the old wing of Geology Hall in the fall of 1957. Shelving in part of the area has been erected, however, and samples which have been in dead storage at various places over the campus are now being assembled and cataloged.

ELECTRIC LOGS OF DRILLED WELLS

The Geological Survey has available a fairly complete collection of electric logs of deep wells drilled in the State and it is estimated that the logged footage exceeds 20 million feet, or 4,000 miles, of drilled hole. The file is being kept complete through the cooperation of the State Oil and Gas Supervisor who sends the Geological Survey one copy of all logs filed with him. Such a file of electric logs is invaluable in geological research and is used not only by staff and students at the University, but by many other geologists.

EARTHQUAKE REPORTS

Reports on earthquakes in Wyoming are made to the Seismological Field Survey of the U. S. Coast and Geodetic Survey by the State Geologist, who serves as Collaborator in Seismology. Data on earthquake frequencies are valuable in the determination of equitable insurance rates and in connection with the erection of large structures, such as dams, and the excavation of underground workings, such as tunnels and mines. Wyoming is quite stable seismically and in the 15 years of reporting, there have been no earthquakes

of any but minor intensity. Most earthquake reports come from Yellowstone National Park and adjacent areas. The installation of a seismograph in the new Geology Building will aid immeasurably in an understanding of the seismicity of Wyoming, as well as in serving to pinpoint the location of earthquakes, or violent man-made explosions, at other places in the world.

PUBLIC EDUCATION

Wyoming industrial rock and mineral sets. - Sets of 16 important Wyoming rocks and minerals have been prepared in special compartmented boxes. Composition, properties, uses and occurrences are given inside the lid. These sets are available to Wyoming secondary schools for instructional purposes. A simplified brochure on Wyoming mineral resources has been prepared for use in conjunction with the sets of specimens.

Tourist information. - Many tourists planning to visit Wyoming are amateur mineralogists and prior to their visits ask for information on the occurrence of mineral specimens in the State. A pamphlet on rock and mineral localities has been prepared to fill such requests.

Geological roadside markers. - Cooperating with the State Highway Department, the Geological Survey has prepared 100-word descriptions of geological phenomena visible along Wyoming highways. These have been incorporated on attractive roadside markers erected by the Highway Department. Wyoming has a diversity of well-displayed geological features and this is an excellent way to familiarize the public with glacial, erosional, structural, mineralogic, and paleontologic examples.

PUBLIC SERVICES

Office callers. - Almost every day representatives of oil and mining companies or other individuals interested in mineral resources call at the Geological Survey offices. One of the most effective points in handling such callers is that here in one building such persons may take advantage of advice and information available from the staffs of the State Geological Survey, the U. S. Geological Survey and the Department of Geology of the University. In addition, it is possible for such persons to confer also with other agencies located on the campus, such as the Bureau of Mines, the Natural Resources Research Institute, the Engineering College, or other departments.

Correspondence. - A large volume of inquiries seeking information on Wyoming mineral resources, petroleum geology, and geology in general is received daily by the office. Properly answering this mail constitutes a rather imposing chore.

Topographic sheets. - The Geological Survey carries a supply of the topographic maps covering Wyoming. These are useful to hunters, fishermen, campers, prospectors, ranchmen and others, and many copies are distributed each year.

Air photos. - The entire State has aerial photographic coverage, but because of the cost of such photos, it has been impossible to purchase more than a fraction of all the available ones. It is hoped that by adding to the air-photo library from time to time, it will eventually be possible to obtain complete coverage. These photographs are very useful to anyone seeking information on surface features, or the geology, of specific areas.

PUBLICATIONS, MAPS AND REPORTS

Geological examinations have little value unless the accumulated information is made available to the public. Every effort has been made to publish printed reports on the results of projects of any magnitude. About 400 copies of each publication are deposited in libraries in the United States and foreign countries. Other copies are distributed to individuals, corporations, agencies, and others on request.

Along with increased activity in petroleum exploration in Wyoming and with the intensive prospecting for uranium, there has been an increased demand for our publications. Many of the earlier ones are now out of print and not available for distribution.

Printed documents. - The following documents were published by the Geological Survey of Wyoming during 1955-1956:

"Uranium-bearing waters in the Crow Creek and Muskrat Creek areas, Fremont County, Wyoming", Report of Investigations No. 5, 1956

"The Goose Egg formation (Permo-Triassic) of eastern Wyoming", Report of Investigations No. 6, 1956

"Gallatinospongia, a new siliceous sponge from the Upper Cambrian of Wyoming", Reprint No. 16, 1955

"Age of the Amsden formation, Cherry Creek, Wind River Mountains, Wyoming", Reprint No. 15, 1955

"Upper Cambrian trilobites from western Wyoming", Reprint No. 17, 1956

U. S. Geological Survey cooperative publications. - Since the beginning of cooperative work with the Fuels Branch of the U. S. Geological Survey, 35 maps and charts pertaining to the geology of Wyoming have been printed. Those issued during the period 1955-56 are:

Geologic map of the Du Noir area, Fremont County, Wyoming: U.S.G.S. Oil and Gas Investigations Map OM 166, 1955

Geology of the Shotgun Butte area, Fremont County, Wyoming: U.S.G.S. Oil and Gas Investigations Map OM 172, 1955

Map of Wyoming showing test wells for oil and gas, anticlinal axes, oil and gas fields, pipelines, unit areas, and land district boundaries: U.S.G.S. Oil and Gas Investigations Map OM 175, 1955

Stratigraphy of Upper Cretaceous and Lower Tertiary rocks of the Shotgun Butte area, Fremont County, Wyoming: U.S.G.S. Oil and Gas Investigations Chart OC 56, 1956

Geologic map of eastern Beaver Divide-Gas Hills area, Fremont and Natrona Counties, Wyoming: U.S.G.S. Oil and Gas Investigations Map OM 180, 1956

Geology of Sheldon-Little Dome area, Fremont County, Wyoming: U.S.G.S. Oil and Gas Investigations Map OM 181, 1956

Geology of the Crazy Woman Creek area, Johnson County, Wyoming: U.S.G.S. Bulletin 1027-B, 1956

Geological map of Wyoming. - The colored geological map of Wyoming was issued during 1955. Preparation of this map was begun in 1947 by the U. S. Geological Survey in cooperation with the Geological Survey of Wyoming and the Department of Geology, University of Wyoming. The completion of the map fills a long-felt need. The State Geological Survey has issued an index to this map which shows by township and range the authors and sources of the 207 maps used to compile the geology of the State.

Manuscripts being edited. - Three manuscripts which will constitute bulletins of the Geological Survey of Wyoming are now being edited and publication is anticipated early in 1957. These are:

"Stratigraphy of the Sundance, Nugget, and Jelm formations in the Laramie Basin, Wyoming."

"Structure and petrology of the Northern Big Horn Mountains, Wyoming."

"Stratigraphy of the Frontier formation, Powder River Basin, Wyoming."

County map series. - Although the Geological Survey prepared geological maps of 16 Wyoming counties long ago, they were never printed. Blueprint copies of the maps have been available to the public. A new revised series is being prepared in cooperation with the U. S. Geological Survey, and maps covering Albany, Carbon and Natrona counties have already been issued. The demand for these maps has been so great that all will have to be reprinted within the next few months. The fourth map in the series, covering Teton County, will be ready for printing early in 1957.

Unpublished thesis maps. - Unpublished maps and charts from 159 theses prepared by graduate students at the University of Wyoming are made available to the public through the sale of black line prints. These large scale maps have been in great demand by oil companies, uranium prospectors and others, and thousands have been distributed. During the biennium, 17 graduate students completed theses and the resulting maps and charts are being distributed to the public on demand.

Unpublished mineral reports. - When warranted, formal reports or memoranda based on field examinations of individual mineral deposits are placed on open file for public inspection. Most of these are not of sufficient scope to warrant publication, but the information contained in them is of great value. Photocopies are available to interested persons. During the biennium, a number of such reports were added to the files.

U. S. Geological Survey open file reports. - In order to make geological information available as early as possible, the U. S. Geological Survey has made the Geological Survey of Wyoming a repository for unpublished reports pertinent to Wyoming or adjacent states.

TECHNICAL MEETINGS

In order to keep abreast of new geological or technological developments, the staff has participated in or attended numerous technical meetings. During the biennium, the State Geologist served as Vice President of the American Association of Petroleum Geologists; as a member of the American Commission on Stratigraphic Nomenclature; and as a member of the Press Relations Committee of the Rocky Mountain Oil and Gas Association. The Assistant State Geologist served as a member of the Governor's Mineral Advisory Committee.

The following regional or national meetings were attended either by the State Geologist or the Assistant State Geologist:

National Western Mining Congress, Denver, 1955, 1956
Wyoming Geological Association Field Conferences, 1955, 1956
American Association of Petroleum Geologists, New York, 1955,
Chicago, 1956
Rocky Mountain Section, A.A.P.G., Denver, 1956
Cordilleran Section, Geological Society of America, Reno, 1956
Rocky Mountain Section, Geological Society of America, Laramie, 1955
Uranium Ore Producers Assn. Mining Exposition, Grand Junction,
Colorado, 1956
Second Annual Industrial Development Workshop, Wyo. Nat. Res.
Board, Casper, 1956

At the last named meeting, Mr. Wilson presented a paper titled "Mines and Mineral deposits of Wyoming". He also prepared a paper titled "Uranium deposits in southwestern Wyoming and northern Utah" which was published in the Guidebook of the Wyoming Geological Association, Green River Basin Field Conference, 1955.

Respectfully submitted,

Horace D. Thomas

Horace D. Thomas
State Geologist