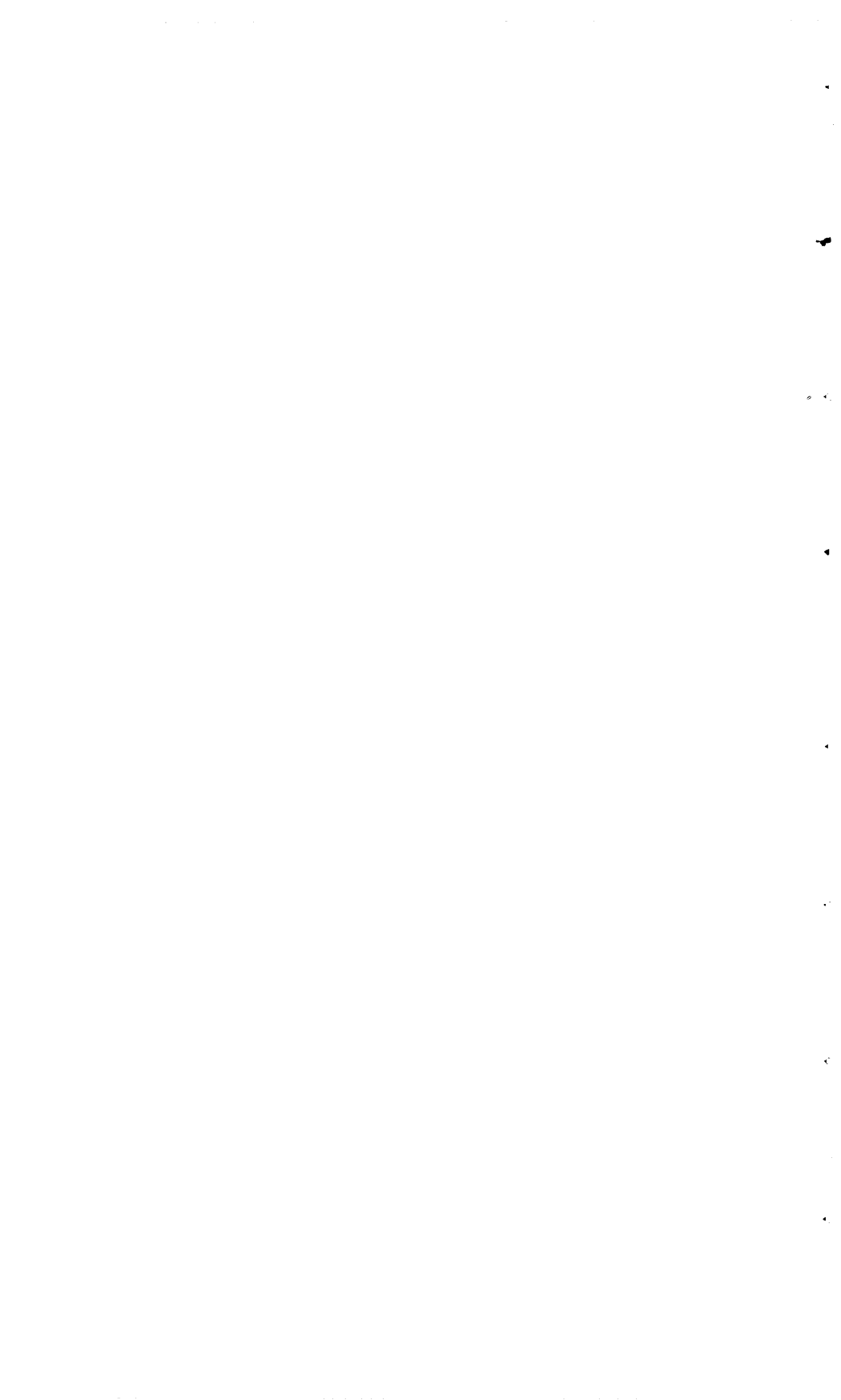


# Annotated Bibliography of Alaskan Paleozoic Paleontology

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# A CONTRIBUTION TO GENERAL GEOLOGY

## ANNOTATED BIBLIOGRAPHY OF ALASKAN PALEOZOIC PALEONTOLOGY

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### ABSTRACT

Most papers published before June 1954 that deal with Alaskan Paleozoic paleontology are concerned primarily with stratigraphy; only a few papers are concerned primarily with taxonomy. The Upper Silurian brachiopod fauna from southeastern Alaska is the best documented. Ordovician cephalopods from Seward Peninsula, Ordovician and Silurian graptolites, Cambrian and Ordovician brachiopods and trilobites from the Eagle-Circle district, Devonian fossils from Porcupine valley, and Mississippian lithostrotionid corals have also been described. The papers are cross indexed.

### INTRODUCTION

This bibliography presents a comprehensive compilation of paleontologic information that was accumulated during the preparation of the new geologic map of Alaska.

In the past 55 years many paleontologists have studied Paleozoic fossils from Alaska, but most of the work has been done by G. H. Girty, E. M. Kindle, Edwin Kirk, and Charles Schuchert. Nearly everything that was published on the faunas or correlation of Carboniferous and Permian rocks from 1900 to 1945 was the direct result of Girty's efforts. A comparable statement can be made of Edwin Kirk's work on faunas from the early Paleozoic systems.

An attempt has been made to include not only taxonomic publications and papers that contain extensive faunal lists and correlations, but also all published work that indicates fossils were studied or age determinations were made on the basis of examination of fossil material. For example, if the statement "Middle Devonian corals were identified by Edwin Kirk" is made, the paper has been cited; however, if the reference is only to "rocks of Middle Devonian age," the paper has not been cited.

Few taxonomic paleontologic papers, especially dealing with upper Paleozoic faunas, have been published. Perhaps the best known is the Upper Silurian brachiopod fauna (Kirk, 1922, 1926, and 1927; Kirk and Amsden, 1952). However, even for this fauna much descriptive work remains to be done. A few Cambrian brachiopods and trilobites have been described (Cooper, 1936; Ulrich and

Cooper, 1938; Kobayashi, 1935 and 1936a). Lower Ordovician cephalopods from Seward Peninsula have been described and discussed (Flower, 1941a, 1941b, and 1946; Miller and Kummel, 1945). Several Ordovician and Silurian graptolite species were described by Ruedemann (1947). Devonian coral species were first described by Meek (1867), and two of these were redescribed by S. Smith (1945). A few Mississippian lithostrotionid coral species were described by Hayasaka (1936), and a new genus was described by Harker and McLaren (1952).

Taxonomic papers are indicated by asterisks. Particularly important summaries and papers that present many faunal lists are indicated by daggers. Editorial comments are enclosed in brackets. Special effort has been made to include all papers published before January 1954.

## BIBLIOGRAPHY

\*Bassler, R. S., 1937, The Paleozoic rugose coral family Paleocyclusidae: Jour. Paleontology, v. 11, no. 3, p. 189-201, pls. 30-32.

Page 190.—Short description and reproduction of original illustrations of *Paleocyclus kirbyi* [see Meek, 1868].

\_\_\_\_\_, 1950, Faunal lists and descriptions of Paleozoic corals: Geol. Soc. America Mem. 44, 315 p., 20 pls.

Pages 20, 77, 167-168, and 220.—Lists coral faunas of Richmond age, of Silurian age from Seward Peninsula, of early Upper Devonian age from Porcupine River, and of early Carboniferous age [see S. Smith, 1945, and Hayasaka, 1936].

Bassler, R. S., and Moodey, M. W., 1943, Bibliographic and faunal index of Paleozoic pelmatozoan echinoderms: Geol. Soc. America Spec. Paper 45, 734 p.

Pages 17, 111, and 366.—Reference to *Clithrocrinus* Kirk from supposed lower Pennsylvanian rocks of southeastern Alaska. [see Kirk, 1937a and 1937b. Age of beds from which this crinoid came is doubtful.]

Bowsher, A. L., and Dutro, J. T., Jr., 1950, Stratigraphy and paleontology of the Mississippian rocks in the central part of the Brooks Range, Alaska [abs.]: Geol. Soc. America Bull., v. 61, no. 12, p. 1445.

Age and correlation of Mississippian rocks and faunas in northern Alaska. Overlying a lower Mississippian nonmarine formation is a shale that contains marine faunas resembling those of Kinderhook age; overlying the shale is the Lisburne limestone, which contains faunas ranging in age from Osage to late Mississippian.

Brooks, A. H., 1900a, A reconnaissance in the White and Tanana River basins, Alaska, in 1898: U. S. Geol. Survey, 20th Ann. Rept., pt. 7, p. 425-494.

Page 472.—One collection of fossils from Wellesley formation reputed by Charles Schuchert to be of Devonian or Carboniferous age; discussion of correlation included.

\_\_\_\_\_, 1900b, A reconnaissance from Pyramid Harbor to Eagle City, Alaska, including a description of the copper deposits of the upper White and Tanana Rivers: U. S. Geol. Survey, 21st Ann. Rept., pt. 2, p. 331-391.

Page 359.—Collection of fossils from Kleetsan Creek, upper White River basin, examined by Charles Schuchert; age designated as upper Carboniferous; forms listed are *Productus cora*, *Productus*, two undet. species, *Seminula* sp., *Stenopora* sp., and *Fusulina* (not *F. cylindrica*) [age now considered Permian]. Wellesley formation dated as Devonian or Carboniferous on basis of a few fossil collections; no fossil lists.

\_\_\_\_\_, 1902a, Preliminary report on the Ketchikan mining district, Alaska, with an introductory sketch of the geology of southeastern Alaska: U. S. Geol. Survey Prof. Paper 1, 120 p.

Pages 19-24.—Fossils from Drake Island, Glacier Bay, determined by Charles Schuchert to be of Late Silurian age; faunal list; a single coral from Dirt glacier moraine dated as Middle Devonian. Relationship of Paleozoic rocks in southeastern Alaska and British Columbia discussed.

Brooks, A. H., 1902b, Geological reconnaissances in southeastern Alaska: Geol. Soc. America Bull., v. 13, p. 253-266.

Upper Silurian and Middle Devonian fossils from Drake Island and Dirt glacier respectively (Glacier Bay area), reported by Charles Schuchert [same information given by Brooks, 1902a].

† \_\_\_\_\_ 1906, The geography and geology of Alaska, a summary of existing knowledge, with a section on climate, by Cleveland Abbe, Jr., and a topographic map and description thereof, by R. U. Goode: U. S. Geol. Survey Prof. Paper 45, 327 p.

*Pages 210-225.*—Stratigraphic summary of formations and provisional correlations. No fossil lists. [Most of this information has been superseded by later work.]

† \_\_\_\_\_ 1911, The Mount McKinley region, Alaska, with descriptions of the igneous rocks and of the Bonfield and Kantishna districts, by L. M. Prindle: U. S. Geol. Survey Prof. Paper 70, 234 p.

*Pages 66-84.*—Small Ordovician graptolite fauna from Tatina group listed; age determined by Charles Schuchert. Tonzona group assigned Silurian or Devonian age [no fossil evidence]. Several collections of late Middle or early Late Devonian age from a limestone that overlies, probably unconformably, the Tonzona group. [The Cantwell formation incorrectly assigned to Carboniferous(?).]

Brooks, A. H., and others, 1901, A reconnaissance of the Cape Nome and adjacent gold fields of Seward Peninsula, Alaska, in 1900: U. S. Geol. Survey Spec. Pub., 222 p.

*Page 31.*—Report by G. H. Girty on fragmentary fossils from gravels near Teller Mission, thought to have come from "Nome series;" age designated as "Lower Ordovician, suggesting an affinity with that of the Pogonip group of Nevada."

† Brooks, A. H., and Kindie, E. M., 1908, Paleozoic and associated rocks of the upper Yukon, Alaska: Geol. Soc. America Bull., v. 19, p. 255-314, 2 pls.

Describes stratigraphy, structure, and geologic history and gives lists of fossils from localities in the area extending from 141° to 152° W. longitude and from the Tanana River northward to about the 67th parallel, including regions drained by the Porcupine, Yukon, and Tanana Rivers. Compiles all information available before 1908. Calico Bluff and Nation River formations defined.

† Brown, J. S., 1924, The Nixon Fork country and silver-lead prospects near Ruby: U. S. Geol. Survey Bull. 783-D, p. 97-150.

*Pages 103-107 and 125.*—Fossils of Late Ordovician, Silurian, and possible Devonian age reported on by Edwin Kirk; faunal lists. G. H. Girty's identification of four Permian collections also listed; author states, "The fauna is obviously that which has been identified in Alaska as Permian (Artinskian) and which is best known from exposures on Kuiu Island and on Yukon River opposite the mouth of Nation River."

Bruet, E., 1945, L'Alaska: Payot, Paris, 451 p., 36 figs., 13 maps, and 14 photos.

*Pages 140-147.*—Summarizes Paleozoic stratigraphy and general distribution of systems in Alaska; general references made to fossils and faunas and their ages. [Information is about the same as that given by P. S. Smith, 1939.]

Buckland, W., 1839, Geology, in Richardson, J., and others, The Zoology of Captain Beechey's voyage, p. 157-180, illus. London.

*Pages 171-173.*—States that fossils from Cape Thomson [sic] and Cape Lisburne areas are indistinguishable from those of the Derbyshire limestone. Lists "producta Martini, other productae, lithostrotion, flustrae, and trilobites."

Buddington, A. F., 1923, Mineral deposits of the Wrangell district: U. S. Geol. Survey Bull. 739-B, p. 51-75.

*Pages 52-53.*—Refers to graptolitic beds near Wrangell [see Kirk 1918a] as of Silurian age or older. Limestone beds on Duncan Canal contain fossils identified as Middle Devonian by Edwin Kirk.

† Buddington, A. F. and Chapin, Theodore, 1929, Geology and mineral deposits of southeastern Alaska: U. S. Geol. Survey Bull. 800, 398 p.

*Pages 49 and 72-130.*—Extensive discussion of faunas and ages of Paleozoic rocks of southeastern Alaska. Lower and Middle Ordovician faunas of Prince of Wales, Kuiu, and neighboring islands listed. Lower, Middle, and Upper Silurian faunas, widely distributed throughout Alexander Archipelago and the Glacier Bay vicinity, tabulated. Middle and Upper Devonian faunas from Prince of Wales and adjacent islands, Kupreanof Island, and Chichagof Island discussed and listed. Most Devonian and Silurian determinations made by Edwin Kirk; Ordovician and Lower Silurian graptolite faunas studied by Rudolf Ruedemann. Reports by G. H. Girty on the Mississippian rocks at Soda Bay, Trocadero Bay, Klawak Inlet, Kuiu Island, and elsewhere, quoted; one collection from Soda Bay provisionally assigned to the Pennsylvanian; many collections from Kuiu, Keku, Kupreanof, Admiralty, and Suemez Islands tentatively correlated with the Artinskian of the Russian Permian, although some may be as old as late Pennsylvanian.

Burchard, E. F., 1913, Marble resources of Ketchikan and Wrangell districts: U. S. Geol. Survey Bull. 542-B, p. 52-77.

*Pages 60 and 66.*—Limestone beds on Marble and Heceta Islands contain fossils of possible Devonian age, according to Edwin Kirk [these fossils now considered Silurian; see Buddington and Chapin, 1929, p. 94].

Cairnes, D. D., 1913, Geological section along the Yukon-Alaska boundary between Yukon and Porcupine Rivers [abs.]: Geol. Soc. America Bull., v. 24, no. 4, p. 678-679.

Mentions graptolite collection [no age given] and first Cambrian fossils found in this region [see Cairnes, 1914b].

\_\_\_\_ 1914a, Geological section along the Yukon-Alaska boundary line between Yukon and Porcupine Rivers: Geol. Soc. America Bull., v. 25, p. 179-204, pls. 4-8.

Discussion of stratigraphy and paleontology of the Paleozoic section in the boundary region. [Cairnes, 1914b, modified information given in this paper and presented more paleontologic data.]

† \_\_\_\_ 1914b, The Yukon-Alaska International Boundary, between Porcupine and Yukon Rivers: Canada Geol. Survey Mem. 67, 161 p., 16 pls., 2 figs, 2 maps.

Discusses ages and correlations of Paleozoic faunas collected in the period 1911-12 on Yukon-Alaska boundary survey. *Pages 63-75.*—Cambrian, Ordovician, and Silurian faunal lists. *Pages 77-81.*—Devonian faunal lists, prepared by E. M. Kindle. *Pages 94-103.*—Carboniferous faunal lists,

prepared by G. H. Girty. Pre-Devonian fossils studied by E. M. Kindle, Lawrence Lambe, L. D. Burling, R. Ruedemann, and W. A. Parks. [see Mertie, 1930 and 1933, for revision of stratigraphic significance of these collections.]

**Capps, S. R.**, 1916, The Chisana-White River district, Alaska: U. S. Geol. Survey Bull. 630, 130 p.

*Pages 32, 33, and 40-45.*—Edwin Kirk reports probable Middle Devonian age for single collection from Bonanza Creek. Detailed lists, prepared by G. H. Girty, of fossils from upper Carboniferous rocks [see Moffit, 1938, for later modifications].

\_\_\_\_\_, 1933, The eastern portion of Mount McKinley National Park: U. S. Geol. Survey Bull. 836-D, p. 219-300.

*Page 255.*—Discusses age of Middle Devonian rocks from which two small collections of fossils have been made. No fossil lists.

\_\_\_\_\_, 1940, Geology of the Alaska Railroad region: U. S. Geol. Survey Bull. 907, 201 p.

*Pages 97-107 and 136-142.*—Stratigraphic relationship of Paleozoic formations in Alaska Range and Yukon-Tanana region discussed. References made to paleontologic information in earlier publications [especially Mertie, 1937b]. No faunal lists.

**Case, E. C.**, 1919, The environment of vertebrate life in the late Paleozoic in North America; a paleogeographic study: Carnegie Inst. Washington Pub. 283, 273 p., 8 figs.

*Pages 179-186.*—Summarizes known data on stratigraphy and age of upper Paleozoic rocks in Alaska. *Pages 216-219.*—Interpretation of conditions at end of Paleozoic in Alaska and British Columbia. [Age determinations should be revised in light of later work; see Girty, 1927, and Mertie, 1930.]

**Chapin, Theodore**, 1918, The structure and stratigraphy of Gravina and Revillagigedo Islands, Alaska: U. S. Geol. Survey Prof. Paper 120-D, p. 83-100.

*Pages 88, 89, and 92-94.*—Discusses probable Middle Devonian rocks on Vallenar Bay. Discusses age and correlation of beds of schist and limestone northeast of Ketchikan on George Arm; tentative late Carboniferous age not based on new fossil collections. Discusses stratigraphic relationship of Triassic and older rocks.

**Collier, A. J.**, 1902, A reconnaissance of the northwestern portion of Seward Peninsula, Alaska: U. S. Geol. Survey Prof. Paper 2, 70 p.

*Pages 20-22 and 24.*—Fossils from Port Clarence assigned by Charles Schuchert to "middle of the Lower Silurian system" [now Ordovician system]. Faunal lists and discussion of correlation. One poor collection of fossils from the Kugruk group on Baldy Mountain dated as either Upper Silurian [true Silurian] or Devonian.

\_\_\_\_\_, 1905, Coal fields of the Cape Lisburne region: U. S. Geol. Survey Bull. 259, p. 172-185.

*Pages 174-175 and 182.*—Discusses Carboniferous plants and invertebrates from Lisburne limestone and underlying rocks [see Collier, 1906, for detail].

<sup>f</sup>\_\_\_\_\_, 1906, Geology and coal resources of the Cape Lisburne region, Alaska: U. S. Geol. Survey Bull. 278, 54 p., 9 pls.



Pages 18, 19, 22-26, and 35.—Detailed stratigraphy. Reports on fossil plants by David White (lower Mississippian) and on fossil invertebrates by G. H. Girty (lower Carboniferous).

Collier, A. J., Hess, F. L., Smith, P. S., and Brooks, A. H., 1908, The gold placers of parts of Seward Peninsula, Alaska, including the Nome, Council, Kougarok, Port Clarence, and Goodhope precincts: U. S. Geol. Survey Bull. 328, 343 p.

Pages 75-79.—Extensive quotation from reports by Charles Schuchert dating most of Port Clarence limestone collections as Silurian; report by E. O. Ulrich cited as evidence of Ordovician age of some of the fossil material; authors think all the fossils are from about same stratigraphic position and that either Ordovician or Silurian age will be proved at some future date [see Steidtmann and Cathcart, 1922]. Page 81.—Quotes report of G. H. Girty that assigns lower Carboniferous age to lithostrotionid corals from the limestone near Palazruk.

\*Cooper, G. A., 1936, New Cambrian brachiopods from Alaska: Jour. Paleontology, v. 10, no. 3, p. 210-214, 1 pl.

Descriptions of 4 (3 are new) Middle Cambrian species and 1 new genus based on specimens collected by J. B. Mertie, Jr., northeast of Eagle, Alaska. New genus *Arctohedra* and new species *A. minima* and *A. mertiei* proposed. New features of *Nisusia* Walcott recorded. New species *N. borealis* described.

\*\_\_\_\_\_ 1944, Phylum Brachiopoda, in Shimer, H. W., and Shrock, R. R., Index fossils of North America: 837 p., 303 pls, New York, John Wiley and Sons, Inc.

Lists and illustrates certain brachiopod species that occur in Paleozoic rocks in Alaska.

Cooper, G. A., and others, 1942, Correlation of the Devonian sedimentary formations of North America: Geol. Soc. America Bull., v. 53, no. 12, p. 1729-1794, 1 pl., 1 fig.

Stratigraphic column for southeastern Alaska, prepared by E. Kirk. Discussion on page 1784 mentions *Stringocephalus* zone [see Kirk, 1927a]. Salmontrout limestone fauna, from Porcupine River region, given Onesquethaw age [roughly Onondaga age].

Cushing, H. P., 1892, Notes on the geology of the vicinity of Muir Glacier: Natl. Geog. Mag., v. 4, p. 56-62.

Page 59.—Notes occurrence of *Leporditia* and gastropods in limestone at Glacier Bay; H. S. Williams quoted as saying that age is probably Paleozoic, but that the collection does not warrant making a decisive statement.

\_\_\_\_\_ 1895, Notes on the areal geology of Glacier Bay, Alaska: New York Acad. Sci. Trans., v. 15, p. 24-34.

Pages 26 and 27.—Discussion of piece of fossil coral from moraine of Dirt Glacier, referred by H. S. Williams to the genus *Lonsdaleia*, which indicates Carboniferous age.

Dall, W. H., 1869, Observations on the geology of Alaska; in Coast Pilot of Alaska, by George Davidson: U. S. Coast Survey, Pacific Coast, pt. 1, app. 1, p. 193-202.

Page 197.—Mentions fossils obtained by F. W. Beechey from "carboniferous limestone" at Cape Lisburne [see also Buckland, 1839, and Grewingk, 1850].

Dall, W. H., 1896, Report on coal and lignite of Alaska: U. S. Geol. Survey 17th Ann. Rept, pt. 1, p. 763-785.

Pages 864-865.—General summary of Silurian, Devonian, and Carboniferous faunas [see also Schuchert, 1896, and Knowlton, 1896].

\*Dunbar, C. O., 1946, *Parafusulina* from the Permian of Alaska: Am. Mus. Novitates, no. 1325, Sept. 16, 1946, 4 p., 1 pl.

*Parafusulina alaskensis*, n. sp., described; occurs in lower 125(?) feet of Permian section at Halleck harbor near north end of Saginaw Bay on Kuiu Island; correlation made with Artinskian (Leonard) stage.

Dutro, J. T., Jr., 1951, Devonian faunas of the western Brooks Range, Alaska [abs.]: Geol. Soc. America Bull., v. 62, no. 12, p. 1434.

Upper Devonian faunas, mostly of Chemung age or younger; coralline and stromatoporoid assemblages of late Middle or early Late Devonian age; tentative correlations indicate relationships with Cordilleran and Asiatic Late Devonian faunas.

\_\_\_\_ 1953, Stratigraphy and paleontology of the Noatak and associated formations, Brooks Range, Alaska [abs.]. Geol. Soc. America Bull., v. 64, no. 12, p. 1415.

Age and correlation of Late Devonian and early Mississippian faunas in northern Alaska discussed.

Dutro, J. T., Jr., Bowsher, A. L., and Brosge, W. P., 1951, Facies in Carboniferous rocks of northern Alaska [abs.]: Geol. Soc. America Bull., v. 62, no. 12, p. 1434-1435.

Distribution and significance of Carboniferous biofacies and lithofacies in northern Alaska discussed.

Eakin, H. M., 1914, The Iditarod-Ruby region, Alaska: U. S. Geol. Survey Bull. 578, 45 p.

Page 22.—Fragmentary fossils from limestone on Yuko-Solatna divide south of Ruby assigned Devonian age by Edwin Kirk.

\_\_\_\_ 1918a, Gold placer mining in the Porcupine district: U. S. Geol. Survey Bull. 662-B, p. 93-100.

Page 96.—Revised list of fossils from Porcupine Creek [see Wright, 1904, p. 16]; fauna apparently of *Spirifer arcticus* zone, which may be correlated with the Russian Artinskian [see also Wright, 1906, for Girty's reassignment].

\_\_\_\_ 1918b, The Cosna-Nowitna region, Alaska: U. S. Geol. Survey Bull. 667, 54 p.

Pages 25 and 26.—Two collections of fossils, one Upper Ordovician and the other Middle Devonian, studied by Edwin Kirk; short fossil lists; correlations discussed.

\_\_\_\_ 1919, The Porcupine gold placer district, Alaska: U. S. Geol. Survey Bull. 699, 29 p.

Page 11.—Fossils from Porcupine Creek [see Wright, 1904, p. 16] identified by G. H. Girty, who states they appear to be of *Spirifer arcticus* zone, believed to correlate with Russian Artinskian (late Pennsylvanian or early Permian age); faunal list includes Crinoid fragments, *Productus* aff. *P. mammatus*, *Productus* aff. *P. gruenwaldti*, *Spirifer* aff. *S. marcoui* and *S. musakheylensis*, and *Camarophoria* aff. *C. margaritovi*.

Eichwald, E., 1871, Geognostisch-paleontologische bemerkungen uber die halbinsel Mangischlak und die Aleutischen Inseln: 200 p., 20 pls, St. Petersburg.

*Especially pages 88-98, 114-115; plate 4, figure 9; and plate 7, figures 1 and 2.*—Discusses occurrence of Carboniferous plants in graywacke beds north of Cape Akle [on Puale Bay] on Alaskan Peninsula [see Goepfert, 1861]. Describes and illustrates *Calamites ambiguus* and mentions presence of sigillarian fragments. Illustrates fragment of *Lichas* from unknown locality of Silurian age. Mentions occurrence of Carboniferous corals at Cape Lisburne. [Hollick, 1936, confirms pre-Tertiary age of plants.]

Emerson, B. K., 1904, General geology, notes on the stratigraphy and igneous rocks: Alaska, v. 4, Harriman Alaska Exped., p. 11-56.

*Page 20.*—Refers to H. S. Williams' dating of limestone near Glacier Bay as Carboniferous on evidence of a single specimen of *Lonsdaleia* [see Cushing, 1895].

Emmons, S. F., 1898, Map of Alaska showing known gold-bearing rocks, with descriptive text containing sketches of the geography, geology, and gold deposits and routes to the gold fields: U. S. Geol. Survey Special Pub., 44 p., 1 map.

*Page 24.*—Mentions that "fossils of Carboniferous age and plants of Devonian aspect" have been found in the "Tahkandit series."

Etheridge, R., 1878, Paleontology of the coasts of the Arctic lands visited by the late British expedition under Captain Sir George Nares: Geol. Soc. London Quart. Jour., v. 35, p. 568-639, pls. 25-29.

*Pages 612-613.*—Cites two papers in which the fauna from Cape Thompson were listed (Buckland, 1839, and Grewingk, 1850). Notes that the term *Fulstrae* probably refers to *Fenestella*.

Fay, A. H., 1907, Geology and mining of the tin deposits of Cape Prince of Wales, Alaska: Am. Inst. Min. Eng. Bull., v. 17, p. 769-787.

*Page 778.*—Reports three fossil localities near Cape Mountain; no age determination made; quotes Collier to the effect that fossils of Carboniferous age were found in the section there [see Brooks, 1906, p. 206, 217, and 224].

\* Flower, R. H., 1941a, Cephalopods from the Seward Peninsula of Alaska: Bull. Am. Paleontology, v. 27, no. 102, 22 p., 2 pls.

Detailed descriptions of three new Early Ordovician species collected from the York district by J. B. Mertie, Jr.; species described are *Ellesmeroceras bridgei* Flower, *Ellesmeroceras expansum* Flower, and "*Plectoceras*" *sewardense* Flower; genus *Ellesmeroceras* Foerste is revised.

\_\_\_\_ 1941b, Notes on structure and phylogeny of euryisiphonate cephalopods: Paleontographica Americana, v. 3, no. 13, 56 p., 3 pls., 3 figs.

Discusses relationship and classification of some early Paleozoic cephalopods. Mentions "*Plectoceras*" *sewardense* (p. 19) and *Ellesmeroceras bridgei* (p. 28) from Seward Peninsula that have been described elsewhere [Flower 1941a].

\* \_\_\_\_ 1946, *Alaskoceras* and the Plectoceratidae: Jour. Paleontology, v. 20, no. 6, p. 620-624.

Discusses genus *Alaskoceras* [see Miller and Kummel, 1945], its validity and taxonomic position. *Plectoceras*(?) *sewardense* Flower treated in detail [see Flower, 1941a, 1941b; Ulrich, Foerste, Miller, and Unklesbay, 1944].

Foerste, A. F., 1924, Upper Ordovician faunas of Ontario and Quebec: Canada Geol. Survey, Mem. 138, p. 1-255, 46 pls.

Page 17.—Personal communication from E. O. Ulrich states that the Richmond of Alaska and the Western States contains a species of *Receptaculites* very similar to *R. oweni* Hall. Page 21.—Ulrich quoted as stating that *Calapoecia* cf. *canadensis* Billings (perhaps *C. huronensis* Billings), *Columnaria calicina* (Nicholson) and *C. alveolata* Goldfuss are associated in the Richmond of northwest Alaska [Seward Peninsula; see Steidtmann and Cathcart, 1922].

Girty, G. H., 1905, The relations of some Carboniferous faunas: Washington Acad. Sci. Proc., v. 7, p. 1-26.

Page 3.—Notes that *Productus giganteus* has been found in Alaska. Pages 16-17.—Compares one occurrence of lower Carboniferous fauna in Alaska to the Baird shale fauna. Relates upper Carboniferous Alaskan faunas to the McCloud limestone fauna and the "Hueconian" fauna of trans-Pecos Texas [now considered Permian].

\_\_\_\_\_ 1909, Upper Carboniferous: Jour. Geology, v. 17, no. 4, p. 305-319.

Page 311.—States that the "Hueconian" fauna is widely distributed over the West and ranges into Alaska. Specifically, the fauna of the Nosoni formation is apparently recognizable to the east and west [sic] of California and to the north into Alaska. Page 314—"...there is a possibility, if not a certain probability, that the Artinsk and Permian may be correlated with the Hueco formation."

† \_\_\_\_\_ 1927, Descriptions of Carboniferous and Triassic fossils, in 'Mansfield, G. R., Geography, geology, and mineral resources of part of southeastern Idaho: U. S. Geol. Survey Prof. Paper 152, 453 p., 70 pls., 46 figs.

Pages 79-81.—G. H. Girty compares Phosphoria faunas with those from Permian of southeastern Alaska, which are referred to the Artinskian; similar brachiopods occurring in both faunas are listed. [This is the first detailed record of Girty's reassignment of Alaskan faunas, previously called Gschelian, to the Permian. see Eakin, 1918a and 1919; Brown, 1924; Mertie, 1930, 1933, and 1937b.]

Goepfert, H. R., 1861, Ueber die Tertiärflora der Polargegenden: Schlesischen Gesell. vaterl. Kultur., Abt. Naturwiss. u. Med., 39te Jahresber., pt. 2, Abh., p. 195-207.

Page 204.—Cites presence of *Calamites* from locality north of Cape Alek, Alaska Peninsula; not of Tertiary age. [Not seen by author. see Eichwald, 1871; Hollick, 1936.]

Grewingk, C. I., 1850, Beitrag zur Kenntniss der orographischen und geognostischen Beschaffenheit der Nord-West-Küste Amerikas, mit den anliegenden Inseln: Gedruckt bey K. Kray, 351 p., 4 pls., 5 maps, St. Petersburg.

Pages 86-90.—Summarizes information from F. W. Beechey's voyage [see Buckland, 1839] and lists fossils collected at Cape Lisburne by Fisher and Kupreanof. Appendix 1, pages 270 and 271.—Lists and discusses Carboniferous fossils from Cape Thompson and Cape Lisburne; corals collected by Fisher and Kupreanof have a Silurian aspect, although Grewingk follows Buckland's age assignment. [Apparently the same work was published earlier in Verhandlungun der mineralogischen gesellschaft zu St. Petersburg, 1848-49, p. 76-424.]

- † Gryc, G., 1951, Paleontology, in Payne, T. G., and others, Geology of the Arctic slope of Alaska: U. S. Geol. Survey Oil and Gas Investigations Map OM 126, 3 sheets.

*Sheet 3.*—Brief discussion of faunas and ages of Devonian, Mississippian, and Permian formations in northern Alaska. *Sheet 1.*—Some typical fossils mentioned in explanation of columnar section.

- \*Harker, P., and McLaren, D. J., 1950, *Sciophyllum*, a new rugose coral from the Canadian Arctic: Canada Dept. Mines and Tech. Surveys, Geol. Survey Bull. 15, p. 29-34, 1 pl.

Describes new genus and new species of lithostrotionid coral from limestone of Mississippian age on Canada-Alaska boundary at latitude 68°48'40" N.; affinities of the new genus discussed. [This locality is in a belt now mapped as Lisburne group (Mississippian).]

- \*Hayasaka, I., 1936, On some North American species of *Lithostrotionella*: Taihoku Imp. Univ. Mem., v. 13, no. 5, Geology no. 12, p. 47-73, pls. 11-17.

Describes 10 new species of North American *Lithostrotionella*; *L. americana* listed as from 141st meridian near headwaters of Incog Creek; *L. floriformis* type specimens from west end of southern shore of Madre de Dios Island, southeastern Alaska; *L. vesicularis* type specimen from Soda Bay, southeastern Alaska; and other specimens from Porcupine-Arctic section [see Harker and McLaren, 1950; both *L. americana* and *L. vesicularis* are from areas in northern Alaska in which the Mississippian Lisburne group probably crops out].

- Hill, D., 1948, The distribution and sequence of Carboniferous coral faunas: Geol. Mag., v. 85, no. 3, p. 121-148.

*Page 144.*—Notes that *Lithostrotionella* occurs in Alaskan Carboniferous rocks [see Hayasaka, 1936]. *Figure 3.*—Indicates that compound rugose corals lived in Capé Lisburne region in northwestern Alaska during Viséan time.

- Hollick, A., 1936, The Tertiary floras of Alaska: U. S. Geol. Survey Prof. Paper 182, 185 p., 122 pls.

*Pages 1 and 2.*—Historical review of paleobotanical references on Alaska. Discredits Grewingk's report of Carboniferous plants from Unga Island [see Grewingk, 1850, and Knowlton, 1894]. Confirms Eichwald's identification of *Calamites*, collected near Cape Aklek [see Eichwald, 1871, and Goepfert, 1861].

- Hooper, C. L., 1881, Report of the cruise of the U. S. Revenue Steamer *Corwin* in the Arctic Ocean: U. S. Treasury Dept. Doc. 118, 71 p., pls., map.

*Page 48.*—Mentions abundance of fossil shells, including "terebratulæ" and "trilobites" in the geologic formation at Cape Thompson; no details given.

- Howell, B. F., and others, 1944, Correlation of the Cambrian formations of North America: Geol. Soc. America Bull., v. 55, no. 8, p. 993-1003, 1 pl.

Stratigraphic column for Eagle district, Yukon River valley, prepared by C. E. Resser, indicates presence of the *Calvinella* zone of Trempeleau age and the *Briscoia* zone of Franconia age in rocks of Late Cambrian age.

Hume, G. S., 1925, The Paleozoic outlier of Lake Timiskaming, Ontario and Quebec: Canada Dept. Mines, Geol. Survey Mem. 145, 129 p., 16 pls., 7 figs.

Page 27. —Refers to fossils of Trenton age (Middle Ordovician) from Port Clarence limestone on Don River, Seward Peninsula [see Kindle, 1911, p. 344].

Isbister, A. K., 1855, On the geology of the Hudson's Bay territories, and of portions of the Arctic and northwestern regions of America: Geol. Soc. London Quart. Jour., v. 11, p. 497-520, map; *without map*, Am. Jour. Sci., ser. 2, v. 21, p. 313-338, 1856.

Page 519. —Summarizes information on Carboniferous fossils from northwestern Alaska [see Buckland, 1839, and Grewingk, 1850]. Mentions occurrence of Carboniferous plants in southern Alaska [probably not Carboniferous; see Knowlton, 1894]; presence of Silurian rocks in neighborhood of Sitka indicated by occurrence of *Catenipora escharoides* as a rolled fragment.

† Kindle, E. M., 1907, Notes on the Paleozoic faunas and stratigraphy of southeastern Alaska: Jour. Geology, v. 15, no. 4, p. 314-337, illus.

Extensive remarks on the stratigraphic succession; and discussion, with lists, of the invertebrate faunas (largely Brachiopoda) found along the coast and in the Alexander Archipelago. Silurian; Lower, Middle, and Upper Devonian; Mississippian; and upper Carboniferous (Gschel-stufe equivalent) faunas listed [these upper Carboniferous faunas now considered probable Permian; see Buddington and Chapin, 1929].

† \_\_\_\_\_ 1908a, Geologic reconnaissance of the Porcupine valley, Alaska: Geol. Soc. America Bull., v. 19, p. 315-338.

Description of the structure and stratigraphy based on a field study in 1906 of the valley of this tributary of the Yukon (at about lat, 66°35' N., long, 145°28' W.). Faunas listed and discussed: Ordovician, Middle Silurian, Middle or Upper Silurian graptolite fauna, Middle Devonian (Salmontrout limestone), Mississippian, and upper Carboniferous (Pennsylvanian?).

\_\_\_\_\_ 1908b, Occurrence of the Silurian fauna in western America: Am. Jour. Sci., ser. 4, v. 25, no. 146, p. 125-129.

Includes lists of invertebrate fossils from the lower ramparts of the Porcupine River, and from Kuiu Island, southeastern Alaska; fauna closely allied to the Niagara fauna of the Eastern United States.

† \_\_\_\_\_ 1909, The section at Cape Thompson, Alaska: Am. Jour. Sci., ser. 4, v. 28, no. 168, p. 520-528.

Pages 523-527. —Description of formations, lists of Mississippian fossil plants and invertebrates, and discussion of ages of beds.

\_\_\_\_\_ 1911, The faunal succession in the Port Clarence limestone, Alaska: Am. Jour. Sci., ser. 4, v. 32, no. 191, p. 335-349.

Gives order of succession and correlation of the several faunas known to occur in the formation (ranging in age from Cambrian to Devonian or Carboniferous) on Seward Peninsula; includes preliminary lists of invertebrate species represented. [Much of this paper has been superseded by later work; see Steidtmann and Cathcart, 1922.]

\_\_\_\_\_ 1919, The discovery of a Portage fauna in the Mackenzie River valley: Canada Geol. Survey Mus. Bull. 29, 8 p., 2 pls.

Page 4. —Indicates that Portage fauna is probably widely distributed to west of Mackenzie River. *Buchiola retriostrata* von Buch collected by Kindle on Yukon River below Eagle [see Brooks and Kindle, 1908, p. 288]. Burling also collected a Portage fauna on the Canadian-Alaskan boundary north of the Yukon [see Kindle and Burling, 1914, p. 317].

Kindle, E. M., and Burling, L. D., 1914, Report of the invertebrate paleontologist: Canada Geol. Survey, Summary Rept. for 1913, p. 300-321.

Pages 308-314 and 316-321. —Preliminary reports on fossils collected by D. D. Cairnes party along Canadian-Alaskan boundary in 1912-13; all Paleozoic systems from Cambrian to Carboniferous represented; Ordovician faunas compared to those obtained from Port Clarence limestone; Silurian faunas similar to those collected along Porcupine River [see Kindle, 1908a and 1911]; Devonian fauna like that of Salmontrout limestone; a "Portage fauna" from overlying shales.

King, R. E., 1930, The geology of the Glass Mountains, Texas; pt. 2, faunal summary and correlation of the Permian formations, with description of Brachiopods: Texas Univ. Bull. 3042, 245 p., 44 pls., 5 figs.

Page 33. —Discusses Permian faunas of Alaska; points out their similarity to the Phosphoria fauna and their relationship to the *Schwagerina* zone and the Russian Artinskian stage. [Good general discussion of Arctic Permian faunas.]

Kirk, E., 1918a, An Ordovician fauna from southeastern Alaska [abs.]: Geol. Soc. America Bull., v. 29, no. 1, p. 143-144.

Discusses occurrence of Lower Ordovician graptolite fauna in Wrangell series at Wrangell; *Tetragraptus* and *Phyllograptus* ? listed.

1918b, Paleozoic glaciation in southeastern Alaska: Am. Jour. Sci. ser. 4, v. 46, no. 273, p. 511-515.

Mentions faunas of two Silurian limestone beds on north side of Heceta Island. Upper limestone contains rich *Conchidium* fauna [see Kirk and Amsden, 1952]. Lower limestone contains pentameroids, corals, and gastropods. Both limestone beds called late Niagara in age. Refers to *Stringocephalus*-bearing limestone zone of Middle Devonian on west coast of Prince of Wales Island.

\* 1922, *Brooksina*, a new pentameroid genus from the Upper Silurian of southeastern Alaska: U. S. Natl. Mus. Proc., 1922, v. 60, art. 19, 8 p., 1 pl.

Full description of a new genus and type species of fossil brachiopod, and discussion of its faunal affinities and the zone in which abundant specimens were found (on Kosciusko and Heceta Islands).

\* 1926, *Harpidium*, a new pentameroid brachiopod genus from southeastern Alaska: U. S. Natl. Mus. Proc., 1925, v. 66, art. 32, 7 p., 2 pls.

Descriptions of three species of this new brachiopod found in the limestone series on Heceta and Kosciusko Islands. Limestone series characterized by another new brachiopod described by Kirk (1922).

1927a, New American occurrences of *Stringocephalus*: Am. Jour. Sci., ser. 5, v. 13, no. 75, p. 219-222.

Reports finding *Stringocephalus* at two localities in southeastern Alaska in 1917, both near Klawak on west coast of Prince of Wales Island; zone considered to lie near top of Middle Devonian.

\* 1927b, *Cymbidium*, a new genus of Silurian pentameroid brachiopods from Alaska: U. S. Natl. Mus. Proc., 1927, v. 69, art. 23, 5 p., 1 pl.

Discussion of the faunal sequence in southeastern Alaska, including a description of the new genus represented by two species collected by the author on Kosciusko Island.

- \*Kirk, E., 1927c, *Pycnodesma*, a new molluscan genus from the Silurian of Alaska: U. S. Natl. Mus. Proc., v. 71, art. 20, 9 p., 2 pls.

Descriptions of *Pycnodesma giganteum* and *P. benjamini*, n. gen. and n. spp., from the "uppermost stratigraphic unit of the Silurian in Southeast Alaska"; rocks of this age occur also on Seward Peninsula and "probably in the Upper Yukon Valley in the Fairbanks region."

- \*\_\_\_\_\_ 1928, *Bathmopterus*, a new fossil gastropod genus from the Silurian of Alaska: U. S. Natl. Mus. Proc., v. 74, art. 18, 4 p., 1 pl.

Description of a new species based on specimens from Willoughby Island, Glacier Bay, southeastern Alaska [Shimer and Shrock, 1944, show this genus as = *Euomphalopterus* Roemer 1876; see also Knight, 1938].

- \_\_\_\_\_ 1929, Ordovician, Silurian, and Devonian of Alaska [abs.]: Geol. Soc. America Bull., v. 40, no. 1, p. 227-229.

Brief discussion and correlation of stratigraphic units represented on Seward Peninsula, in the Yukon-Porcupine area, and in southeastern Alaska. Discussion of Paleozoic geography of the northeastern Pacific Ocean.

- \*\_\_\_\_\_ 1937a, *Clistocrinus*, a new Carboniferous crinoid genus: Wash. Acad. Sci. Jour., v. 27, no. 3, p. 105-111, 8 figs.

Describes new genus and species, *Clistocrinus pyriformis* from Carboniferous strata on large island at head of Saginaw Bay on Kuiu Island, southeastern Alaska. E. Kirk, G. H. Girty, and L. G. Henbest believe the fauna is of early Pennsylvanian age.

- \_\_\_\_\_ 1937b, *Clithrocrinus*, new name for *Clistocrinus* Kirk: Wash. Acad. Sci. Jour., v. 27, no. 9, p. 373-374.

Proposes new generic name because of possibility that original name [Kirk, 1937a] is a homonym of *Cleistocrinus* Springer.

- \*Kirk, E., and Amsden, T. W., 1952, Upper Silurian brachiopods from southeastern Alaska: U. S. Geol. Survey Prof. Paper 233-C, p. 53-66, 4 pls., 6 figs.

Describes part of Upper Silurian brachiopod fauna from southeastern Alaska. Twenty-one species considered, of which 6 are new, 6 were described in earlier publications by Kirk, 3 are referred to previously known species, and 6 are incompletely known. New genus *Alaskospira* described; attention called to the resemblances between this fauna and one that occurs in the Upper Silurian of the eastern Urals.

- \*Knight, J. B., 1941, Paleozoic gastropod genotypes: Geol. Soc. America Special Paper 32, 510 p., 96 pls., 32 figs.

Pages 49-51 and plate 78, figure 2.—Discussion of Kirk's genus *Bathmopterus* [see Kirk, 1928]; the Alaskan form closely resembles *Euomphalopterus* Roemer [see Shimer and Schrock, 1944, in which *Bathmopterus* is listed as a synonym].

- Knopf, Adolph, 1908, Geology of the Seward Peninsula tin deposits, Alaska: U. S. Geol. Survey Bull. 358, 71 p.

Page 13.—Reports identification by E. M. Kindle of fossils collected at head of Cassiterite Creek. These fossils apparently included specimens of



*Raphistoma* and *Liospira*, indicating an Ordovician age for the Port Clarence limestone.

Knopf, Adolph, 1909, Some features of the Alaskan tin deposits: *Econ. Geology*, v. 4, no. 3, p. 214-223.

Page 216. —Refers to fossiliferous Mississippian rocks in vicinity of Cape Mountain, Seward Peninsula [see Collier, 1908].

\_\_\_\_ 1912a, The Eagle River region, southeastern Alaska: U. S. Geol. Survey Bull. 502, 61 p.

Pages 17-18. —Discusses relationship of rocks in northern part of Juneau gold belt to fossiliferous Carboniferous rocks at Taku Harbor [see Wright and Wright, 1908, p. 55].

\_\_\_\_ 1912b, The Sitka mining district, Alaska: U. S. Geol. Survey Bull. 504, 32 p.

Pages 11-12. —Summarizes data on Silurian, Devonian, and Carboniferous rocks on Freshwater Bay, Chichagof Island [see Kindle, 1907].

Knowlton, F. H., 1894, Fossil flora of Alaska: *Geol. Soc. America Bull.*, v. 5, p. 573-590.

Page 573. —In a review of previous work, Dr. Knowlton expresses doubt that Carboniferous plants occur at Unga, south-central Alaska [the plants were reported by Grewingk, 1850, and by Isbister, 1855].

\_\_\_\_ 1896, Report on the fossil plants collected in Alaska in 1895 as well as an enumeration of those previously known from the same region, with a table showing their relative distribution: U. S. Geol. Survey 17th Ann. Rept., pt. 1, app. 1, p. 876-897.

Page 877. —Discusses fragment of *Calamites* collected near Cape Aklek [see Geoppert, 1861; Eichwald, 1871; and Hollick, 1936].

\*Kobayashi, T., 1935, The *Briscoia* fauna of the late Upper Cambrian in Alaska, with descriptions of a few Upper Cambrian trilobites from Montana and Nevada: *Japanese Jour. Geology and Geography*, v. 12, nos. 3-4, p. 39-57, 3 pls.

Describes 2 new brachiopod species, 2 new genera, and 16 new species of trilobites [fauna that author considered of Trempeleau age now thought to be of high Franconia age]. Compares Alaskan fauna with that in Upper Lingula flags, England, and in Fengshanian, East Asia.

\*\_\_\_\_ 1936a, Cambrian and Lower Ordovician trilobites from northwestern Canada: *Jour. Paleontology*, v. 10, no. 3, p. 157-167, 1 pl.

Discusses and correlates Upper Cambrian and Lower Ordovician trilobite faunas of Yukon-Alaska boundary area; describes 2 new genera and 8 new species; Upper Cambrian *Briscoia* fauna succeeded by Lower Ordovician *Symphysurina* fauna.

\_\_\_\_ 1936b, Three contributions to the Cambro-Ordovician faunas: *Japanese Jour. Geology and Geography*, v. 13, no. 1-2, p. 163-184, 2 pls., 4 figs.

Page 169 and figure 1. —Discusses occurrence of *Briscoia* and *Hungaia* in the Alaska-Canada boundary area; figure shows presence of *Briscoia*, *Parabriscoia*, and *Hungaia* in the Upper Yukon-International Boundary region [see Kobayashi, 1935, and Mertie, 1933].

†Leffingwell, E. de K., 1919, The Canning River region, northern Alaska: U. S. Geol. Survey Prof. Paper 109, 251 p.

*Pages 106-115.* —Discusses ages and correlations of Carboniferous rocks and presents extensive lists of fossils from Lisburne limestone (Mississippian) and Sadlerochit sandstone (Pennsylvanian). Faunas studied by G. H. Girty, whose reports are quoted at length [Sadlerochit fauna was later considered by Girty to be of Permian age; see Mertie, 1930, and P. S. Smith, 1939].

Maddren, A. G., 1912, Geologic investigations along the Canada-Alaska boundary: U. S. Geol. Survey Bull. 520-K, p. 297-314.

*Page 310.* —Rocks west of upper Old Crow River (on Yankee Ridge and Horse Hill), mainly limestones and limy shales, contain fossil corals and brachiopods of Carboniferous age. [These fossils, and others collected in 1912, were studied by G. H. Girty, who reported presence of both Mississippian and Permian faunas (this faunal information has not been published); see Harker and McLaren, 1950, for description of coral from this belt of Mississippian rocks; Hayasaka, 1936, lists corals collected in this area.]

Martin, G. C., 1922, Gold lodes in the upper Kuskokwim region: U. S. Geol. Survey Bull. 722-E, p. 149-161.

*Pages 156-157.* —Age of limestones in upper Kuskokwim region, believed to be equivalent to "Takotna series", is considered probably Middle Devonian or possibly Ordovician. [see Brown, 1924, for more detail on this region.]

<sup>t</sup> 1926, The Mesozoic stratigraphy of Alaska: U. S. Geol. Survey Bull. 776, 493 p.

*Page 5.* —Summarizes character of pre-Triassic basement as follows: "The youngest rocks of known age that underlie the Triassic beds of Alaska are early Permian(?) limestones. These limestones carry a fauna closely related to that of the Artinskian of Russia, which is regarded by some as pre-Permian but which is more generally considered as the lowest division of the Permian. These limestones are very widely distributed in Alaska, occurring in nearly all the larger geographic regions, and show that toward the end of the Paleozoic era (at about the beginning of Permian time) limestone-forming seas extended over the larger part if not all of the area that is now Alaska. Marine Permian deposits younger than the Artinskian are not known and probably are not present in Alaska." Other data on pre-Mesozoic rocks, most of which summarize earlier work, are found on pages 67, 68, 73-78, 81-83, 89, 92-94, 96, 101, 103, 106-111, 113-117, 128-129, 257, 260-262, 376-377, 383-386, 391-393, 395, 448-449, 452, and 455-456.

\*Meek, F. B., 1867, Remarks on the geology of the valley of Mackenzie River, with figures and descriptions of fossils from that region, in the museum of the Smithsonian Institution, chiefly collected by the late Robert Kennicott, Esq.: Chicago Acad. Sci. Trans., v. 1, p. 61-114, 5 pls.

Describes Devonian fossils from Porcupine River valley and other fossils; Alaskan species include *Cyathophyllum arcticum*, *Zaphrentis recta*, *Zaphrentis mcFarlanei*, *Paleocyclus kirbyi*, *Favosites polymorpha* Goldfuss, *Atrypa aspera* Schlotheim, and *Cyrtina hamiltonensis* Hall; the four coral species are new.

Mendenhall, W. C., 1902, Reconnaissance from Fort Hamlin to Kotzebue Sound, Alaska: U. S. Geol. Survey Prof. Paper 10, 68 p.

*Page 32* —Mentions earlier collection of Silurian and Devonian fossils on Seward Peninsula [see Brooks and others, 1901, and Collier, 1902].

- † Mendenhall, W. C., 1905, Geology of the central Copper River region, Alaska: U. S. Geol. Survey Prof. Paper 41, 133 p.

*Pages 40-46.*—Report by Charles Schuchert on eight collections from the Mankomen formation establishes Permian age of the predominantly brachiopod faunas; fossil lists. Discussion of correlation of Mankomen formation with other Permian rocks in Alaska and elsewhere in the world.

- Mendenhall, W. C., and Schrader, F. C., 1903, The mineral resources of the Mount Wrangell district, Alaska: U. S. Geol. Survey Prof. Paper 15, 71 p.

*Pages 14-15.*—Nikolai greenstone and Chitstone limestone provisionally assigned Permian age [the limestone now considered Triassic; see P. S. Smith, 1939, and Moffit, 1938]. No faunal lists.

- Mertie, J. B., Jr., 1918, The gold placers of the Tolovana district: U. S. Geol. Survey Bull. 662-D, p. 221-277.

*Page 238.*—Edwin Kirk reports on Middle Devonian fossil collection obtained about  $1\frac{1}{2}$  miles south of Livengood.

\_\_\_\_ 1923, Geology and gold placers of the Chandalar district, Alaska: U. S. Geol. Survey Bull. 773-E, p. 215-263.

*Pages 228, 232, 235, and 237-238.*—Fossils from early Paleozoic schist and limestone assigned Silurian age by Edwin Kirk; *Clorinda?* sp. and *Conchidium* sp. listed. Middle Devonian fauna from slate sequence also reported on by Kirk; fossil list. Discusses rocks of Devonian or Mississippian age; fossil lists by G. H. Girty.

\_\_\_\_ 1926, The Paleozoic geology of interior Alaska [abs.]: Wash. Acad. Sci. Jour., v. 16, no. 3, p. 78-79.

Summarizes knowledge of Paleozoic rocks of central and northern Alaska and makes general references to the more fossiliferous zones [for more detail see Mertie, 1930, 1933, 1937b; and Smith and Mertie, 1930].

\_\_\_\_ 1927, The Chandalar-Sheenjek district: U. S. Geol. Survey Bull. 810-B, p. 87-139.

*Pages 115 and 127.*—Report on collection containing *Conchidium*, identified by Edwin Kirk, is reprinted [see Mertie, 1923]. Three small collections from the Lisburne limestone in the upper Sheenjek valley assigned a probable Mississippian age by G. H. Girty.

† \_\_\_\_ 1930, Geology of the Eagle-Circle district, Alaska: U. S. Geol. Survey Bull. 816, 168 p.

*Pages 43-130.*—Extensive report on faunas and ages of Paleozoic rocks of Eagle-Circle district; reevaluation of collections made by the International Boundary Survey party of the Canadian Geological Survey [see Cairnes, 1914b]. Middle and Upper Cambrian faunas reported by C. E. Resser and Edwin Kirk. Tabulation of fossils from Silurian and Devonian rocks; fossils identified by Kirk. Complete list of Mississippian faunas from Calico Bluff formation, compiled mainly from reports by G. H. Girty. Discussion of age of Nation River formation and its flora. Tabulation of lower Permian (Artinskian) Tahkandit fauna, as determined by Girty, and correlation of Tahkandit formation with other Permian rocks in Alaska.

\_\_\_\_ 1931, A geologic reconnaissance of the Dennison Fork district, Alaska: U. S. Geol. Survey Bull. 827, 44 p.

Page 26. —Wellesley formation assigned Carboniferous age; based on a reevaluation of a single collection by A. H. Brooks [Brooks, 1900a, p. 472].

† Mertie, J. B., Jr., 1933, The Tatonduk-Nation district: U. S. Geol. Survey Bull. 836-E, p. 347-443.

Pages 369-432. —Detailed discussion of age and correlation of late pre-Cambrian and Paleozoic rocks; data additional to those given by Mertie (1930). Extensive lists of Cambrian, Ordovician, Silurian, Devonian, Mississippian, and Permian faunas. Especially important new collections from Cambrian, Ordovician, Mississippian (Calico Bluff formation), and Permian (Tahkandit limestone) are discussed.

\_\_\_\_\_ 1937a, The Kaiyuh Hills: U. S. Geol. Survey Bull. 868-D, p. 145-178.

Page 160. —Devonian limestone dated on basis of one small collection of fossils [see Eakin, 1914, p. 22]; Kirk's identifications reprinted.

† \_\_\_\_\_ 1937b, The Yukon-Tanana region, Alaska: U. S. Geol. Survey Bull. 872, 276 p.

Pages 73-153. —Compiles all previous and many new data on stratigraphy and paleontology of Paleozoic rocks in central Alaska. The report on faunas is most recent comprehensive one and represents efforts of several paleontologists. Faunas listed range from Middle Cambrian through Permian. Cambrian fossils identified by G. A. Cooper, Edwin Kirk, C. E. Resser, L. D. Burling, and T. Kobayashi. Ordovician, Silurian, and Devonian forms studied by Kirk; three Middle Devonian fossil horizons recognized by Kirk. Carboniferous and Permian faunas studied by G. H. Girty. Lists of fossils from the Calico Bluff and Tahkandit formations are essentially the same as those published in Mertie (1930).

\_\_\_\_\_ 1938, The Nushagak district, Alaska: U. S. Geol. Survey Bull. 903, 96 p.

Pages 43-44. —Two collections of fossils from Permian limestone reported by G. H. Girty; fossil lists.

Mertie, J. B., Jr., and Harrington, G. L., 1924, The Ruby-Kuskokwim region, Alaska: U. S. Geol. Survey Bull. 754, 129 p.

Pages 20 and 21. —Earlier reports dating Middle(?) Devonian limestone in Ruby-Kuskokwim region reproduced.

\* Miller, A. K., and Kummel, B., 1945, A new genus of early Paleozoic cephalopods from Alaska: Jour. Paleontology, v. 19, no. 3, p. 126-128, 1 pl.

Description of type specimens of *Alaskoceras* from the York district, Seward Peninsula [see Flower, 1941a, 1946].

Miller, A. K., Youngquist, W., and Collinson, C., 1954, Ordovician cephalopod fauna of Baffin Island: Geol. Soc. America Mem. 62, 234 p., 63 pls., 20 figs.

Pages 39-40. —Summary of early Upper Ordovician faunal lists previously reported from Alaska [see Cairnes, 1914b; Kindle, 1908a; Prindle, 1913a; Eakin, 1918b; Steidtmann and Cathcart, 1922].

Moffit, F. H., 1912, Headwater regions of Gulkana and Susitna Rivers, Alaska: U. S. Geol. Survey Bull. 498, 82 p.

Pages 23 and 28. —Dating of Mankomen fauna as Pennsylvanian based on reassessment by G. H. Girty [now considered Permian; see Moffit, 1938b].

Moffit, F. H., 1914, Geology of the Hanagita-Bremner region, Alaska: U. S. Geol. Survey Bull. 576, 56 p.

Page 20. —G. H. Girty indicates age of interstratified schist, slate, and limestone beds as probably Carboniferous; poor preservation of fossils makes age assignment provisional.

1915, The Broad Pass region, Alaska, with sections on Quaternary deposits, igneous rocks, and glaciation, by J. E. Pogue: U. S. Geol. Survey Bull. 608, 80 p.

Page 25. —Edwin Kirk assigns Devonian age to fossils from limestone on Jack River; *Martinia* cf. *M. maia* (Billings), *Tentaculites* sp., *Proetus* sp. (same as that referred by Kindle to *P. haldemani* Hall), and several coralline and molluscan genera listed [see Mertié, 1937b, for revision of Middle Devonian horizons by Kirk].

1918, The upper Chitina valley, Alaska, with a description of the igneous rocks by R. M. Overbeck: U. S. Geol. Survey Bull. 675, 82 p.

Pages 21-22. —Report by G. H. Girty that fossil collections probably are Mississippian in age, although younger age not discounted; faunal lists.

1928, Notes on the geology of upper Nizina River: U. S. Geol. Survey Bull. 813-D, p. 143-166.

Page 152. —Says fossils were found that give definite evidence of Permian age for sequence of predominantly volcanic rocks in the Nizina district [no fossil lists].

1929, The Slana district, upper Copper River region: U. S. Geol. Survey Bull. 824-B, p. 111-124.

Page 117. —Fossils collected on Indian Creek show that the limestone is late Carboniferous (Permian) age and is to be correlated with the Mankomen formation of Mendenhall and with the Permian limestone at the heads of the White and Nizina Rivers [no fossils lists].

1933, The Suslota Pass district, upper Copper River region, Alaska: U. S. Geol. Survey Bull. 844-C, p. 137-162.

Page 147. —Lists Permian faunas from rocks on Platinum and Suslositna Creeks; fossils examined by G. H. Girty and Charles Schuchert. [Collection 1520 lists *Schwagerina* sp.]

1938a, Geology of the Chitina valley and adjacent area, Alaska: U. S. Geol. Survey Bull. 894, 137 p.

Pages 27-37. —Fossil lists for Mississippian and Permian formations compiled from reports by G. H. Girty; collections from the Strelna formation and associated rocks regarded as late Mississippian in age; abundantly fossiliferous rocks from the upper Nizina and White River areas referred to a Permian age.

1938b, Geology of the Slana-Tok district, Alaska: U. S. Geol. Survey Bull. 904, 54 p.

Pages 18-30. —Faunas from Middle Devonian limestone, identified by Edwin Kirk, mainly coralline. Permian Mankomen formation and correlative rocks, richly fossiliferous; fossil lists compiled from reports by G. H. Girty and Charles Schuchert.

1941, Geology of the upper Tetling River district, Alaska: U. S. Geol. Survey Bull. 917-B, p. 115-157.

Age of fossiliferous Devonian rocks ranges from Middle to Upper Devonian. [No new fossil data.] Reference made to previous publications dealing with Permian faunas.

Moffit, F. H., 1943, Geology of the Nutzotin Mountains, Alaska, with a section on the igneous rocks, by R. G. Wayland: U. S. Geol. Survey Bull. 933-B, p. 103-199.

Pages 120-121.—Reference to collections of Permian fossils made in 1940; fossil lists to appear in future paper.

† Moffit, F. H., and Knopf, Adolph, 1910, Mineral resources of the Nabesna-White River district, Alaska, with a section on the Quaternary, by S. R. Capps: U. S. Geol. Survey Bull. 417, 64 p.

Pages 20-24.—Quotes extensive report, by G. H. Girty, which contains many fossil lists for collections from Carboniferous limestone and shale; Girty correlated the fossils most closely with the Russian Gschelian fauna [he later called this fauna Permian; see Moffit, 1938a].

Moffit, F. H., and Mertie, J. B., Jr., 1923, The Kotsina-Kuskulana district, Alaska: U. S. Geol. Survey Bull. 745, 149 p.

Pages 27-28.—Fossils from Strelna formation assigned lower Carboniferous (Mississippian) age by G. H. Girty; faunal lists. Chart shows tentative correlations of Carboniferous rocks in Alaska.

Moore, R. C., and Laudon, L. R., 1943, Evolution and classification of Paleozoic crinoids: Geol. Soc. America Special Paper 46, 153 p., 14 pls., 18 figs., table.

Pages 50 and 108.—*Clithrocrinus* Kirk [see Kirk, 1937] listed under Family Codiocrinidae Bather.

Moore, R. C., and others, 1944, Correlation of Pennsylvanian formations of North America: Geol. Soc. America Bull., v. 55, no. 6, p. 657-706, 1 pl.

Chart, page 704.—Age of supposed Pennsylvanian rocks in Alaska uncertain; Nation River formation, largely nonmarine, and the "limestones of Soda Bay", in southeastern Alaska, possibly of Pennsylvanian age. J. Steele Williams prepared the Alaskan portion of this chart.

Prindle, L. M., 1908, The Fairbanks and Rampart quadrangles, Yukon-Tanana region, Alaska, with a section on the Rampart placers, by F. L. Hess, and a paper on the water supply of the Fairbanks region, by C. C. Covert: U. S. Geol. Survey Bull. 337, 102 p.

Pages 18-23.—Repeats data from Prindle and Hess (1906) and adds report by E. M. Kindle on material collected in 1907; one collection called "late Silurian" on basis of presence of *Megalomus?* and another collection referred to "late Devonian". [No new data on Carboniferous fossils.]

\_\_\_\_\_, 1909, The Fortymile quadrangle, Yukon-Tanana region, Alaska: U. S. Geol. Survey Bull. 375, 52 p.

Pages 20-22.—Quotes extensively from Brooks and Kindle (1908) on faunas and age of the Calico Bluff and Nation River formations. G. H. Girty related the Calico Bluff fauna to the *Productus giganteus* zone in Russia, which perhaps is correlative to the faunas of the Moorefield formation and "White Pine shale" in the United States. David White regarded plant fossils from the Nation River formation as basal Carboniferous or Late Devonian in age.

Prindle, L. M., 1913a, A geologic reconnaissance of the Fairbanks quadrangle, Alaska, with a detailed description of the Fairbanks district, by L. M. Prindle and F. J. Katz, and an account of lode mining near Fairbanks, by P. S. Smith: U. S. Geol. Survey Bull. 525, 220 p.

Pages 38, 39, and 42-47. —Age of Tatalina group given as Upper Ordovician; faunal list. Probable Middle Silurian and Silurian or Devonian fossils also collected from rocks assigned to this group. Undifferentiated Paleozoic limestones include rocks of Late Ordovician, Middle Silurian, and Middle(?) Devonian age; faunal lists. Rocks correlated with Tonzona group provisionally assigned a Devonian age. Carboniferous faunal lists of Prindle (1908) repeated [see also Mertie, 1937b, for latest summary].

1913b, A geologic reconnaissance of the Circle quadrangle, Alaska: U. S. Geol. Survey Bull. 538, 82 p.

Pages 27-30. —Extensive quotations from Brooks and Kindle (1908) on Middle Devonian and upper Carboniferous [now considered Permian] faunas from outcrops along Yukon River in Circle quadrangle; fossil lists provided by Kindle and G. H. Girty reproduced; additional faunas collected from the younger beds, which Girty believes are "upper" Carboniferous rather than Permian [see Mertie, 1937b, for latest summary].

Prindle, L. M., and Hess, F. L., 1905, Rampart placer region: U. S. Geol. Survey Bull. 259, p. 104-119.

Page 110. —Reports occurrence of Devonian corals in limestones associated with tuffs and diabasic rocks [see Prindle and Hess, 1906; and Mertie, 1937b].

1906, The Rampart gold placer region, Alaska: U. S. Geol. Survey Bull. 280, 54 p.

Pages 19-22. —Quotes E. M. Kindle on his determinations of middle Paleozoic fossils from White Mountains and Rampart region; 1 collection, probably of Silurian age, contains *Cytherella* sp., *Cladopora* sp., and *Ptilodictya?* Cf. *P. frondosa*; 3 collections, probably Early Devonian, contain a *Gypidula* of the *pseudogaleatus* type; 4 collections, referred to the Middle Devonian, contain *Favosites* near *epidermatus*, *Favosites winchelli*, *Cladopora?* sp., and *Favosites* near *limitaris*; 2 collections, referred to as probably Devonian, contain *Michelinia*, *Zaphrentis*, and *Stromatopora*. Quotes G. H. Girty regarding 3 Carboniferous collections, 1 of which is tentatively referred to a Pennsylvanian, perhaps "Permo-Carboniferous," age on the basis of the presence of *Hustedia* cf. *H. compressa* Meek and fistuliporoid bryozoans. [see Mertie, 1937b, for latest summary.]

Reid, H. F., 1896, Glacier Bay and its glaciers: U. S. Geol. Survey 16th Ann. Rept., pt. 1, p. 415-461.

Pages 433-434. —Fossils attributed to Carboniferous age reported [see Cushing, 1895].

Ross, C. P., 1933, Mineral deposits near the West Fork of the Chulitna River, Alaska: U. S. Geol. Survey Bull. 849-E, p. 289-333.

Page 298. —Report on a single collection of fossils, determined by G. H. Girty as probably Permian in age; fossil list.

\*Ruedemann, R., 1947, Graptolites of North America: Geol. Soc. America Mem. 19, 652 p., 92 pls.

Especially pages 95, 112-113, 116, and 130. —Detailed discussion of Ordovician and Silurian graptolite faunas of Alaska, their correlation and

age significance. Three new species and one new variety described from Alaskan material; data given regarding other specimens referred to existing species, including *Dictyonema alaskense* n. sp., *Petalograptus posterus* n. sp., *Cryptograptus tricornis* var. *schaferi* Lapworth, *Monograptus chimaera* var. *alaskaensis* n. var., *M. priodon* (Bronn), *M. cf. raitzhainiensis* (Eisel), *M. n. sp. aff. undulatus* Elles and Wood, *M. varians* Wood, and *Cyrtograptus kindlei* n. sp. [Many of these fossil lists replace those given in such earlier publications as Kindle, 1908a; Buddington and Chapin, 1929; and Mertie, 1933.]

Schrader, F. C., 1900, Preliminary report on a reconnaissance along the Chandalar and Koyukuk Rivers, Alaska, in 1899: U. S. Geol. Survey 21st Ann. Rept., pt. 11, p. 441-486.

Page 476. —West Fork series reportedly contains fossils that G. H. Girty identified as "certainly Paleozoic and probably Devonian"; fossil list to be published in later report [see Schrader, 1904].

\_\_\_\_\_, 1902, Geological section of the Rocky Mountains in northern Alaska: Geol. Soc. America Bull., v. 13, p. 233-252, pls. 40-43.

Pages 238-244. —Age of Paleozoic rocks based on study of fossil material by Charles Schuchert; fossil lists identical to those given in Schrader (1904) for Lisburne formation and "Fickett series" [see Smith and Mertie, 1930].

\_\_\_\_\_, 1904, A reconnaissance in northern Alaska across the Rocky Mountains, along Koyukuk, John, Anaktuvuk, and Colville Rivers, and the Arctic coast to Cape Lisburne, in 1901, with notes by W. J. Peters: U. S. Geol. Survey Prof. Paper 20, 139 p.

Pages 57, 64-66, and 70-71. —One fossil collection from Skajit limestone, studied by Charles Schuchert, contains brachiopod like *Meristina* and *Meristella*; the brachiopod also resembles a transverse *Seminula*. "This kind of shell indicates that the rock cannot be older than Upper Silurian and not younger than Lower Carboniferous"; author provisionally dates formation as Upper Silurian on stratigraphic evidence. Several collections from the Lisburne formation identified by Schuchert, who assigned them a Middle Devonian age; six small collections from gravels of the Chandler River, studied by G. H. Girty, called probably Devonian; the fossils collected by Schrader are compared with a coral fauna from near Cape Lisburne, which Schuchert also dates as Middle Devonian [see Collier, 1906, for correct age assignment of Lisburne coral faunas]. A large number of collections from gravels are dated as lower Carboniferous by Schuchert [they supposedly came from Schrader's Fickett series, no longer recognized as a mappable unit].

\*Schuchert, Charles, 1896, Report on Paleozoic fossils from Alaska: U. S. Geol. Survey 17th Ann. Rept., pt. 1, app. 2, p. 864-865, 898-906.

General notes on Silurian, Devonian, and Carboniferous faunas; summary of earlier fossil discoveries, and description of localities (Cape Thompson, Cape Lisburne, Cape Beaufort, Glacier Bay, Cape Yaklok) and fossils. Four Devonian and nine Carboniferous brachiopod species from Saginaw Bay, Kuiu Island, described; no illustrations. [see also Dall, 1896.]

Shimer, H. W., and Schrock, R. R., 1944, Index fossils of North America: New York, 837 p., 303 pls.

Page 89. —Lists *Lithostrotionella americana* Hayasaka from Mississippian of Alaska [other coral genera of widespread distribution occur in Alaskan Paleozoic rocks; see S. Smith, 1945; Meek, 1867; Bassler, 1937].

Page 381. —Lists *Megalomus canadensis* Hall from Alaskan Silurian.



Page 467.—Shows *Bathmopterus* Kirk, 1928, as synonym of *Euomphalopterus* Roemer, 1876 [many undescribed species of widespread molluscan genera occur in the Alaskan Paleozoic, see Flower, 1941a and 1946]. Pages 643 and 651.—Trilobites listed as occurring in Alaska: *Cyphaspis* (Ordovician through Devonian) and *Proetus crassimarginatus* Hall (Lower Devonian) [see Kobayashi, 1935 and 1936a; for references to Brachiopoda see Cooper, 1944].

Smith, P. S., 1910, Geology and mineral resources of the Solomon and Casadepaga quadrangles, Seward Peninsula, Alaska: U. S. Geol. Survey Bull. 433, 234 p.

Pages 23-25 and 54-55.—Fossil evidence for age of Port Clarence limestone summarized [see Knopf, 1908; Collier and others, 1908]. Quotes E. M. Kindle regarding one collection of very poor fossil material, that may represent a Carboniferous horizon, from the Sowik limestone.

† \_\_\_\_\_ 1913, The Noatak-Kobuk region, Alaska: U. S. Geol. Survey Bull. 536, 160 p.

Pages 65-69 and 72-78.—Stratigraphy and age relationships of pre-Carboniferous rocks discussed. Faunas from Noatak sandstone assigned to upper Mississippian by G. H. Girty. Author suggests that certain of the lower beds of Noatak may be Upper Devonian. Lisburne limestone fossils also assigned a late Mississippian age. Girty states that the coralline faunas probably are a different aspect of the fauna found in the Noatak sandstone. E. M. Kindle suggests that one collection from limestones assigned to Lisburne may be Devonian in age. Faunal lists.

\_\_\_\_\_ 1915, Notes on the geology of Gravina Island, Alaska: U. S. Geol. Survey Prof. Paper 95-H, p. 97-105.

Pages 99-103.—Quotes report of E. M. Kindle as to Middle Devonian age of fossils from near South Vallenar Point, Gravina Island. One other Devonian collection, examined by Edwin Kirk, from 3 miles north of Dall Head, Gravina Island [see also Wright and Wright, 1908]. An ambiguous fauna provisionally called Triassic by G. H. Girty.

\_\_\_\_\_ 1917, The Lake Clark-central Kuskokwim region, Alaska: U. S. Geol. Survey Bull. 655, 162 p.

Pages 54-57.—Age of limestones in Lime Hills discussed at length. No fossils found in Lime Hills, but indirect evidence suggests that rocks of Devonian age lie areally close to the limestones. Devonian age for limestones strongly indicated.

† \_\_\_\_\_ 1939, Areal geology of Alaska: U. S. Geol. Survey Prof. Paper 192, 100 p.

Pages 10-34.—Detailed stratigraphic summary of all Paleozoic rocks in Alaska; includes interpretations of ages and correlations. Some older published assignments are changed; for example, Sadlerochit sandstone shifted from Pennsylvanian to Permian age. A collection from hills 4 miles northwest of Mumtrak, in Goodnews Bay district, assigned a Permian age by G. H. Girty; this material previously unreported. Correlation chart included.

Smith, P. S., and Eakin, H. M., 1911, A geologic reconnaissance in south-eastern Seward Peninsula and the Norton Bay-Nulato region, Alaska: U. S. Geol. Survey Bull. 449, 146 p.

Pages 47-50.—Collections from the Kwiniuk River area and White Mountain, according to E. M. Kindle, contain *Megalomus canadensis*, indicating Late Silurian age [Kindle correlated with Guelph fauna, now considered

latest Middle Silurian; see Swartz and others, 1942]. Poorly preserved fossils from sea cliffs south of Mt. Kwiniuk referred to Devonian or Carboniferous by Kindle and E. O. Ulrich. No fossil lists.

- <sup>†</sup>Smith, P. S., and Mertie, J. B., Jr., 1930, Geology and mineral resources of northwestern Alaska: U. S. Geol. Survey Bull. 815, 351 p.

Pages 131, 136-141, 146-151, 158, 165-168, and 179-185.—Ages of Silurian and Devonian rocks based on Edwin Kirk's identifications of small fossil collections. Upper Devonian *Spirifer disjunctus* zone well represented in rocks of upper Killik valley. Flora from basal Noatak sandstone reported by David White to be early Mississippian in age. Reports by G. H. Girty on faunas of Noatak and Lisburne formations tabulated; extensive collections indicate age is Mississippian, but Girty suggests Noatak fauna is early Mississippian and Lisburne fauna is late Mississippian; the two faunas are not differentiated in the table.

- \*Smith, S., 1945, Upper Devonian corals of the Mackenzie River region, Canada: Geol. Soc. America Special Paper 59, 126 p., 35 pls.

Monograph describing 67 coral species, 20 of which are new, mainly from the Mackenzie Basin between Fort Simpson and the Slave River; discussion of correlation and extensive bibliography on fossil corals. Pages 38, 39, and 47; plate 14, figure 4; plate 18, figure 1; plate 23, figure 1.—Two species redescribed: *Prismatophyllum quadrigeminum arcticum* (Meek) and *Phillipsastraea verrilli* (Meek), from Middle Devonian of Porcupine River region. Page 66.—States that *Zaphrentis recta* and *Z. mcIarlanei* [see Meek, 1867] are not congeneric with *Z. phrygia* but are more closely allied to forms described under *Mictophyllum* Wedekind.

- Spencer, A. C., 1906, The Juneau gold belt, Alaska: U. S. Geol. Survey Bull. 287, p. 1-137.

Page 10.—Summary of data on Paleozoic rocks of southeastern Alaska; includes report of Carboniferous fossils from limestone at Taku Harbor [see Buddington and Chapin, 1929, for latest summary].

- Spurr, J. E., 1898, Geology of the Yukon gold district, Alaska: U. S. Geol. Survey 18th Ann. Rept., pt. 3, p. 87-392.

Pages 168-172.—"Rampart series" dated as pre-Carboniferous. Collection of fossils from "Tahkandit series," above Circle City on the Yukon River, dated by Charles Schuchert as Upper Carboniferous. Faunal list made up predominantly of brachiopods [see Mertie, 1937b, for recent summary]. Plants from limestone below mouth of Mynook Creek on the Yukon River identified by David White as possibly Middle or Upper Devonian.

\_\_\_\_\_, 1900, A reconnaissance in southwestern Alaska in 1898: U. S. Geol. Survey 20th Ann. Rept., pt. 7, p. 31-264.

Pages 158-159.—Fossils from Tachatna series, on Kuskokwim River about 10 miles upstream from Tachatna [now Takotna] River junction, assigned Middle Devonian age by Charles Schuchert; fossil list.

- Spurr, J. E., and Post, W. S., 1899, Report of the Kuskokwim expedition, in Maps and descriptions of routes of exploration in Alaska in 1898, with general information concerning the territory: U. S. Geol. Survey Special Pub., 138 p., 10 maps.

Page 35.—Mentions collecting Devonian fossils on the upper Kuskokwim River; locality shown on map [see Spurr, 1900, for details].

- <sup>†</sup>Steidtmann, Edward, and Cathcart, S. H., 1922, Geology of the York tin deposits, Alaska: U. S. Geol. Survey Bull. 733, 130 p.

Pages 21 and 23-29. —Report on new fossil collections and reevaluation of previously collected material from western part of Seward Peninsula. Collections previously recorded as Upper Cambrian assigned to Lower Ordovician by Edwin Kirk; C. D. Walcott and E. O. Ulrich concurred. Most of the earlier "Silurian" collections assigned to Upper Ordovician; one collection called probably Middle Silurian. Carboniferous collections restudied by G. H. Girty, who stated, "Personally I have scarcely a doubt that these fossils represent the same coral fauna that occurs in the Lisburne limestone, upper Mississippian\*\*\*". Extensive faunal lists.

Stevenson, J. J., 1893, Some notes on southeastern Alaska and its people: *Scottish Geog. Mag.*, v. 9, no. 2, p. 66-83.

Page 70. —Mentions finding form like *Acerularia* in moraine of Dirt Glacier. Age of limestone from which fossil supposedly came given as not younger than Middle Devonian [see Cushing, 1895].

Swartz, C. K., and others, 1942, Correlation of the Silurian formations of North America: *Geol. Soc. America Bull.*, v. 53, no. 4, p. 533-538, 1 pl.

Stratigraphic column for southeastern Alaska, prepared by Edwin Kirk, indicates presence of *Lissatrypa* fauna in Upper Silurian. Column for central northern Alaska, also prepared by Kirk, indicates presence of graptolites of approximately Clinton age in shales and limestones on Porcupine River. Limestones and dolomites of central northern Alaska bear fauna with Guelph affinities, but they may be of Upper Silurian age.

Teichert, C., 1937, Ordovician and Silurian faunas from Arctic Canada: Report of Fifth Thule Expedition, 1921-24, v. 1, no. 5, 169 p.

Page 132. —Refers to listing of *Halysites harti* Etheridge from Port Clarence limestone [see Kindle, 1911, p. 347] in fauna considered of Middle Silurian age.

Troedsson, G. T., 1929, On the Middle and Upper Ordovician faunas of northern Greenland, pt. 2, *Meddel. om Grønland*, Bd. 72, Afd. 1, 197 p., 56 pls., 12 figs.

Pages 172-173. —Summarizes occurrences of Middle and Upper Ordovician fossils, especially corals, on Seward Peninsula [see Kindle, 1911], in Porcupine Valley [see Kindle, 1908], and in Yukon-Tanana region [see Prindle, 1913a].

\*Ulrich, E. O., and Cooper, G. A., 1936, New genera and species of Ozarkian and Canadian brachiopods: *Jour. Paleontology*, v. 10, no. 7, p. 616-631.

Makes available new names of forms described in Ulrich and Cooper, 1938; short descriptions, no plates.

\* \_\_\_\_\_ 1938, Ozarkian and Canadian brachiopoda: *Geol. Soc. America Special Paper* 13, 323 p., 14 figs., 57 pls.

Describes four species of brachiopods from Yukon-Alaska boundary region (Tatonduk River area): *Westonia linguloides* (Kobayashi), Upper Cambrian or Lower Ordovician; *Elkania alaskensis* Ulrich and Cooper, 1936, Upper Cambrian; *Schizambon borealis* Ulrich and Cooper, n. sp., Upper Cambrian; *Conodiscus burlingi* (Kobayashi), Upper Cambrian.

Ulrich, E. O., Foerste, A. F., Miller, A. K., and Unklesbay, A. G., 1944, Ozarkian and Canadian Cephalopods, pt. 3, Longicones and summary: *Geol. Soc. America Special Paper* 58, 226 p., 68 pls.

Pages 23 and 66-67. —Refers to Flower's (1941a) description of three species from Seward Peninsula. *Plectoceras? sewardense* referred to

*Tarphyceras*?? [see Flower 1946]. *Ellesmeroceras bridgei* and *E. expansum* listed, but no new descriptive data given.

Wedow, Helmuth, Jr., 1954, Reconnaissance for radioactive deposits in the Eagle-Nation area, east-central Alaska, 1948: U. S. Geol. Survey Circ. 316, 9 p., 1 pl., 1 fig.

Stratigraphic summary of Paleozoic rocks [see also Mertie, 1930, 1933, and 1937b] and some new data. Several types of Ordovician(?) graptolites collected from quartzitic sandstone and shale on Tatonduk River.

Weller, J. M., and others, 1948, Correlation of the Mississippian formations of North America: Geol. Soc. America Bull., v. 59, no. 2, p. 91-196, 2 pls., 7 figs.

Pages 128-130.—J. Steele Williams summarizes knowledge of faunas in Alaska as of 1948 and discusses formations of known or probable Mississippian age; age assignments shown in columns 1 through 5 are explained.

White, D., 1909, The upper Paleozoic floras, their succession and range: Jour. Geology, v. 17, no. 4, p. 320-341.

Pages 324-325.—Discusses early Mississippian floras (Pocono), their distribution, and the affinities of the Pocono flora with the Arctic Alaskan flora [see Collier, 1906].

Williams, J. Steele, 1941, Late Paleozoic faunas of Alaska [abs.]: Geol. Soc. America Bull., v. 52, no. 12, p. 1978.

Discusses Mississippian and Permian faunas of Alaska. Tentative correlations of the latter with other Arctic Permian faunas given; relationship to the Phosphoria fauna also indicated [see Girty, 1927].

\_\_\_\_ 1942, Ecological studies of late Paleozoic faunas: Natl. Research Council, Div. Geology and Geography Ann. Rept., app. N, p. 41 and 42.

Calls attention to studies of Alaskan late Paleozoic faunas being undertaken to determine relationships of various faunal elements to lithologic facies and stratigraphic position. Suggests that Permian faunas are largely of Arctic aspect, but that some forms are like those of the Phosphoria and others are related to west coast faunas [see Girty, 1927].

\_\_\_\_ 1946, Mississippian of southeastern Alaska [abs.]: Amer. Assoc. Petroleum Geologists, Abstracts of papers given at 1946 meeting, Chicago, p. 57-58.

Summarizes knowledge of Mississippian rocks and faunas. Faunas mainly composed of corals, bryozoans, and brachiopods. Preliminary studies indicate absence of rocks of Kinderhook or early Osage age. Mississippian rocks in most places underlain unconformably by Devonian rocks and overlain unconformably by Permian or younger strata. No Pennsylvanian rocks definitely known to be present. [see Buddington and Chapin, 1929.]

\_\_\_\_ 1947, Permian rocks of the upper Yukon region, Alaska [abs.]: Geol. Soc. America Bull., v. 58, no. 12, p. 1241.

Discusses correlation and age of Permian rocks in Alaska; "It is thought that all the rocks included in the Permian of the upper Yukon region are younger than Wolfcamp."

Williams, J. Steele, and Reed, J. C., 1946, Permian stratigraphy of southeastern Alaska [abs.]: Geol. Soc. America Bull., v. 57, no. 12, p. 1243.

Notes on type and distribution of Permian rocks, which are divided into two units: a lower, predominantly clastic sequence containing conspicuous igneous rocks; and an upper, predominantly limestone, dolomite, and chert sequence.

\*Willis, B., 1912, Index to the stratigraphy of North America: U. S. Geol. Survey Prof. Paper 71, 894 p., 1 pl., 19 figs.

Page 221.—Refers to Ordovician graptolites from Alaska Range, reported by Brooks and Prindle (1911), and Ordovician fossils found on Porcupine River (Brooks and Kindle, 1908). Page 222.—Statement by E. M. Kindle that Cambrian and Ordovician faunas have been collected from Port Clarence limestone and that fossils previously determined as Silurian are of Late Ordovician age. Page 262.—Quotes Kindle (1907) regarding Silurian faunas of southeastern Alaska; faunal list and discussion. Page 265.—Refers to Kindle's (1911) discussion of Port Clarence limestone faunas; additional statement that Silurian *Megalomus canadensis*, identical to Glacier Bay and Freshwater Bay form, was found in magnesian limestone on Fish River. Page 266.—Refers to Kindle's discussion of Silurian fauna from Porcupine River (1908b, p. 126). Page 336.—States that collections made by Wright and Kindle have marked European affinities and represent Lower, Middle, and Upper Devonian, but are not related to American contemporaneous faunas; cites Kindle (1907, p. 324-330); Page 337.—States that Middle Devonian fossils have been found in several places in Yukon-Tanana region. Page 338.—Statement by P. S. Smith that Devonian fossils have been found on Fish River, north of Golofnin Bay, and that Devonian (or possibly Carboniferous) fossils have been found in the Darby Range on Seward Peninsula. Page 338.—Brooks (1906, p. 220) quoted on probable Middle Devonian age of Rampart group [see Mertie, 1937b, for more recent interpretation]; Page 339.—Quotes at length from Kindle (1908a, p. 327-330) regarding age and nature of Salmontrout fauna. Page 392.—Quotes Kindle (1907, p. 330-335) on lower Carboniferous fauna of Freshwater Bay. Page 393.—Quotes Kindle (1907, p. 330-335) on upper Carboniferous fauna of southeastern Alaska; author says that, although Girty considers the fauna to be most closely related to the Russian Gschelstufe, the fauna resembles that of the McCloud limestone of California [now considered to be of Permian (?) and Permian age]. Page 394.—Quotes Moffit and Knopf (1910, p. 25-26) on Carboniferous formations of Nabesna-White River region. Page 395.—Cites Collier (1908, p. 81-82) on several Carboniferous faunas collected from Seward Peninsula. Page 395.—Cites Brooks and Kindle (1907) and Kindle (1908a, p. 332-336) regarding Carboniferous faunas and floras studied by G. H. Girty and David White (from Porcupine River valley). Pages 396-399.—Quotes extensively from Collier (1906, p. 16-21) and Kindle (1909, p. 522-526) on stratigraphic relationships, age, and correlation of faunas from Cape Lisburne and Cape Thompson areas, northwestern Alaska: cites letter from G. H. Girty to effect that Lisburne formation is to be correlated, in the main, with the upper Mississippian, although an older fauna is present which contains a few invertebrates, among them *Leptaena rhomboidalis*, not known above the Burlington limestone.

Wright, C. W., 1904, The Porcupine placer district, Alaska: U. S. Geol. Survey Bull. 236, 35 p.

Page 16.—G. H. Girty indicates that a small collection of fossils from Porcupine Creek is from upper part of lower Carboniferous and that fauna is a Pacific Coast type; identified forms are "Crinoidal fragments, *Productus latissimus*, *Productus semireticulatus*, *Spirifer striatus*, *Camarophoria?* sp." [Age and identifications revised by Girty in Eakin, 1919, p. 11.]

1906, A reconnaissance of Admiralty Island, Alaska: U. S. Geol. Survey Bull. 287, p. 138-154.

*Pages 140-141 and 143.*—Metamorphosed strata include rocks as old as Silurian. Quotes G. H. Girty on probable Permian and Carboniferous age of fossils from a point near the southeast entrance of Pybus Bay, Admiralty Island.

Wright, C. W., 1915, Geology and ore deposits of Copper Mountain and Kasaan Peninsula, Alaska: U. S. Geol. Survey Prof. Paper 87, 110 p.

*Pages 17-19 and 70-71.*—Stratigraphic summary of Paleozoic rocks in Ketchikan district. Faunal lists of Lower and Middle Devonian limestones on Long Island [*see also* Kindle, 1907; Wright and Wright, 1908].

†Wright, F. E., and Wright, C. W., 1908, The Ketchikan and Wrangell mining districts, Alaska: U. S. Geol. Survey Bull 347, 210 p.

*Pages 45-57.*—Detailed lists of Silurian and Devonian faunas, prepared by E. M. Kindle, and of lower and upper Carboniferous faunas, prepared by G. H. Girty [some of these data have been reevaluated; *see* Buddington and Chapin, 1929].

# INDEX

Included in this index are references to systems, major taxonomic groups, geographic areas, major localities, rock units, and a list of paleontologists whose determinations are included in papers by other geologists.

The cross index is not complete. For example, some papers that mention brachiopods are not listed under Brachiopoda. Only those that specifically refer to Brachiopoda in the title or annotation are indexed. Clearly, papers which include extensive faunal lists usually mention brachiopods as well. Similar comments apply to other fossil groups.

Geographic regions and major localities, indicated by Roman numerals and numbers in brackets, are shown in plate 29.

## A

### Alaska Peninsula [VII]

Plants, *Calamites* n. sp.: Eichwald 1871; Goepfert 1861; Grewingk 1850; Knowlton 1896.  
Questionable plant locality: Isbister 1855; Knowlton 1894.

### Alaska Range [V]

Correlation, railroad belt: Capps 1940  
Devonian fossils, Broad Pass region: Moffit 1915  
Faunas, Ordovician, Silurian, Devonian: Brooks 1911.  
Permian: Mendenhall 1905  
Permian(?): Ross 1933  
Middle Devonian rocks: Capps 1933

## B

### Brachiopoda

*Alaskaspira*, n. gen., Silurian: Kirk and Amsden 1952.  
Artinskian faunas: Girty 1927  
*Brooksina*, n. gen., Silurian: Kirk 1922  
Cambrian (and Ordovician) spp.: Ulrich and Cooper 1936, 1938.  
Cambrian spp., Middle: Cooper 1936  
Cambrian spp., Upper: Kobayaski 1935  
Cape Thompson locality, Carboniferous: Hooper 1881.  
Carboniferous spp., upper[?]: Brooks 1900b  
*Conchidium*, Upper Silurian: Kirk 1918b; Mertie 1927.  
*Cymbidium*, n. gen., Silurian: Kirk 1927b  
Devonian spp., Porcupine valley: Meek 1867  
Devonian and Carboniferous spp., Kuiu Island locality: Schuchert 1896.  
*Gypidula*, Lower Devonian type: Prindle and Hess 1906.  
*Harpidium*, n. gen., Silurian: Kirk 1926  
Index fossils: Cooper 1944  
"*Leptaena rhomboidalis*," early Mississippian: Willis 1912.  
"*Lissatrypa*" fauna: Swartz and others 1942  
*Meristina*-type, northern Alaska: Schrader 1904

### Brachiopoda—Continued

Paleozoic faunal lists, southeastern: Kindle 1907  
Permian fauna, south-central Alaska: Mendenhall 1905.  
"*Productus*" *gigantous* zone, Mississippian: Girty 1905; Prindle 1909.  
Productids, Derbyshire limestone age [Mississippian]: Buckland 1839.  
Silurian fauna, Upper, southeastern: Kirk and Amsden 1952.  
Silurian fossils, northern Alaska: Mertie 1923  
"*Spirifer*" *arcticus* zone, Permian: Eakin 1918a; Eakin 1919.  
"*Spirifer*" *disjunctus* zone, Upper Devonian: Smith and Mertie 1930.  
*Stringocephalus* zone, Middle Devonian: Kirk 1918b, 1927a.  
Tahkandit "series" fauna, Eagle-Circle district: Spurr 1898.

### Bryozoa

Carboniferous sp., upper[?]: Brooks 1900b; Prindle and Hess 1906.  
*Fenostella* [Mississippian]: Etheridge 1878  
Silurian(?) sp.: Prindle and Hess 1906  
Burling, L. D.  
Cambrian fossils, Eagle-Circle district: Cairnes 1914b; Mertie 1937b.

## C

### Cambrian

Brachiopods, Middle: Cooper 1936  
Upper: Ulrich and Cooper 1936, 1938  
Correlations: Howell and others 1944  
Faunas, Eagle-Circle district: Mertie 1930, 1933  
Yukon-Alaska boundary region: Cairnes 1913, 1914b.  
Yukon-Tanana region: Mertie 1937b  
Trilobites, Eagle-Circle district: Kobayashi 1935, 1936a, 1936b.  
Carboniferous  
Alaska-Yukon boundary: Cairnes 1914b

## Carboniferous—Continued

- Brachiopod spp., southeastern: Schuchert 1896  
Cape Lisburne fossils: Dall 1869; Collier 1905, 1906; Grewingk 1850; Isbister 1855.  
Cape Thompson fossils: Grewingk 1850; Hooper 1881; Isbister 1855; Kindie 1909.  
Coral sp., southeastern: Cushing 1895; Emerson 1904.  
Corals, distribution of: Hill 1948  
Corals, lower Carboniferous: Collier and others 1908; Eichwald 1871.  
Facies, northern Alaska: Dutro, Bowsher, and Brosge 1951.  
Faunas and correlation: Willis 1912; Dall 1896  
Fauna, lower Carboniferous: Girty 1905  
Derbyshire limestone equivalent: Buckland 1839.  
Fossil lists, Carboniferous, upper: Capps 1916; Spurr 1898.  
Carboniferous, upper[?]: Brooks 1900b; Prindle 1913a; Prindle and Hess 1906.  
Carboniferous, lower, northern: Schrader 1904.  
Porcupine Creek, southeastern: Wright 1904  
Southeastern: Wright and Wright 1908  
Tahkandit "series": Emmons 1898  
Wellesley formation: Brooks 1900a; Mertie 1931.  
Gschelian equivalents[?]: Girty 1927; Kindie 1907; Moffit and Knopf 1910; Willis 1912.  
Plants, Alaska Peninsula: Eichwald 1871; Goepfert 1861; Grewingk 1850; Hollick 1936; Knowlton 1896.  
Questionable locality: Knowlton 1894  
Rocks, Carboniferous, upper[?]: Chapin 1918  
Southeastern: Moffit 1914; Knopf 1912a, 1912b; Spencer 1906.  
Seward Peninsula, Cape Mountain localities: Fay 1907.  
Sowik limestone fossils: Smith 1910
- Cephalopoda**  
*Alaskoceras*, n. gen.: Flower 1946; Miller and Kummel 1945.  
Ordovician spp., Lower, Seward Peninsula: Flower 1941a, b; Ulrich and others 1944.
- Coelenterata**  
Coral faunas, compilation: Bassler 1950  
Lisburne formation: Schrader 1904  
Devonian corals and stromatoporoids, northern: Dutro 1951.  
Devonian coral, Middle, southeastern: Stevenson 1893.  
Devonian coral spp., Porcupine valley: Meek 1867; S. Smith 1945.  
Carboniferous corals, Cape Lisburne: Eichwald 1871.  
Faunal lists, Middle Devonian: Moffit 1938b  
Middle and Upper Ordovician: Troedsson 1929  
Upper Ordovician: Foerste 1924  
*Halysites*, Middle Silurian: Teichert 1937  
*Lithostrotionella*, n. sp.: Hayasaka 1936; Shimer and Shrock 1944.  
Lithostrotionid corals, Mississippian: Buckland 1839; Collier and others 1908; Hill 1948.  
*Lonsdaleia* sp., southeastern: Cushing 1895; Emerson 1904.  
Mississippian corals, international boundary: Maddren 1912.  
Seward Peninsula: Steidtmann and Cathcart 1922.  
*Palaocyclus kirbyi*, Porcupine valley: Bassler 1937; Meek 1867.  
*Sciophyllum*, n. gen., Mississippian: Harker and McLaren 1950.  
Silurian *Catenipora*, southeastern: Isbister 1855  
Tabulates, Middle Devonian: Prindle and Hess 1906.
- Cooper, G. A.  
Cambrian brachiopods, Eagle-Circle district: Mertie 1937b.
- Correlation**  
Alaska-Yukon boundary region: Cairnes 1914a, b  
Cambrian, Eagle-Circle district: Howell 1944  
Upper: Kobayashi 1935, 1936b  
Carboniferous: Moffit and Mertie 1923  
Carboniferous and Permian: Girty 1905, 1909, 1927; Leffingwell 1919.  
Devonian: Cooper and others 1942  
Devonian corals, Upper: S. Smith 1945  
Devonian faunas, northern: Dutro 1951  
Devonian and Mississippian faunas, northern: Dutro 1953.  
General: Brooks 1902a, 1906; Bruet 1945; Kirk 1929; Mertie 1926, 1930, 1933, 1937b; Schuchert 1896; Smith 1939; Willis 1912.  
Late Paleozoic, Alaska-British Columbia: Case 1919.  
Mississippian: Kindie 1909; Prindle 1909; Weller and others 1948; Williams 1946.  
Mississippian and Permian: Williams 1941  
Ordovician and Cambrian, Eagle-Circle district: Kobayashi 1936a.  
Ordovician and Devonian fossils, southwestern: Eakin 1918.  
Pennsylvanian: Moore and others 1944  
Permian: King 1930; Martin 1926; Mendenhall 1905; Williams 1942, 1947.  
Silurian: Swartz and others 1942  
Silurian, Upper: Kirk and Amsden 1952  
Upper Yukon region: Brooks and Kindie 1908
- D
- Devonian**  
Alaska-Yukon boundary region: Cairnes 1914b  
Brachiopod spp., southeastern: Schuchert 1896  
Coral fauna: Bassler 1950  
Corals, Porcupine valley: Meek 1867; S. Smith 1945.  
Yukon-Tanana: Prindle and Hess 1905  
Faunal summary: Dall 1896  
Fossil lists, Alaska Range: Moffit 1915  
Eagle-Circle district: Mertie 1930, 1933  
Lower and Middle: Prindle and Hess 1906  
Middle: Capps 1916; Eakin 1918; Kindie 1908a  
Middle and Upper: Buddington and Chapin 1929; Kindie and Burling 1914.  
Northern: Smith 1913  
Seward Peninsula: Mendenhall 1902  
Southeastern: Kindie 1907; Willis 1912; Wright and Wright 1908; Knopf 1912b.  
Southwestern: Mertie 1937a; Smith 1917; Spurr 1900; Spurr and Post 1899.  
Fragmentary fossils, Yukon-Tanana: Eakin 1914  
Middle Devonian coral, southeastern: Brooks 1902a, b; Stevenson 1893.  
Middle Devonian[?]: Brooks 1911; Mertie and Harrington 1924; Prindle 1913a; Martin 1922.  
Middle and Upper Devonian fauna, northern: Dutro 1951.  
Plants, "Tahkandit series": Emmons 1898  
Porcupine valley fossils: Meek 1867  
"Portage" fauna, Eagle-Circle district: Kindie 1919.  
Questionable age assignments: Brown 1924; Collier 1902; Smith and Eakin 1911.  
Rocks, Middle Devonian: Capps 1833; Buddington 1923.  
Northern: Gryc 1951  
South-central: Moffit 1941  
Upper Devonian fauna: Dutro 1953; Prindle 1908; Smith and Mertie 1930.



## Devonian—Continued

Wellesley formation fauna: Brooks 1900a  
 "West Fork series" fossils, northern: Schrader  
 1900.

## E

## Eagle-Circle district [16]

Brachiopods, Middle Cambrian: Cooper 1936  
 Cambrian and Ordovician faunas: Kobayashi  
 1936a.  
 Cambrian, correlation: Howell and others 1944  
 Cambrian faunas, Upper: Kobayashi 1935, 1936b  
 Cambrian fossils: Cairnes 1913  
 Carboniferous fossils: Prindle 1909  
 Devonian fauna, Upper: Kindle 1919  
 Nation River formation, age of: Moore and  
 others 1944.  
 Permian rocks, correlation: Williams 1947  
 Stratigraphy and faunal lists: Cairnes 1914a, b;  
 Kindle and Burling 1914; Mertie 1930, 1933.  
 Stratigraphic summary: Wedow 1954  
 "Tahkandit series" fossils: Emmons 1898; Spurr  
 1898.

## Echinodermata

*Cliothrocinus*, Pennsylvanian[?] genus: Bassler  
 and Moodey 1943; Kirk 1937a, b; Moore and  
 Laudon 1943.

## F

## Formations

Calico Bluff formation: Brooks and Kindle 1908;  
 Mertie 1930, 1933, 1937b; Prindle 1909.  
 Chitstone limestone: Mendenhall and Schrader  
 1903.  
 "Fickett series": Schrader 1902  
 Lisburne limestone: Bowsher and Dutro 1950;  
 Collier 1905, 1906; Gryc 1951; Harker and  
 McLaren 1950; Leffingwell 1919; Schrader  
 1902, 1904; Smith 1913; Smith and Mertie  
 1930; Willis 1912.  
 Mankomen formation: Mendenhall 1905; Moffit  
 1912, 1938b.  
 Nation River formation: Brooks and Kindle 1908;  
 Mertie 1930, 1933, 1937b; Moore and others  
 1944; Prindle 1909.  
 Nicolai greenstone: Mendenhall and Schrader 1903  
 Noatak sandstone: Dutro 1953; Gryc 1951; Smith  
 1913; Smith and Mertie 1930.  
 "Nome series": Brooks and others 1901  
 Port Clarence limestone: Collier 1902; Collier  
 and others 1908; Hume 1925; Kindle 1911;  
 Knopf 1908; Teichert 1937; Willis 1912.  
 Rampart group: Willis 1912  
 Sadlerochit formation: Gryc 1951; Leffingwell  
 1919; Smith 1939.  
 Salmontrout limestone: Cooper and others 1942;  
 Kindle 1908a; Willis 1912.  
 Sowik limestone: Smith 1910  
 Strelna formation: Moffit 1938a; Moffit and Mertie  
 1923.  
 Tahkandit limestone: Mertie 1930, 1933, 1937b  
 "Tahkandit series": Emmons 1898; Spurr 1898  
 "Takotna [Tachatna] series": Martin 1922; Spurr  
 1900.  
 Tatalina group: Prindle 1913a  
 Tatina group: Brooks 1911  
 Tonzona group: Brooks 1911; Prindle 1913a  
 Wellesley formation: Brooks 1900a; Mertie 1931

## Fusulinidae

"Fusulina", Permian form: Brooks 1900b  
*Parofusulina alaskensis*, n. sp.: Dunbar 1946  
 "Schwagerina", south-central: Moffit 1933

## Gastropoda

*Bathmopterus*, n. gen.: Kirk 1928; Knight 1941;  
 Shimer and Schrock 1944.  
 Glacier Bay, southeastern: Cushing 1892  
 Port Clarence limestone fauna, Ordovician:  
 Knopf 1908.  
 Girty, G. H.  
 Calico Bluff formation fauna, Eagle-Circle:  
 Mertie 1937b; Prindle 1909.  
 Carboniferous corals, lower, Seward Peninsula:  
 Collier and others 1908.  
 Carboniferous fossils, Canning River area:  
 Leffingwell 1919.  
 International boundary: Cairnes 1914b; Mad-  
 dren 1912.  
 Lower, Cape Lisburne: Collier 1906  
 Questionable: Moffit 1914  
 Southeastern: Buddington and Chapin 1929;  
 Wright 1904; Wright and Moffit 1908.  
 Upper: Capps 1916  
 Yukon-Tanana: Prindle and Hess 1906  
 Devonian fossils, northern: Schrader 1904  
 Lisburne limestone fauna, northern: Mertie  
 1927; Smith 1913; Smith and Mertie 1930.  
 Mankomen formation fauna, Permian: Moffit  
 1912, 1938b.  
 Mississippian, general: Moffit 1918; Smith 1913;  
 Smith and Mertie 1930; Willis 1912.  
 Upper, Seward Peninsula: Steidtmann and  
 Cathcart 1922.  
 Mississippian and Permian faunas: Mertie 1930,  
 1937b; Moffit 1938a.  
 Ordovician fossils, Lower, Seward Peninsula:  
 Brooks and others 1901.  
 Permian fossils: Brown 1924; Eakin 1918a, 1919;  
 Mertie 1938; Moffit 1933; Moffit and Knopf  
 1910; Prindle 1913b; Ross 1933.  
 Permian, southwestern: Mertie 1938; Smith 1939  
 Pybus Bay fossils, southeastern: Wright 1906  
 Strelna formation fauna, south-central: Moffit  
 and Mertie 1923.  
 "West Fork series" fossils, northern: Schrader  
 1900.

## Graptolithina

Clinton fauna: Swartz and others 1942  
 Ordovician and Silurian faunas, southeastern:  
 Buddington 1923; Buddington and Chapin 1929.  
 Ordovician and Silurian spp., descriptions: Rue-  
 demann 1947.  
 Ordovician fauna, Alaska Range: Brooks 1911;  
 Willis 1912.  
 Ordovician, Lower, southeastern: Kirk 1918a  
 Ordovician(?) fossils, Eagle-Circle: Wedow  
 1954.  
 Silurian fauna, Middle or Upper: Kindle 1908a  
 Undated fossils, Yukon-Alaska boundary: Cairnes  
 1913.

## H

Henbest, L. G.  
 Pennsylvanian, southeastern: Kirk 1937a

## K

Kirk, E.  
*Bathmopterus*, Silurian gastropod: Knight 1941  
*Cliothrocinus*, Pennsylvanian[?] crinoid: Bass-  
 ler and Moodey 1943.

## Kirk, E. —Continued

- Devonian fossils: Eakin 1914; Mertie 1937a; Moffit 1915.
- Lower Paleozoic fossils: Brown 1924; Mertie 1930, 1937b.
- Middle Devonian fossils: Capps 1916; Mertie 1918; Moffit 1938b.
- Ordovician and Devonian fossils: Eakin 1918
- Ordovician and Silurian fossils, Seward Peninsula: Steidtmann and Cathcart 1922.
- Silurian and Devonian fossils: Buddington and Chapin 1929; Burchard 1913; Mertie 1923; Smith and Mertie 1930.
- Silurian correlations: Swartz and others 1942
- Southeastern Devonian: Buddington 1923; Smith 1915.
- Kindle, E. M.
- Carboniferous(?) fossils, Seward Peninsula: Smith 1910.
- Devonian fossils, Alaska-Yukon boundary: Cairnes 1914b.
- Northern: Smith 1913
- Southeastern: Smith 1915
- Yukon-Tanana: Prindle 1913b
- Faunas and correlation: Willis 1912
- Port Clarence limestone fauna: Knopf 1908
- Silurian and Devonian fossils, Seward Peninsula: Smith and Eakin 1911.
- Southeastern: Wright and Wright 1908
- Yukon-Tanana: Prindle 1908; Prindle and Hess 1906.
- Kobayashi, T.
- Cambrian trilobites, Eagle-Circle: Mertie 1937b

## L

## Localities, major

- Admiralty Island [38]: Buddington and Chapin 1929; Wright 1906.
- Bremner region: (see Hanagita-Bremner region)
- Broad Pass (central Alaska Range) [20]: Moffit 1915.
- Brooks Range, central [3]: Bowsher and Dutro 1950; Schrader 1902, 1904; Smith and Mertie 1930.
- Brooks Range, western [2]: Dutro 1951; Smith 1913; Smith and Mertie 1930.
- Canada-Alaska boundary (north of Porcupine valley) [7]: Harker and McLaren 1950; Hayasaka 1936; Maddren 1912.
- Canning River district [6]: Leffingwell 1919
- Cape Aklek (Puale Bay) [34]: Eichwald 1871; Goeppert 1861; Hollick 1936; Knowlton 1896.
- Cape Lisburne area (includes Cape Thompson) [1]: Buckland 1839; Collier 1905, 1906; Collier and others 1908; Dall 1869; Etheridge 1878; Grewingk 1850; Hill 1938; Hooper 1881; Isbister 1855; Kindle 1909; Willis 1912.
- Cape Mountain (Seward Peninsula) [9]: Fay 1907; Knopf 1909; Steidtmann and Cathcart 1922.
- Cape Thompson: (see Cape Lisburne area)
- Chandalar district [4]: Mertie 1923
- Chandalar-Koyukuk district: (see Chandalar district) Schrader 1900.
- Chitina valley [30]: Moffit 1918, 1938a
- Chulita River [19]: Ross 1933
- Circle district: (see Eagle-Circle district)
- Copper River region, north-central [2]: Mendenhall 1905.
- Cosna-Nowitna area [13]: Eakin 1916b
- Eagle-Circle district [16]: Brooks and Kindle 1908; Cairnes 1913, 1914a, 1914b; Cooper 1936; Howell and others 1944; Kindle 1919; Kobayashi 1935, 1936a, 1936b; Mertie 1930, 1933, 1937b; Moore and others 1944; Prindle 1909, 1913b; Spurr 1898; Wedow 1954; Williams 1947; Ulrich and Cooper 1936, 1938.
- Localities, major—Continued
- Fairbanks-Rampart area [14]: Prindle 1908, 1913a; Prindle and Hess 1905, 1906; Willis 1912.
- Freshwater Bay, Chichagof Island [37]: Buddington and Chapin 1929; Kindle 1907; Knopf 1912b; Willis 1912.
- Glacier Bay [36]: Brooks 1902a, 1902b; Buddington and Chapin 1929; Cushing 1892, 1895; Emerson 1904; Kirk 1928; Reid 1896; Stevenson 1893.
- Gulkana and Susitna Rivers (headwaters) [21]: Moffit 1912.
- Hanagita-Bremner region [29]: Moffit 1914
- Heceta Island [43]: Burchard 1913; Kindle 1907; Kirk 1918b, 1922, 1926; Kirk and Amsden 1952; Swartz and others 1942.
- Ketchikan district [46]: Chapin 1918; Smith 1915
- Kosciusko Island [42]: Kirk 1922, 1926, 1927b; Kirk and Amsden 1952; Swartz and others 1942.
- Kotsina-Kuskulana district [28]: Moffit and Mertie 1923.
- Kuiu Island [41]: Bassler and Moodey 1943; Buddington and Chapin 1929; Dunbar 1948; Kindle 1907, 1908b; Kirk 1937a, 1937b; Schuchert 1896.
- Kuskulana district: (see Kotsina-Kuskulana district).
- Lime Hills [27]: Smith 1917
- Livingood area [15]: Mertie 1918, 1937b
- Mount McKinley region [18]: Brooks 1911; Capps 1933.
- Mount Wrangell district (see Chitina valley): Mendenhall and Schrader 1903.
- Nixon Fork area [17]: Brown 1924; Martin 1922; Mertie and Harrington 1924; Spurr 1900; Spurr and Post 1899.
- Nizina River, upper [31]: Moffit, 1928
- Nowitna area: (see Cosna-Nowitna area)
- Nushagak district [33]: Mertie 1938
- Nutzotin Mountains [26]: Moffit 1943
- Porcupine Creek (southeastern Alaska) [35]: Eakin 1918a, 1919; Wright 1904.
- Porcupine valley [8]: Bassler 1937, 1950; Brooks and Kindle 1908; Cairnes 1914a, 1914b; Cooper and others 1942; Kindle 1908a, 1908b; Meek 1887; Smith, S. 1945; Swartz and others 1942; Troedsson 1929; Willis 1912.
- Prince of Wales Island [44]: Buddington and Chapin 1929; Hayasaka 1936; Kindle 1907; Kirk 1918b, 1927a; Moore and others 1944; Wright 1915.
- Ramparts area: (see Fairbanks-Rampart area)
- Ruby area [12]: Eakin 1914; Mertie 1937a; Mertie and Harrington 1924.
- Seward Peninsula, eastern [11]: Smith and Eakin 1911; Willis 1912.
- Seward Peninsula, western [10]: Brooks and others 1901; Collier 1902; Flower 1941a, 1941b, 1946; Foerste 1924; Hume 1925; Kindle 1911; Kirk 1929; Knopf 1908; Mendenhall 1902; Miller and Kummel 1945; Smith 1910; Steidtmann and Cathcart 1922; Teichert 1937; Troedsson 1929; Ulrich and others 1944; Willis 1912.
- Sheenjek district [5]: Mertie 1927
- Sitka district [40]: Isbister 1855
- Slana district [23]: Moffit 1929
- Slana-Tok district [24]: Moffit 1938b
- Susitna River: (see Gulkana and Susitna Rivers)
- Susitna Pass district: (see Slana-Tok district) Moffit 1933.
- Taku Harbor (southeastern Alaska) [39]: Knopf 1912a; Spencer 1906.
- Tanana valley, upper [25]: Brooks 1900a; Mertie 1931, 1937b; Moffit and Knopf 1910.
- Tetling River district: (see Slana-Tok district) Moffit 1941.

## Localities, major—Continued

- Tok district: (see Slana-Tok district)  
 White River, upper [32]: Brooks 1900b; Capps 1916; Moffit and Knopf 1910; Willis 1912.  
 Wrangell district [45]: Buddington 1923; Kirk 1918a.

## M

## Mississippian

- Calico Bluff formation fauna, Eagle-Circle: Mertie 1930, 1933, 1937b; Prindle 1909.  
 Cape Mountain rocks, Seward Peninsula: Knopf 1909.  
 Cape Thompson locality, northern: Kindle 1909  
 Coral faunal lists: Bassler 1950  
 Correlation: Weller and others 1948; Williams 1941.  
 Formations, northern: Gryc 1951  
 Fossil lists, northern: Smith 1913; Smith and Mertie 1930.  
 Porcupine valley: Kindle 1908a  
 South-central: Moffit 1918, 1938a; Moffit and Mertie 1923.  
 Southeastern: Buddington and Chapin 1929; Kindle 1907.  
 International boundary, northern: Maddren 1912  
 Lisburne limestone fossils, northern: Leffingwell 1919; Mertie 1927.  
 Lithostrotionid corals: Harker and McLaren 1950; Hayasaka 1936; Shimer and Schrock 1944.  
 Lower Mississippian faunas, northern: Dutro 1953.  
 Northern Alaska, stratigraphy: Bowsher and Dutro 1950.  
 Plants, lower Mississippian: Collier 1906; White 1909.  
 Southeastern: Williams 1946  
 Upper Mississippian corals, Seward Peninsula: Steidtmann and Cathcart 1922.

## N

## Northern Alaska [I]

- Cape Lisburne coral locality: Hill 1948  
 Cape Lisburne fossils: Dall 1869; Grewing 1850.  
 Cape Thompson fossil locality: Hooper 1881  
 Carboniferous corals: Eichwald 1871  
 Carboniferous facies: Dutro, Bowsher, and Brosgå 1951.  
 Carboniferous fossils: Buckland 1839; Collier 1905, 1906; Etheridge 1878; Isbister 1855; Leffingwell 1919; Maddren 1912; Schrader 1902.  
 Devonian faunas: Dutro 1951  
 Devonian and Mississippian faunas: Dutro 1953  
 Formations, late Paleozoic: Gryc 1951  
 Fossil lists, Devonian(?): Schrader 1900  
 Mississippian: Smith 1913  
 Silurian and Devonian: Mertie 1923  
 Silurian, Devonian, and Carboniferous: Schrader 1904; Smith and Mertie 1930.  
 Silurian and Mississippian: Mertie 1927  
 Lithostrotionid coral, Mississippian: Harker and McLaren 1950; Hayasaka 1936.  
 Mississippian stratigraphy: Bowsher and Dutro 1950.

## O

## Ordovician

- Alaska-Yukon boundary: Cairnes 1914b

## Ordovician—Continued

- Brachiopod sp., Lower: Ulrich and Cooper 1936; 1938.  
 Cephalopoda, Lower: Flower 1941a, b, 1948; Miller and Kummel 1945; Ulrich and others 1944.  
 Coral faunas, Middle and Upper: Troedsson 1929  
 Upper: Foerste 1924  
 Fossil lists, Eagle-Circle: Mertie 1933  
 Lower: Steidtmann and Cathcart 1922  
 Lower and Middle: Buddington and Chapin 1929  
 Porcupine valley: Kindle 1908a; Willis 1912  
 Port Clarence limestone: Collier 1902; Collier and others 1908; Hume 1925; Knopf 1908; Willis 1912.  
 Upper: Brown 1924; Eakin 1918; Miller and others 1954; Prindle 1913b.  
 Yukon-Tanana: Mertie 1937b  
 Graptolite faunas: Ruedemann 1947  
 Lower: Kirk 1918a  
 Tatina group: Brooks 1911; Willis 1912  
 Questionable age: Wedow 1954  
 "Pogonip age" fossils, Seward Peninsula: Brooks and others 1901.  
 Port Clarence faunal equivalents: Kindle and Burling 1914.  
*Symphysurina* fauna, Eagle-Circle: Kobayashi 1936a.  
 Ostracoda  
*Cytherella*, Yukon-Tanana: Prindle and Hess 1906.  
*Leperditia*, southeastern: Cushing 1892

## P

## Pelecypoda

- Buchiola*, Eagle-Circle: Kindle 1919  
*Megalomus* sp., Silurian: Prindle 1908; Shimer and Schrock 1944; Smith and Eakin 1911; Willis 1912.  
*Pycnodosma*, n. gen.: Kirk 1927c  
 Pennsylvanian  
*Clithrocrinus*, southeastern: Bassler and Moodey 1943; Kirk 1937a, b.  
 Correlation, age uncertain: Moore and others, 1944.  
 Fossil lists, age uncertain  
 Porcupine valley: Kindle 1908a  
 Southeastern: Buddington and Chapin 1929  
 Yukon-Tanana: Prindle and Hess 1906  
 Permian  
 Artinskian faunas: Brown 1924; Eakin 1918a, 1919; Girty 1927; Martin 1926.  
 Questionable: Buddington and Chapin 1929  
 Artinskian fusulinids, southeastern: Dunbar 1946  
 Correlation: King 1930; Williams 1941, 1942, 1947.  
 Formations, northern: Gryc 1951  
 Fossil lists, south-central: Moffit 1933, 1938a; Moffit and Knopf 1910; Ross 1933.  
 Southeastern, Pybus Bay: Wright 1906  
 Southwestern: Mertie 1938; Smith 1939  
 Yukon-Tanana: Prindle 1913b  
 "Hueconian" fauna, correlation with: Girty 1905, 1909.  
 International boundary faunas: Maddren 1912  
 Mankomen formation fauna: Mendenhall 1905; Moffit 1938b;  
 Nicolai greenstone: Mendenhall and Schrader 1903.  
 Rocks, south-central: Moffit 1928, 1929, 1941, 1943.  
 Southeastern: Williams and Reed 1946  
 Sadlerochit formation fauna, northern: Leffingwell 1919; Smith 1939.

## Permian—Continued

Tahkandit limestone fauna, Eagle-Circle: Mertie 1930, 1933, 1937b.

## Plants

Carboniferous, Alaska Peninsula: Eichwald 1871; Goepfert 1861; Grewingk 1850; Hollick 1936; Knowlton 1896.

Carboniferous locality, age questioned: Isbister 1855; Knowlton 1894.

Devonian, Eagle-Circle: Spurr 1898

Mississippian, lower, Cape Lisburne region: Collier 1905, 1906; Kindle 1909; Smith and Mertie 1930; White 1909.

Nation River flora: Mertie 1930; Prindle 1909 Porcupine valley [8]

Corals, Upper Devonian: Bassler 1950; S. Smith 1945.

Devonian fossils: Meek 1867

Graptolite fauna, Clinton age: Swartz and others 1942.

Lithostrotionid coral, Mississippian: Hayasaka 1936.

Ordovician fauna: Troedsson 1929

Salmontrout limestone, Devonian: Cooper and others 1942; Kindle 1908a.

Silurian fauna: Kindle 1908b

Stratigraphy and faunal lists: Brooks and Kindle 1908; Kindle 1908a.

## R

## Resser, C. D.

Cambrian correlation: Howell and others 1944

Cambrian fauna, Middle and Upper: Mertie 1930

Cambrian trilobites: Mertie 1937b

## Ruedemann, R.

Graptolite faunas, Ordovician and Silurian: Buddington and Chapin 1929.

## S

## Schuchert, C.

Carboniferous fauna, upper(?): Brooks 1900b

Devonian fossils, Middle, southwestern: Spurr 1900.

Mankomen formation fauna, south-central: Mendenhall 1905; Moffit 1938b.

Northern Alaska fossils, general: Schrader 1902

Ordovician and Devonian faunas, Alaska Range: Brooks 1911.

Permian fossils, south-central: Moffit 1933

Port Clarence limestone fauna, Seward Peninsula: Collier 1902; Collier and others 1908.

Silurian and Devonian fossils: Brooks 1900a, b; Schrader 1904.

"Tahkandit series" fauna, Eagle-Circle: Spurr 1898.

Wellaev formation fossils. Yukon-Tanana: Brooks 1900a.

## Seward Peninsula [II]

Cephalopods, Lower Ordovician: Flower 1941a, b, 1946; Miller and Kummel 1945; Ulrich and others 1944.

Coral faunas, Upper Ordovician: Foerste 1924

Faunas, Ordovician: Troedsson 1929

Fossil localities, undated: Fay 1907

Ordovician fossils, Lower, "Nome series": Brooks and others 1901.

Ordovician gastropods, Port Clarence limestone: Knopf 1908.

## Seward Peninsula [II]—Continued

Port Clarence limestone faunas, Ordovician: Collier 1902; Collier and others 1908; Hume 1925; Kindle 1911; Teichert 1937.

Silurian and Devonian fossils: Mendenhall 1902; Smith and Eakin 1911.

Silurian corals, fossil lists: Bassler 1950

Silurian pelecypod, Upper: Kirk 1927c

Sowik limestone fossils, Carboniferous(?): Smith 1910.

York district fossils, Mississippian: Knopf 1909; Steidtmann and Cathcart 1922.

## Silurian

Alaska-Yukon boundary: Cairnes 1914b; Kindle and Burling 1914.

Brachiopoda, Upper: Kirk 1922, 1926, 1927a; Kirk and Amsden 1952.

Coral, southeastern: Isbister 1855

Coral faunas, general: Bassler 1950

Middle: Teichert 1937

Correlation: Swartz and others 1942

Fossil lists, Baldy Mountain locality[?]: Collier 1902.

Eagle-Circle: Mertie 1930, 1933

Nixon Fork area: Brown 1924

Northern: Mertie 1923, 1927; Schrader 1904; Smith and Mertie 1930.

Porcupine valley: Kindle 1908a

Seward Peninsula: Collier and others 1908; Mendenhall 1902; Steidtmann and Cathcart 1922.

Southeastern: Brooks 1902a, b; Buddington and Chapin 1929; Burchard 1913; Kindle 1907; Knopf 1912b; Willis 1912; Wright and Wright 1908.

Yukon-Tanana: Mertie 1937b; Prindle 1908, 1913a; Prindle and Hess 1906.

Gastropoda, Upper: Kirk 1928; Knight 1941

Graptolite faunas: Ruedemann 1947

*Lichas* fragment, southeastern: Eichwald 1871

Niagara fauna equivalents: Kindle 1908b; Kirk 1918b; Willis 1912.

Pelecypoda: Kirk 1927c; Prindle 1908; Shimer and Schrock 1944; Smith and Eakin 1911.

## South-central Alaska [VI]

Carboniferous fauna, upper(?): Brooks 1900b

Devonian and Permian fossils: Moffit 1938b

Devonian and Permian rocks: Moffit 1941

Middle Devonian and Carboniferous fossils: Capps 1916.

Mississippian fossils: Moffit 1918; Moffit and Mertie 1923.

Mississippian and Permian fossils: Moffit 1938a

Permian fossils: Moffit 1933; Moffit and Knopf 1910.

Permian rocks: Mendenhall and Schrader 1903; Moffit 1928, 1929, 1943.

## Southeastern Alaska [VIII]

Carboniferous coral: Cushing 1895; Emerson 1904.

Carboniferous fossils: Knopf 1912a; Reid 1896; Spencer 1906; Wright 1904, 1906.

Questionable: Moffit 1914

Carboniferous rocks, upper[?]: Chapin 1918

Devonian and Carboniferous brachiopods: Schuchert 1896.

Devonian coral, Middle: Stevenson 1893

Devonian correlations: Cooper and others 1942

Devonian fauna, Middle: Buddington 1923; Kirk 1927a.

Devonian fossils: Smith 1915

Glacier Bay fossils: Cushing 1892

Graptolite fauna, Lower Ordovician: Kirk 1918a

Graptolitic beds: Buddington 1923

Lithostrotionid coral, Mississippian: Hayasaka 1936.

Mississippian faunas: Williams 1946

## Southeastern Alaska [VIII]—Continued

- Pennsylvanian[?] crinoid: Bassler and Moodey 1943; Kirk 1937a, b.  
 Pennsylvanian[?] limestone at Soda Bay: Moore and others 1944.  
 Permian faunas: Eakin 1918a, 1919; Girty 1927  
 Permian fusulinid, Kuiu Island: Dunbar 1946  
 Silurian brachiopods: Kirk 1922, 1928, 1927b; Kirk and Amsden 1952.  
 Silurian coral: Isbister 1855  
 Silurian correlations: Swartz and others 1942  
 Silurian faunas: Burchard 1913; Kindle 1908a; Kirk 1918b.  
 Silurian gastropod: Kirk 1928; Knight 1941  
 Silurian pelecypod: Kirk 1927c  
 Silurian and Devonian fossils: Brooks 1900a, b  
 Stratigraphy and faunal lists: Buddington and Chapin 1928; Kindle 1907; Wright and Wright 1908.  
 Southwestern Alaska [IV]  
 Devonian fossils: Eakin 1914; Mertie 1937a; Mertie and Harrington 1924; Spurr and Post 1899.  
 Faunas, Nixon Fork area: Brown 1924  
 Middle Devonian fossils: Spurr 1900  
 Ordovician and Devonian fossils: Eakin 1918  
 Permian fossils: Mertie 1938  
 Rocks, Devonian(?): Martin 1922; Smith 1917

## T

## Trilobita

- Briscoia* fauna, Eagle-Circle: Kobayashi 1935, 1936b.  
 Cambrian zones, Upper, correlation: Howell and others 1944.  
 Cape Thompson locality, Carboniferous: Hooper 1881.  
 Carboniferous, Derbyshire limestone age: Buckland 1839.  
*Cyphospira* and *Proetus*: Shimer and Schrock 1944  
*Lichas* fragment, southeastern: Eichwald 1871  
 Ordovician and Cambrian fossils, Eagle-Circle: Kobayashi 1936a.

## U

- Ulrich, E. O.  
 Lower Ordovician fossils, Seward Peninsula: Steidtmann and Cathcart 1922.  
 Port Clarence limestone fossils, Seward Peninsula: Collier and others 1908.

## W

- Walcott, C. D.  
 Lower Ordovician fossils, Seward Peninsula: Steidtmann and Cathcart 1922.  
 White, D.  
 Devonian flora, Yukon-Tanana: Spurr 1898  
 Lower Mississippian flora, northern: Collier 1906; Kindle 1909; Smith and Mertie 1930.  
 Nation River formation flora, Eagle-Circle: Mertie 1930, 1937b; Prindle 1909.  
 Williams, H. S.  
 Carboniferous coral, southeastern: Cushing 1895; Emerson 1904.  
 Glacier Bay fossils, southeastern: Cushing 1892  
 Williams, J. Steele  
 Mississippian correlations: Weller and others 1948.  
 Pennsylvanian correlations: Moore and others 1944.

## Y

## Yukon-Tanana [III]

- Correlation, railroad belt: Capps 1940  
 Devonian corals: Prindle and Hess 1905  
 Devonian fossils, Middle: Mertie 1918  
 Faunas, Ordovician: Troedsson 1929  
 Silurian pelecypod, Upper: Kirk 1927c  
 Stratigraphy and fossil lists: Brooks and Kindle 1908; Mertie 1937b; Prindle 1908, 1913a, b; Prindle and Hess 1906.  
 Wellesley formation fossils: Brooks 1900a; Mertie 1931.