

## ACCOMPLISHMENTS OF THE OKLAHOMA GEOLOGICAL SURVEY DURING THE PAST YEAR

### *C. L. COOPER, OKLAHOMA GEOLOGICAL SURVEY*

THERE HAS been a great increase in the amount of material on Oklahoma geology made available through the publications of the Oklahoma Geological Survey the past four years. The publications issued during the past year, for the most part, are on the oil and gas geology of the State. These reports are published as separate pamphlets on a county or group of counties. In addition to the reports on oil and gas there have been issued four bulletins, three circulars, three mimeographed reports, a catalog of high school rock and mineral specimens, and a pamphlet setting forth the available resources and the amount of mineral production of the State. In all there are thirty-one titles or reports. The total number of pages in these thirty-one publications is 1,521, in 74,000 copies, or a total of 3,106,200 printed pages. These reports contain 164 maps and figures.

The following maps not included with reports have been issued: oil and gas map of Oklahoma, 2,000; Carter County geologic, 200; and a large number of county base maps. There is in press at the present time, four topographic maps of the lead and zinc district of Ottawa County, on a scale of 1 inch = 1 mile.

There are three publications now in press: Bulletins 14 and 46, and Circular 18, which will bring the grand total of printed pages for the year to nearly 4,000,000. A table of publications giving number, title, author, and other data, is included.

In addition to publications of the Survey, the gospel of Oklahoma geology has been very ably presented by Doctor Gould, director of the Oklahoma Survey. Since the first of the year, or in a little over 10 months, Doctor Gould has given over forty-two talks on the different phases of Oklahoma geology. Eight of these addresses have been given before meetings of geologists. Various unsolved problems of Oklahoma geology and their solution has been the principal topic of these talks. Sixteen of the talks have been over the radio at the University of Oklahoma's broadcasting station WNAD, and the number of people reached in this way is no doubt tremendous. The radio papers were on Oklahoma's undeveloped resources and each one set forth very clearly the opportunity in this young State for development along these lines. The remainder of the talks have been given before various groups including civic clubs, geology classes, schools, and the like.

The Oklahoma Survey during the past year sponsored two meetings of geologists, one in the field and the other in the offices of the Survey at Norman.

The first conference was the twelfth field conference sponsored by our department and was held February 18-23, 1928, in the McAlester-Andlers-Atoka-Bromide-Ada area. This was the largest conference yet held by the Survey, there being eighty geologists present from Oklahoma, Texas, and Louisiana. This was the third Ada conference and the members of the party were tendered a banquet on the evening of February 22 by the civic clubs of Ada.

The second conference and one of the most important held in years, was on May 19 at Norman. Forty-four geologists from the states of Iowa, Nebraska, Missouri, Kansas, Arkansas, Texas, and Oklahoma were present. The State Geologists of these states were either present or represented. The meeting was organized at 9:30 o'clock a.m. and Raymond C. Moore, State Geologist of Kansas, was elected chairman. The problem considered at that time was the formulation of plans to attack the problem of the correlation of the Pennsylvanian formations throughout the entire Mid-Continent area. Doctor Moore gave a statement of the problem as he saw it, and discussion on ways and means continued until the lunch hour. The meeting again convened in the afternoon and continued until about 5:00 o'clock. During the afternoon session Doctor Moore was chosen to head a general committee for furthering the work on this big problem. This work is now going forward, Texas being particularly active.

The complete results of this meeting will not be known for a number of years, since the solution of this problem is a tremendous undertaking. It will require a large number of field men working together with the best paleontologists in the country, all working for a long time in order to bring order out of the chaos which now exists in this part of the geologic section. In Oklahoma alone we have four sets of names applied to the Pennsylvanian rocks in the State, and Oklahoma is only a small part of the problem.

During the past summer there were eight field parties working in the State, either wholly or in part maintained by the Survey.

Doctors E. O. Ulrich of the U. S. Geological Survey, and C. E. Decker, working for the Oklahoma Survey, assisted by Rex McGehee and Norval Ballard were working on the lower Paleozoic formations of the Arbuckle Mountains, the Reagan, Arbuckle, and Simpson formations. A complete revision of the nomenclature and correlation of these formations will be the result of this work. The findings are now being gotten into shape for a report which will probably be published early the coming summer.

The Oklahoma Survey in another piece of co-operative work with the U. S. Geological Survey sent Doctor W. T. Thom, Professor of Geology at Princeton University, into the coal fields of east-central Oklahoma. The U. S. Army took the first aero-pictures to be used in connection with Oklahoma geology, as a part of this work. The report of this area will also be available this summer.

Another party, working on Oklahoma coals, was that sponsored by the Survey in co-operation with the University and the State Mine Inspector. Doctor Joe Moose of the University collected a large number of samples of coal which are being analyzed this winter to determine the heat value of the coal. The analyses are being worked out along a new line and will be of great value to purchasers of this fuel, since the analyses bring out the exact amount of heating value contained in any particular coal.

G. G. Suffel of California worked during the summer on the dolomites of western Oklahoma.

A. J. Freie of the University of Iowa has completed his field work on the sedimentation in the Anadarko basin and results of this work are now being worked out in the laboratory of the University of Iowa under the direction of A. C. Trowbridge, a noted authority on sedimentation.

Dr. F. A. Melton of the University of Oklahoma spent several weeks in

the area of the Ouachita and Arbuckle mountains studying jointing in order to determine the relative ages of these two uplifts. Doctor Melton has collected some very important data which are now being put into shape for printing.

Mr. Paul G. Shelly, graduate student in petroleum engineering, collected a large number of asphalts which are now being analyzed with special reference to their weathering quality. The statement has been made by Herbert Abraham, an authority on asphalt, that Oklahoma asphalts are more resistant to weathering than those from other parts of the country. It will be the object of this research to learn more about this property of Oklahoma asphalts, and in addition to determine if possible the adaptability of these asphalts for paving, roofing, etc.

The detailed geology of the Criner Hills has been worked out by J. A. Stone of the Survey.

Doctor Gould is director of the research of the American Petroleum Institute on deep well temperatures. This work is being done by John A. McCutcheon, a graduate of the University of Oklahoma in engineering geology.

The Survey is headquarters for Major D. W. Griffin, of the topographic branch of the U S. Geological Survey during their work in Oklahoma.

The objects and duties of the Survey as provided by law are to carry on "studies of the geological formations of the State with special reference to its mineral deposits" and to prepare and publish "bulletins and reports accompanied by the necessary illustrations and maps containing both general and detailed descriptions of the geological structure and mineral resources of the State." Also "the consideration of such other scientific and economic questions as \* \* \* shall be deemed of value to the people." It has been the aim of every member of the staff to carry out the above law insofar as we have been able to so do with the amount of appropriations made available for this work. There has been more work accomplished during the past year than at any other time in the history of the Survey.

## PUBLICATIONS OF THE OKLAHOMA GEOLOGICAL SURVEY ISSUED AND IN PREPARATION DURING THE PAST YEAR

Bulletin	Author	Pages	Maps	Copies	Total Pages	
12	Arbuckle and Wichita Mountains	Taff	95	2	2,500	237,500
40-Q	Digest of Oil Fields	B-M Bullard	188	1	2,500	470,000
10-R	Atoka, Pushmataha, Bryan and Choctaw	Hones	32	3	1,500	48,000
10-S	Pontotoc	Conkling	27	6	1,500	40,500
10-T	Osage	Beckwith	62	21	1,500	93,000
40-U	Rogers	Woodruff and Cooper	24	5	1,500	36,000
40-V	Washington	Carpenter	20	9	1,500	30,000
40-W	McIntosh	R. W. Clark	14	5	1,500	20,000
40-X	Payne	Koschmann	13	5	1,500	19,000
40-Y	Harmon, Tillman, Jackson, Greer	Clifton	24	2	1,500	36,000
40-Z	Carter	Tomlinson	78	18	1,500	117,000
40-AA	Oklahoma Petroleum	Bowles	25	10	1,500	37,000
40-BB	Seminole	Levorsen	70	15	2,500	175,000
40-CC	Pawnee	Greene	28	11	1,500	42,000
40-DD	Comanche	Gouin	25	3	1,500	37,000
40-EE	Nowata-Craig	Bloesch	30	3	1,500	45,000
40-FF	Muskogee	Soyster-Taylor	28	7	1,500	42,000
40-GG	Logan	Bale	18	4	1,500	24,000
40-JJ	Coal and Pittsburg	Clawson	16	4	1,500	24,000
40 Vol. 1	B. D, G, J, P, Q, AA		287	7	2,500	717,500
44	Carboniferous Rocks in Ouachitas	Miser-Hones	32	2	2,500	80,000
45	Boulders in Caney Shale	Ulrich	48	3	2,500	120,000
47	Cretaceous of Western Oklahoma	Bullard	116	12	2,500	290,000
<hr/>						
Circular						
15	Physical Characteristics of Arbuckle limestone	Decker-Merritt	56	2	2,500	140,000
16	Oklahoma, the Geologist's Laboratory	Gould	16	2	2,500	40,000
17	Road Materials of Western Oklahoma	Evans	19	2	2,500	47,500
<hr/>						
Pamphlets	\$500,000,000	Gould	10		25,000	250,000
	Catalog of High School Minerals	Plaster	32		1,500	48,000
<hr/>						
Mimeograph reports	Elevations in Western Oklahoma	E. E. Harris	16		500	8,000
	Manufacturers' Directory	Stone	45		500	22,500
	Proceedings of Pennsylvania Conference		27		100	2,700
	Totals		1,521	164	74,100	3,106,200
	Average (31 publications)		50+	5+	2,395	

## PUBLICATIONS IN PRESS

B-14	Analyses Oklahoma rocks					
B-46	and minerals	Shead	200		1,500	300,000
C-18	Geology of Ardmore Basin	Tomlinson	100		2,500	250,000
	Mississippian Faunal Chart	Roth	16		2,500	40,000
			<hr/>		<hr/>	<hr/>
			316		6,500	590,000

## IN PREPARATION

Lead and Zinc in Oklahoma	S. Weidman
Structure of the Ouachita Mountains	H. D. Miser
Lower Paleozoic Rocks of the Arbuckle Mountains	E. O. Ulrich-C. E. Decker
Joint Trends in the Ouachita Mountains	F. A. Melton
Oiled Roads	N. A. Wolford
Coal fields—eastern Oklahoma	W. T. Thom, Jr.
Dolomite in Oklahoma	G. G. Suffel
Coal Analyses	Joe Moose
Anadarko Basin	A. J. Freie
Geology of Criner Hills	J. A. Stone
Chonetes	Robert Dott
Ostracods	Robert Roth
Faunal Chart	Robert Roth

## CHAPTERS OF BULLETIN 40 IN PREPARATION

County	Author	County	Author
Kiowa and Washita	R. W. Sawyer	Oklahoma	John R. Bunn
Lincoln	Dollie Radler	Cherokee and Adair	Ira Cram
Pottawatomie	E. T. Weirich	Ottawa, Mayes, Delaware	George Buchanan
Love and Marshall	J. S. Redfield-	Okfuskee and Hughes	Philip Boyle
	F. M. Bullard	Tulsa	Frank Greene, <i>et al</i>
Haskell, Latimer, Sequoyah,		Dewey, Custer, Roger Mills,	
Leflore	J. A. Stone	Blaine	J. A. Stone-R. L. Clifton
Jefferson	John R. Bunn	Cotton	Irving Perrine