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Division of Geological Survey
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William A. Egan - Governor Charles F. Herbert - Commissioner

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FIELD CAMP ACCIDENT

The accidental death of the Division's Acting Chief Geologist, Dr. Crawford E. (Jim) Fritts, on the Fourth of July, was a severe shock to his fellow employees and to all who knew him. Jim died as a result of a canoe accident which occurred while he and other Division personnel were engaged in mapping the geology along the Kogoluktuk River in the Brooks Range.

Jim was born in 1927, at Hudson, N.Y., where he also attended high school. He received a B.S. degree in geology from Union College at Schenectady, N.Y. in 1948. He was awarded a B.S. degree in geological engineering in 1950, and an M.S. in geology in 1952, both from Michigan Technological University, Houghton, Michigan. He attended the University of Michigan at Ann Arbor and taught geology courses from 1952 through 1956. He received his PhD. in geology from the University of Michigan in 1962. Jim worked three summers with the Newfoundland Geological Survey during the period he did graduate study. He became well-experienced in geologic mapping and special studies during his employment with the U. S. Geological Survey from 1956 to 1968. He joined the Alaska Division of Geological Survey in 1968, and has made Fairbanks his home. His four seasons spent mapping the geology in the Brooks Range are a major contribution to the understanding of the geology of that region. His compilation and publication of a six-volume Bibliography of Alaskan Geology was welcomed by those concerned with the geology and mineral industry of Alaska.

His many activities included the Fairbanks Light Opera Theatre, the University Chorale, SPEBSQSA, Inc., the University Presbyterian Church choir, the Alaska Geological Society, the Geological Society of America, Arctic Institute of North America, and Sigma Xi. Dr. Fritts is survived by his wife Barbara, and three children, Ellen, Andrew, and Evelyn. His parents live in Hudson, N.Y.

NEW ALASKA LEGISLATION

An Act

Relating to geological and geophysical surveys; and providing for an effective date.

Be it enacted by the Legislature of the State of Alaska:

Section 1. AS 41 is amended by adding a new chapter to read:

CHAPTER 8. GEOLOGICAL AND GEOPHYSICAL SURVEYS.

Sec. 41.08.010. DIVISION OF GEOLOGICAL AND GEOPHYSICAL SURVEYS. There is established in the Department of Natural Resources a division of geological and geophysical surveys under the direction of the state geologist.

Sec. 41.08.015. STATE GEOLOGIST. The commissioner of natural resources shall appoint the state geologist, who must be qualified by education and experience to direct the activities of the division.

Sec. 41.08.020. POWERS AND DUTIES. The state geologist shall conduct geological and geophysical surveys to determine the potential of Alaskan lands for production of metals, minerals and fuels; the locations and supplies of ground waters and construction materials; the potential geologic hazards to buildings, roads, bridges and other installations and structures; and shall advance knowledge of the geology of Alaska. With the approval of the commissioner, the state geologist may acquire, by gift or purchase, geological and geophysical reports, surveys and similar information.

Sec. 41.08.030. PRINTING AND DISTRIBUTION OF REPORTS. The state geologist shall print and publish an annual report and such other special and topical reports and maps as may be desirable for the benefit of the state, including the printing or reprinting of reports and maps made by other persons or agencies, where authorization to do so is obtained. Reports and maps may be sold and all money received from such sales shall be paid into the general fund.

Sec. 41.08.040. COOPERATION WITH OTHER AGENCIES. The state geologist, with the consent of the commissioner, may enter into cooperative agreements with federal, state, and local governmental agencies to perform geological and geophysical surveys, studies, investigations, and services.

Section 2. AS 41.07 is repealed.

Section 3. This Act takes effect July 1, 1972.

NEW REPORTS ON ALASKAN GEOLOGY

The Bibliography and Index of Geology (v. 36, no. 2, Feb. 1972) published by the Geological Society of America contains the following Alaskan entries:

Berg, Eduard; Lutschak, William, 1971, Tilt Field and Tilt Propagation Velocity Associated with Earthquakes [abstr.]: EOS (Amer. Geophys. Union, Trans.), Vol. 52, No. 11, p. 864

NEW REPORTS (Continued)

Bingham, D. K., 1971, Paleosecular variation of the geomagnetic field in Alaska [abstr.]: Diss. Abstr. Int., Vol. 32, No. 6, p. 3445B

Bingham, D. K.; Stone, D. B., 1971, Paleosecular Variation of the Geomagnetic Field in the Aleutian Islands, Alaska [abstr.]: EOS (Amer. Geophys. Union, Trans.), Vol. 52, No. 11, p. 822

Brobst, D. A.; Pinckney, D. M.; Sainsbury, C. L., 1971, Geology and geochemistry of the Sinuk River barite deposit, Seward Peninsula, Alaska: U. S. Geol. Surv., Prof. Pap., No. 750-D, p. D1-D8, Sketch map

Csejtey, Bela, Jr.; Patton, W. W., Jr.; Miller, T. P., 1971, Cretaceous plutonic rocks of St. Lawrence Island, Alaska; A preliminary report: U. S. Geol. Surv., Prof. Pap., No. 750-D, p. D68-D76, illus. (incl. geol. sketch maps)

Howitt, Frank, 1971, Permafrost geology at Prudhoe Bay: World Pet., Vol. 42, No. 8, p. 28-32, 37-38, illus. (incl. sketch maps)

Kaufman, M. A., 1971, Nonferrous Metal Exploration in Alaska [abstr.]: Min. Eng., Vol. 23, No. 12, p. 71

Kienle, Juergen; Forbes, R. B.; Harlow, D. H., 1971, Recent microearthquake swarm activity at Augustine Volcano, Alaska [abstr.]: EOS (Amer. Geophys. Union, Trans.), Vol. 52, No. 11, p. 925

Lowe, P. C., 1971, Wrangell Volcanics, Alaska; Preliminary Geological Description [abstr.]: EOS (Amer. Geophys. Union, Trans.), Vol. 52, No. 11, p. 925

Major, M. W.; Butler, David; Tocher, Don, 1971, Episodic Strain in the Central Aleutians [abstr.]: EOS (Amer. Geophys. Union, Trans.), Vol. 52, No. 11, p. 868

Marcher, M. V., 1971, Raised beach deposits and their ground-water potential in the southern part of the Metlakatla Peninsula, Annette Island, Alaska: U. S. Geol. Surv., Prof. Pap., No. 750-D, p. D202-D205, illus. (incl. sketch map *See also bedrock survey)*

Marcher, M. V., 1971, Reconnaissance of ground-water supplies from bedrock in the Metlakatla Peninsula, Annette Island, Alaska: U. S. Geol. Surv., Prof. Pap., No. 750-D, p. D198-D201, illus. (incl. sketch map) *See also Beach deposit survey*

Marcus, M. G., 1971, The High Mountain Environment Project, St. Elias Mountains, Yukon and Alaska, 1967-1971: Arct. Inst. North Am., Res. Pap., No. 61, 76 p., illus. (incl. sketch maps). *Includes sections on periglacial geomorphology and hydrology and glaciology*

Miller, M. M., 1971, Glaciological and Geological Investigations on the 1965 Mount Kennedy, Yukon, Expedition, In National Geographic Society Research Reports, 1965, p. 161-179, illus. (incl. sketch maps): Natl. Geogr. Soc., Washington, D. C.

NEW REPORTS (Continued)

Miller, M. M., 1971, The Alaskan Glacier Commemorative Project, Phase II, In National Geographic Society Research Reports, 1965, p. 181-194, illus. (incl. sketch maps): Natl. Geogr. Soc., Washington, D. C.

Oehser, P. H., 1971, National Geographic Society, Research Reports, 1965: Nat'l Geogr. Soc., 305 p., illus. (incl. maps), Washington, D. C. *Compilation of abstracts and reviews of research and exploration authorized under grants from the National Geographic Society during that year (papers within the scope of this Bibliography cited under the separate authors)*

Orphal, D. L., 1971, Seismic motion recorded from the Milrow detonation in the distance range 7 to 377 km: Seismol. Soc. Am., Bull., Vol. 61, No. 5, p. 1467-1471, illus. (incl. sketch map)

Stevens, D. L., 1971, Geology and Geochemistry of the Denali Prospect, Alaska [abstr.] Min. Eng., Vol. 23, No. 12, p. 71

Stone, D. B.; Amna, Kei; Trible, Marla, 1971, Magnetic Anomalies in the Valley of 10,000 Smokes [abstr.]: EOS (Amer. Geophys. Union, Trans.), Vol. 52, No. 11, p. 925

Syed, A. A.; Nuttli, C. W., 1971, A method of correcting P-wave magnitudes for the effect of earthquake focal mechanism: Seismol. Soc. Am. Bull., Vol. 61, No. 6, p. 1811-1826, illus. (incl. sketch map)

University of Alaska, Geophysical Institute, [1971], Geophysical Institute, University of Alaska: annual report, 1970-1971: Alaska, Univ., Geophys. Inst., 152 p., illus. (incl. sketch map), College

Walker, H. J., 1970, Some aspects of erosion and sedimentation in an arctic delta during breakup [with discussion], In Hydrology of deltas--Hydrologie des deltas, Vol. 1, Int. Assoc. Sci. Hydrol.--Unesco, Stud. Rep. Hydrol., No. 9, p. 209-219 (incl. Fr. Sum.), illus. (incl. sketch maps)

Williams, J. A., others, [1970], State of Alaska, Department of Natural Resources, Division of Mines and Geology; report for the year 1969: Alaska, Dep. Nat. Resour., Div. Min. Geol., 65 p., illus. (incl. map), College

Yeend, Warren, 1971, Glaciation of the Ray Mountains, central Alaska: U. S. Geol. Surv. Prof. Pap., No. 750-D, p. D122-D126, illus. (incl. sketch maps)

1972 AEROMAG SURVEY

The 1972 Aeromag Survey flying is 30% completed. Continuous good weather has resulted in near-record production of survey line mileage. The survey aircraft are now flying north-south flight lines in the Eagle quad and the Talkeetna Mountains quad.

We also are including in this issue entries for 60 of 202 aeromagnetic maps recently published by the State. The maps included here are products of the Seward Peninsula aeromagnetic mapping project undertaken by the Alaska Geological Survey during the summer of 1971. The maps listed below are 15- by 30-minute quadrangles that cover parts of the Bendeleben, Candle, Nome, Norton Bay, Selawik, Solomon and Teller 1- by 3-degree quadrangles. These maps were released for sale February 29, 1972. Similar maps resulting from the East Alaska Range aeromagnetic mapping project were listed in previous issues of this Bulletin. Maps resulting from an aeromagnetic mapping project in the Goodnews area will be listed in the next issue of the Bulletin. The Bendeleben, Candle, Nome, Norton Bay, Selawik, Solomon and Teller maps are as follows:

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (A-1) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (A-2) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (A-3) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (A-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (A-5) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (A-6) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (B-1) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (B-2) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (B-3) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (B-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (B-5) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [eastern] Bendeleben (B-6) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (C-1) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (C-2) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (C-3) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (C-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [eastern] Bendeleben (C-5) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (D-1) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (D-2) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (D-3) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Bendeleben (D-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [eastern] Bendeleben (D-5) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Candle (A-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Candle (A-5) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Candle (A-6) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

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Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Candle (D-6) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [northern] Nome (D-1) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [northern and central] Nome (D-2) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [northern and central] Nome (D-3) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [northeastern] Nome (D-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [northern, central and southeastern] Norton Bay (D-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [northern and west-central] Norton Bay (D-5) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Norton Bay (D-6) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Selawik (A-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

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Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [central] Solomon (B-2) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [north-central] Solomon (B-3) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [northwestern] Solomon (C-1) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

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Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, Solomon (D-1) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

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Alaska Geological Survey, 1972, Aeromagnetic survey, Seward Peninsula, [southeastern] Teller (A-4) quadrangle, Alaska: Alaska, Dept. Nat. Resources, Div. Geol. Survey, 1 aeromag. map (scale 1:63,360)

U. S. Geological Survey open-file reports concerning Alaskan geology are listed here in a form suitable for inclusion in the next volume of the Bibliography of Alaskan Geology. The numbers assigned to these reports are informal ones used by the Alaskan Mineral Resources Branch of the USGS at Menlo Park, California. New reports are as follows:

Clark, S. H. B., 1972, The Wolverine complex, a newly discovered layered ultramafic body in the western Chugach Mountains, Alaska: U. S. Geol. Survey, Alaskan open-file rept. 522, 10 p., 3 figs., 1 table

Foster, H. L.; Yount, M. E., 1972, Analyses of stream-sediment and rock samples from parts of the Eagle quadrangle, east-central Alaska: U. S. Geol. Survey, Alaskan open-file rept. 523, 11 p., 2 figs., 2 tables (comprising 91 p. computer printout)

Alaska Geological Survey reports may be purchased or inspected at:
Maintenance Building, Univ. Alaska, Box 80007, COLLEGE, Ak. 99701
323 East Fourth Avenue, ANCHORAGE, Ak. 99501
Room 509, Goldstein Building, Pouch M, JUNEAU, Ak. 99801
Room 312, 306 Main Street, Box 2438, KETCHIKAN, Ak. 99901

U. S. Geological Survey Alaskan open-file reports usually are available as follows:
Purchase: Ak. Min. Res. Branch, 345 Middlefield Road, MENLO PARK, Calif. 94025
Inspection: Room 108, Skyline Building, 508 Second Avenue, ANCHORAGE, Ak. 99501
Room 402, Brooks Building, Univ. Alaska, COLLEGE, Ak. 99701
Room 441, Federal Building, JUNEAU, Ak. 99801
Alaska Geological Survey offices listed above

METAL MARKET

Metals	July 3, 1972	Month Ago	Year Ago
Antimony ore, stu equivalent European ore	$7.03-8.16	$7.03-8.16	$8.64-10.00
Barite (drilling mud grade per ton	$18-22	$18-22	$17-20
Beryllium powder, 98%, per lb.	$54-66	$54-66	$54-66
Chrome ore per long ton	$24-27	$25-27	$25-27
Copper per lb.	52.57¢	52.57¢	52.8¢
Gold per oz.	$64.17	$57.66	$40.93
Lead per lb.	15.5¢	15.6¢	14.0¢
Mercury per 76# flask	$197	$190	$303-312
Molybdenum conc. per lb.	$1.72	$1.72	$1.72
Nickel per lb.	$1.33	$1.33	$1.33
Platinum per oz.	$137.25	$106.94	$120-125
Silver, New York, per oz.	156.4¢	157.18¢	157.7¢
Tin per lb.	174.6¢	176.0¢	167.0¢
Titanium ore per ton (Ilmenite)	$30-35	$30-35	$30-35
Tungsten per unit	$55.00	$55.00	$55.00
Zinc per lb.	18.0¢	18.0¢	16.0¢

State of Alaska
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