APPENDIX

LOCALITY REGISTER OF SIGNIFICANT FOSSIL COLLECTIONS

Locality numbers are keyed to indicated figures in the text. Samples collected from measured sections are identified as such; all others are individual samples for which stratigraphic position within unit is unknown, uncertain, or estimated. Outcrop lithologies provided by collectors; thin section descriptions by J.A. Dumoulin. For samples collected by J. Toro (field no. JT), all conodonts were identified by J.E. Repetski. For all other samples, unless otherwise stated, Cambrian and Early Ordovician conodonts and other phosphatic microfossils identified by J.E. Repetski and A.G. Harris; other conodonts identified by A.G. Harris; corals and stromatoporoids identified by W.A. Oliver, Jr.; and brachiopods identified by J.T. Dutro, Jr. CAI, conodont color alteration index of Epstein et al. (1977) and Rejebian et al. (1987). Old stage and series names in Flower (1968) and Sainsbury (1969b) have been updated: Ibexian has replaced Canadian, and Tremadocian has replaced Gasconade. For the Ordovician, British series Tremadoc through Ashgill were used in the original age assignments reported below; these series, as well as modern global stages Tremadocian through Hirnantian, are shown in Figures 4, 8, 16, and 17.

WESTERN SEWARD PENINSULA, YORK TERRANE

York Succession

*Oal unit of Sainsbury (1969b) and Till et al. (2011)*

1 (Figs. 4, 5). USGS colln. 11961-CO (field no. 02JT17); lat 65°27.39'N., long 167°18.31'W., Teller B-5 quadrangle; lower part of Oal unit. Thin-bedded, orange-weathering limestone; thin section is loosely packed grainstone with intraclasts, peloids, trilobite fragments, and crinoid debris. Conodonts: “Acanthodus” lineatus (Furnish), *Loxodus bransoni* Furnish, and *Variabiloconus bassleri* (Furnish). Age: early Early Ordovician (*Rossodus manitouensis* Zone). CAI: 5-5.5.

3 (Fig. 5, Plate 1). Field nos. 7-23-84A-K (conodonts), 84ADn121 (lithology). Measured section, 187 m thick; begins 42 m west of the mouth of Koteebe Creek and then proceeds north along the creek bed. In lower part of Oal unit, lat 65°24.50'N., long 167°17.60'W. (at mouth of creek), Teller B-5 quadrangle. Of 11 samples taken for conodonts, 9 were productive; only the most biostratigraphically diagnostic collections are listed. Age (all collections): middle Early Ordovician (“Low Diversity Interval” to *Macerodus dianae* Zone). CAI (all conodonts): 4. (1) USGS colln. 10231-CO (7-23-84A, 121B, BB), 0.9 m above base of section; thin- to medium-bedded, medium-gray-weathering limestone that is locally laminated and cross laminated; thin section is peloidal supportstone that grades to lime mudstone and contains minor dolomite and sparse bioclasts. Conodonts: “*Acanthodus*” *lineatus* (Furnish) (Plate 1B, C), *Histiodella* aff. *H. donnæ* Repetski (Plate 1A), *Protopanderodus leei* Repetski, *Striatodontus? prolificus* Ji and Barnes, *Utahconus? longipinnatus* Ji and Barnes, and *Variabiloconus variabilis* (Lindström). (2) USGS colln. 10234-CO (7-23-84D, 121H), 70 m above base of section; medium- to thick-bedded, medium-light-gray weathering limestone; thin section is loosely packed, intraclastic grainstone with rare bioclasts. Conodonts: *Drepanoistodus* cf. *D. pervetus* Nowlan (Plate 1D, E), *Scolopodus bolites* Repetski, *S. cf. S. floweri* Repetski, and *Variabiliconus* aff. *V. bassleri* (Furnish). (3) USGS colln. 10236-CO (7-23-84F, 121K), 94 m above base of section; irregularly bioturbated, thin-bedded, orange-weathering argillaceous limestone; thin section is sparsely bioclastic lime mudstone with subordinate argillaceous lenses that contain ferric dolomite and white mica. Conodonts: “*Acanthodus*” *lineatus* (Furnish) and *Scolopodus rex* Lindström. (4) USGS colln. 10237-CO (7-23-84G), 121.3 m above base of section; irregularly bioturbated, thin-bedded, medium-light-gray to pale-yellow-orange-weathering argillaceous limestone. Conodonts: “*Acanthodus*” *lineatus* (Furnish) (Plate 1H, I), *Drepanoistodus* sp., *Histiodella* aff. *H. donnæ* Repetski (Plate 1J), *Laurentosciandodus triangularis* (Furnish), *Scolopodus floweri* Repetski (Plate 1K), *Utahconus? longipinnatus* Ji and Barnes (Plate 1F), and *Variabiloconus variabilis* (Lindström) (Plate 1G). (5) USGS colln. 10239-CO (7-23-84K), 187 m above base of section; irregularly bioturbated, partly rippled, medium-gray- to orange-weathering argillaceous limestone. Conodonts: “*Acanthodus*” *lineatus* (Furnish), *Colaptoconus* sp., *Utahconus? longipinnatus* Ji and Barnes, and *Variabiloconus variabilis* (Lindström).

4 (Fig. 5). USGS colln. 11973-CO (field no. 03JT27); lat 65°25.24'N., long 167°16.42'W., Teller B-5 quadrangle. Thin-bedded, platy, argillaceous limestone with trace fossils; thin section is peloidal-bioclastic wacke-packstone with calcareous sponge spicules, calcispheres(?), minor detrital white mica and quartz silt to very fine sand, and a burrow filled with a mix of peloidal grainstone and lime mudstone. Conodonts: *Colaptoconus quadruplicatus* (Branson and Mehl)

Ol unit of Sainsbury (1969b) and Till et al. (2011) [Note that loc. 11 below also includes information on collections from the lower part of Ols unit overlying OL.]

5 (Fig. 5, Plate 2). Field nos. 7-3-85A-G (conodonts), 85ADn30, 31 (lithology). Measured section, 140 m thick, lower to middle part of Ol unit, lat 65°25.10’N. long 167°01.50’W. (at base of section), Teller B-5 quadrangle. Upper contact of Ol unit in this area is a fault. Seven samples were collected for conodonts and all were productive; only the most biostratigraphically diagnostic collections are listed. Age (all collections): middle Early Ordovician (“Low Diversity Interval” to Macerodus dianae Zone). CAI (all conodonts): 4. (1) USGS colln. 10224-CO (7-3-85E, 31H), 43 m above base of section; medium- to thick-bedded, light-gray- to yellowish-orange-weathering limestone that has faint parallel laminations; thin section is intraclastic grainstone with irregular to rounded, poorly sorted clasts of lime mudstone, peloidal grainstone, and lesser dolomitic mudstone, and rare crinoid fragments with thin micritic rims. Conodonts: Clavohamulus n. sp. (117 specimens), Drepanoistodus pervetus Nowlan, Fryxellodontus? n. sp. (Plate 2D, E), Scolopodus floweri Repetski, Striatodontus? cf. S. prolificus Ji and Barnes, Teridontus sp., and Utahconus? longipinnatus Ji and Barnes (Plate 2A-C). (2) USGS colln. 10227-CO (7-3-85C), 73 m above base of section; medium-dark-gray lime mudstone in irregular beds ~4 cm thick with tracks, trails, and scattered small brachiopod valves. Conodonts: Drepanoistodus sp., Drepanoistodus forceps (Lindström), Fryxellodontus? n. sp., Paltodus cf. P. subaequalis Pander (Plate 2F-J), Parapanderodus striatus (Graves and Ellison), Paroistodus aff. P. amoenus (Lindström) (Plate 2K, L), Scolopodus aff. S. rex Lindström, and Utahconus? longipinnatus Ji and Barnes. (3) USGS colln. 10228-CO (7-3-85B, 30H), 90 m above base of section; irregularly medium-bedded, yellow-brown-weathering limestone with abundant tracks and trails and rare gastropods and crinoid fragments; thin section is partly bioturbated mixture of dolomitic lime mudstone to bioclastic wackestone and intraclastic supportstone, with crinoid and trilobite fragments (some with micritic rims) and clasts of lime mudstone to bioclastic wackestone. Conodonts: Drepanodus arcuatus Pander, Fryxellodontus? n. sp. (Plate 2Q-T), Paltodus subaequalis Pander, Paroistodus amoenus (Lindström), Scolopodus floweri Repetski (Plate 2N), S. rex Lindström (Plate 2M), Utahconus? longipinnatus Ji and Barnes (Plate 2O, P), Variabiloconus bassleri (Furnish), and Variabiloconus variabilis (Lindström). (4) USGS colln. 10229-CO (7-3-85A, 30A), 140 m above base of section; medium- to thick-bedded, yellowish-

6 (Figs. 4, 5, Plate 3A-D). USGS colln. 11958-CO (field no. 02JT13); lat 65°26.92’N., long 167°19.41’W., Teller B-5 quadrangle. Thin-bedded gray limestone; thin section is lime mudstone (locally peloidal wackestone) with rare bioclasts including calcareous sponge spicules. Conodonts: *Fryxellodontus*? n. sp. (Plate 3B), *Macerodus dianae* Fåhraeus and Nowlan (Plate 3C), *Paracordylodus gracilis* Lindström?, *Parapanderodus filosus* Ethington and Clark, *P. striatus* (Graves and Ellison), *Protopanderodus* sp., *Scolopodus bolites* Repetski (Plate 3D), and *Utahconus? longipinnatus* Ji and Barnes (Plate 3A). Age: Early Ordovician (*Macerodus dianae* Zone). CAI: 2.

7 (Figs. 4, 5). USGS colln. 11956-CO (field no. 02JT11); lat 65°27.24’N., long 167°20.03’W., Teller B-5 quadrangle; sample taken near top of Ol unit in this area, but upper contact here is a fault. Thin-bedded gray limestone; thin section is intraclastic-peloidal grainstone, locally grading to lime mudstone, with rare, unidentifiable bioclasts. Conodonts: *Aodus deltatus* Lindström, *Paltodus* cf. *P. inaequalis* Pander, and unassigned oistodont elements. Age: Early Ordovician (*Aodus deltatus-Oneotodus costatus* Zone). CAI: 2. Heavy mineral concentrate contains fluorite and amphibole grains.

8 (Fig. 4). Field no. 93BK42; lat 65°30.74’N., long 167°20.14’W., Teller C-5 quadrangle; lens of black shale in middle to upper part? of Ol unit. Graptolites, identified by Claire Carter, U.S. Geological Survey, unpublished fossil report (shipment O-93-M), 1994: *Tetragraptus approximatus* Nicholson and *Phyllograptus aff. P. angustifolius* J. Hall. Age Early Ordovician (early Arenig; *Tetragraptus fruticosus* Zone).

9 (Fig. 3, Plate 3E-O). Field nos. 6-30-85C, D (conodonts), 85ADn17 (lithology). Two samples from uppermost 5.5 m of Ol unit underlying Ols unit; lat 65°25.9’N., long 166°34.2’W., Teller B-4 quadrangle. Both samples produced conodonts of middle Early Ordovician (*Macerodus dianae* Zone to *Aodus deltatus-Oneotodus costatus* Zone) age that have CAI values of 4. The conodonts are older and represent a shallower, warmer-water biofacies than those obtained from the upper
part of the Ol unit at localities 10 and 11; these data, combined with the abundance of brecciated dolostone at locality 9, suggest that the upper contact of Ol here is a fault, although it was mapped as depositional by Sainsbury (1969a). (1) USGS colln. 10215-CO (6-30-85D, 17E), 5.5 m below top of Ol; partly bioturbated, fine-grained dolostone with brachiopods and gastropods; thin section is fine crystalline dolomite mosaic. Conodonts: \textit{Drepanoistodus forceps} (Lindström) (Plate 3G, H), \textit{Drepanodus arcuatus} Pander, \textit{Fryxellodontus} n. sp., \textit{Parapanderodus striatus} (Graves and Ellison) (Plate 3F), \textit{Paroistodus proteus} (Lindström) (Plate 3E), \textit{Protopanderodus} cf. \textit{P.?} n. sp. 2 of Repetski, 1982, and \textit{Scolopodus filosus} Ethington and Clark. (2) USGS colln. 10216-CO (6-30-85C, 17C), 1.5 m below top of Ol; brecciated, thick-bedded dolostone; thin section is laminated, fine crystalline dolomite mosaic with rare bioclasts. Conodonts: \textit{Drepanodus arcuatus} Pander, \textit{Paltodus} cf. \textit{P. inconstans} Lindström (Plate 3I-M), and \textit{Paroistodus parallelus} (Pander) (Plate 3N, O).

10 (Figs. 4, 5, Plate 3P-X). USGS colln. 11160-CO (field no. 93BK44); lat 65°30.67'N., long 167°19.79'W., Teller C-5 quadrangle. Limestone near top of Ol unit, which underlies Ols unit in this area. Conodonts: \textit{Acodus deltatus} Lindström (Plate 3S-X), \textit{Drepanodus arcuatus} Pander, \textit{Oepikodus} aff. \textit{O. communis} (Ethington and Clark), \textit{Paroistodus parallelus} (Pander), \textit{Pygodus} sp. (Plate 3P), \textit{Stiptognathus borealis} (Ethington, Lehnert, and Repetski) (Plate 3Q, R), \textit{Tropodus} sp., and \textit{Walliserodus} cf. \textit{W. ethingtoni} (Fåhraeus). Age: late Early Ordovician (middle Arenig; upper Tulean stage; lower \textit{O. communis} Zone). CAI: 2-2.5.

11 (not shown; Plate 4A-Q). Field nos. 7-5-85F-I (conodonts), 85ADn 36 (lithology). Measured section, 61 m thick; begins 57 m below contact of Ol and Ols units and is at Sainsbury's (1969b) fossil loc. 71, lat 65°30.75'N., long 167°22.00'W., Teller C-5 quadrangle. Conodonts, trilobites, and graptolites have been collected from this locality; all conodonts have CAI values of 2. (1) USGS colln. 10208-CO (7-5-85H, 36C), 57 m below top of Ol; medium- to massive-bedded, sparsely bioclastic, fine-grained limestone; thin section is partly bioturbated mixture of lime mudstone and peloidal grainstone with rare bioclasts including calcareous sponge spicules. Conodonts: cf. “\textit{Acanthodus}” sp., \textit{Aloxoconus} cf. \textit{A. iowensis} (Furnish), \textit{Colaptoconus quadraplicatus} (Branson and Mehl), \textit{Drepanoistodus} spp., \textit{Eucharodus parallelus} (Branson and Mehl), and \textit{Utahconus? longipinnatus} Ji and Barnes. Age: middle Early Ordovician (“Low Diversity Interval” to lower \textit{Macerodus dianae} Zone). (2) USGS colln. 10209-CO (7-5-85I, 36E), 24 m below top of Ol; irregularly medium-bedded, grayish-orange-pink, fine-grained limestone; thin section is peloidal-bioclastic wacke-packstone with pelmatozoan and trilobite fragments, calcareous spicules, and possible calcitized radiolarians. Conodonts: \textit{Drepanodus arcuatus}

12 (Figs. 3, 4, Plate 4R, S). USGS colln. 10018-CO (field no. 85AKn12); lat 65°24'N., long. 166°35.8'W., Teller B-4 quadrangle; upper part of Ol unit. Fine-grained, laminated, calcitic dolostone. Conodonts: *Drepanoistodus aff. D. forceps*, *Drepanodus arcuatus* or *Paroistodus parallelus*, *Protopanderodus gradatus* Serpagli, *Protoprioniodus aranda* Cooper (Plate 4R), and *Scolopodus gracilis* Ethington and Clark. Incertae sedis: *Milaculum* sp. (Plate 4S). Age: latest Early Ordovician-earliest Middle Ordovician (late Arenig; *Reutterodus andinus* Zone to *Tripodus laevis* Zone). CAI: 3.5-4.

14 (not shown). Field no. 62ASn633A; lat 65°34.03'N., long 167°04.08'W., Teller C-5 quadrangle; base of Ol unit. Cephalopod, identified by R.H. Flower in Sainsbury (1969b, table 3, loc. 58): *Ellesmeroceras* sp. Age: Early Ordovician (early Ibexian; Tremadocian).

15 (not shown). Teller B-5 quadrangle; near middle of Ol unit. Cephalopods, identified by R.H. Flower: (1) USGS colln. D909-CO (Flower, 1968); lat 65°28.7'N., long 167°06.2'W. *Sewardoceras tellerense* n. sp. Age: Early Ordovician (middle or late Ibexian). (2) USGS colln. D1420 (Flower, 1968; Sainsbury, 1969b); lat 65°28.5'N., long. 167°06.96'W. *Telleroceras undulatus* n. sp. Age: Early Ordovician (early Ibexian; Tremadocian).


17 (not shown). Field no. 61ASn448; lat 65°29.73'N., long 167°08.52'W., Teller B-5 quadrangle; upper part of Ol unit. Cephalopod, identified by R.H. Flower (Flower, 1968; Sainsbury, 1969b, table 3, loc. 74): *Yorkoceras discordium* n. sp. Age: late Early Ordovician (late Ibexian).

*Ols unit of Till et al. (2011)* [see also loc. 11 above for information on collections from basal part of Ols unit]

19 (Figs. 4, 5). Field nos. 7-5-85A-E (conodonts), 85ADn35 (lithology). Measured section, 183 m thick, lower part of Ols unit, lat 65°30.6'N., long 167°20.10'W., Teller C-5 quadrangle. Five samples were collected for conodonts and all were productive; only the most diagnostic samples are listed. Age: early Middle Ordovician (early Whiterockian). CAI (all conodonts): 2. (1) USGS colln. 10203-CO (7-5-85A, 35A), from base of section; laminated to thin-bedded, light-gray-weathering limestone; thin section is peloidal supportstone with rare bioclasts (including spines and calcispheres?) overlying lime mudstone. Conodonts: Oulodus? n. sp., N. gen., n. sp., and Walliserodus? sp. (2) USGS colln. 10204-CO (7-5-85B, 35D), 40.5 m above base of section; 10-cm-thick bed of medium dark gray limestone; thin section is slightly dolomitized lime mudstone with rare bioclasts (including calcareous spicules). Conodonts: Fahraeusodus marathonensis (Bradshaw), M. n. sp., Oepikodus sp., Paroistodus originalis (Sergeeva), Periodon flabellum (Lindström), and Protopanderodus gradatus Serpagli. (3) USGS colln. 10206-CO (7-5-85D), 150 m above base of section; very fine grained, brownish to medium-gray limestone in even beds 2-5 cm thick. Conodonts: Pariostodus originalis (Sergeeva), Periodon aculeatus Hadding, P. flabellum (Lindström), Protopanderodus gradatus Serpagli, and Protoprioniodus aranda Cooper. (4) USGS colln. 10207-CO (7-5-85E, 35G), 183 m above base of section; fining-upward sequences (2-5 cm thick) of dark gray limestone; upper beds are laminated, with locally abundant horizontal tracks and trails; thin section is dolomitic lime mudstone with rare bioclasts (including spines and crinoid fragments) grading to peloidal wacke-packstone. Conodonts: Belodella sp., Pariostodus originalis (Sergeeva), Periodon flabellum (Lindström), Protopanderodus gradatus Serpagli, and Scolopodus sp.

20 (Figs. 4, 5). Field nos. 7-1-85H-J (conodonts), 85ADn29 (lithology). Partial section, includes two productive conodont samples and one trilobite collection (Sainsbury, 1969b, loc. 34), lower part of Ols unit, lat 65°29.6'N., long 167°04.5'W., Teller B-5 quadrangle. Age: early to middle Middle Ordovician (middle Whiterockian) for conodonts; Middle Ordovician (Llanvirn) for trilobites. CAI: 4. (1) USGS colln. 10221-CO (7-1-85J, 29F), about 5 to 10 m above base of Ols unit; black shale and subordinate dark gray to black limestone (limestone sampled); thin section is slightly dolomitic lime mudstone to wackestone with notable calcified radiolarians, peloids, and micritic intraclasts. Conodonts: "Oistodus" venustus Stauffer, Periodon aculeatus Hadding, Protopanderodus sp., and Walliserodus ethingtoni (Fåhraeus). (2) USGS colln. 10222-CO (7-1-85H, 29C-E), about 25-40 m above base of Ols unit; interbedded shale, argillaceous limestone, and limestone; beds 2-10 cm thick, locally laminated to micro-cross-laminated; thin sections are argillaceous, dolomitic lime mudstone with minor quartz silt and detrital white mica, interbedded with slightly dolomitic lime mudstone to wackestone with notable calcified radiolarians.
Conodonts: *Paroistodus originalis* (Sergeeva) and *Periodon aculeatus* Hadding. (3) USGS colln. D901-CO, appears to be approximately on strike with highest conodont sample; reported as “well above base” of Olsh unit. Trilobites identified by Ross (1965 and in Sainsbury, 1969b, table 4, loc. 34): *Hystricurus sainsburyi* Ross, *Nileus cf. N. armadillo* (Dalman), and *Triarthrus* sp. Age: “Ordovician, probably late Llanvirn. Some should be a little older” (Sainsbury, 1969b, p. 31).

21 (Figs. 4, 5). Two conodont collections and one megafossil collection taken from a klippe of the Odl unit of Sainsbury (1969b), lat 65°32.81'N., long 167°18.10'W., Teller C-5 quadrangle. (1) USGS colln. 10220-CO (7-1-85A [conodonts], 85ADn26A [lithology]), top of outcrop; thin- to medium-bedded, mottled, light-brownish-gray- to grayish-orange-weathering dolostone; thin section is dolomite mosaic with local intercrystalline calcite. Conodonts: *Erraticodon cf. E. balticus* Dzik, *Panderodus* sp., and *Scandodus* sp. Age: Middle Ordovician (Whiterockian). CAI: 1.5-2. (2) USGS colln. 4280-CO, contains cephalopods identified by Flower (1968) that are from approximately the same stratigraphic level as USGS colln. 10220-CO: *Franklinoceras tellerense* Flower, *Protoceras obliquum* Flower, and *P. tubulare* Flower. Age: late Middle Ordovician (late Llanvirn-early Llandeilo). This collection also contained specimens of the tabulate coral *Labyrinthis sp.* (identified by T.E. Bolton in Sainsbury, 1969b; see also Bolton, 1965; Oliver et al., 1975). (3) USGS colln. 11154-CO (field no. 93BK20), collected near USGS colln. 10220-CO but exact stratigraphic position uncertain. Conodonts: *Erraticodon balticus* Dzik, *Panderodus* spp., and *Staufferella?* sp. or *Parapanderodus?* sp. Age: Middle Ordovician (*Histiodella holodentata* Zone to *Cahabagnathus sweeti* Zone). CAI: 2.

SOdl unit of Sainsbury (1969a) and Till et al. (2011)

22 (Fig. 3, Plate 5). Field nos. 7-21-84A-J and 7-22-84A-J (conodonts), 84ADn117 and 118 (lithology). Measured section along the Don River, first described by Sainsbury et al. (1971), 335 m thick; section begins at lat 65°29.68'N., long 166°55.34'W. and ends at lat 65°29.91'N., long 166°55.75'W., Teller B-4 quadrangle. Of 19 samples collected for conodonts, only one was barren, but most samples were low-yielding and biostratigraphically non-diagnostic; only useful samples are listed below. Megafossil faunal lists from both Ordovician and Silurian beds are given in Sainsbury et al. (1971); some of the fossil groups from the Ordovician beds have been described separately (brachiopods: Potter 1984; corals: Oliver et al., 1975; gastropods: Rohr, 1979, 1988; Rohr and Potter, 1987; Rohr et al., 2003; trilobites: Ormiston, 1978; Ormiston and Ross, 1979). Age: conodonts from the lower ~91 m of section are Late Ordovician; the coral *Bighornia n.* sp., 81 m below the highest occurrence of Ordovician fossils, indicates a Late Ordovician, likely Richmondian, age (R. J. Elias, written commun., 1986). Ages for the Silurian
conodont collections are given below; the youngest biostratigraphically diagnostic collection is Ludlow (probably early Ludlow). CAI: 3.5 (in the lower 62 m of section), 3 (above this level). (1) USGS colln. 10241-CO (7-21-84C, 118B), 0.8 m above base of section; massive, unevenly-bedded dolomitic limestone with halysitid coral, stromatoporoid, and lesser crinoid fragments; thin section is bioclastic wackestone with brachiopod, crinoid, and partly silicified and (or) dolomitized coralline debris. Conodonts: *Belodina repens* Moskalenko (Plate 5A), *Panderodus* sp., *Staufferella* aff. *S. brevispinata* Nowlan and Barnes, and *Yaocianognathus? tunguskaensis* (Moskalenko) (Plate 5B). (2) USGS collns. 6026-C and 6746-CO (118D, all collections from the same bed), 17.3 m above base of section; crudely medium-bedded dolomitic limestone with high-spired and planispiral gastropods, rugose and tabulate corals, stromatoporoids, articulated brachiopods, and cephalopods; thin section is lime mudstone to sparsely bioclastic wackestone with brachiopods, gastropods, and irregular zones of dolomite. Corals: *Bighornia* n. sp. and *Trylasma* n. sp. 1 and 2 (R.J. Elias, written commun., 1986). (3) USGS colln. 10245-CO (7-21-84G, 118I), 73 m above base of section; partly bioturbated, mottled, medium- to thick-bedded limestone with abundant ostracodes; thin section is ostracode-ooid supportstone with minor dolomite. Conodonts: *Belodina confluens* Sweet (Plate 5F), *Drepanoistodus suberectus* (Branson and Mehl), *Panderodus* sp., *Pseudobelodina adentata* Sweet (Plate 5C, D), *Pseudobelodina dispensa* (Glenister) (Plate 5E), and *Yaocianognathus? tunguskaensis* (Moskalenko). (4) USGS colln. D2036-CO, ~91 m above base of section; brownish-gray, medium-grained, bioclastic limestone with ostracodes and monorakid trilobites. Conodonts: *Drepanoistodus suberectus* (Branson and Mehl) and *Panderodus gracilis* (Branson and Mehl). (5) USGS 12112-CO (7-21-84H, 118J), 103.6 m above base of section; relatively even beds, 10-20 cm thick, of limestone with sparse silicified stromatoporoid fragments (<5 cm max diam); thin section is partly dolomitized peloidal-bioclastic supportstone. Conodonts: *Gamachignathus*, *Icriodella*, or *Distomodus* (1 Sb element), *Oulodus* sp. indet., and *Panderodus* sp. Age: very latest Ordovician (Gamachian)-earliest middle Silurian (early Wenlock). (6) USGS colln. 11245-SD (7-22-84A), 203.5 m above base of section; irregular thin beds, 3 to 12 cm thick, of sparsely bioclastic limestone (probable wackestone) with pentamerid brachiopods and halysitid and favositid corals. Conodonts: *Icriodella* sp. indet. and *Panderodus* sp. Age: early Silurian (Llandovery). (7) USGS colln. 11246-SD (7-22-84B, 118U), 219 m above base of section; brownish gray limestone in irregular beds (<7 cm thick) with locally silicified rugose corals and other bioclasts; thin section is partly dolomitized and silicified peloidal-bioclastic supportstone with ostracode, brachiopod, and crinoid fragments. Conodonts: *Distomodus dubius* (Rhodes), *Ozarkodina* n. sp., *Panderodus* sp., and *Pelekysgnathus dubius* Jeppsson. Age: late Silurian (Ludlow). (8) USGS colln. 11249-SD (7-22-84F, 118DD), 286 m above base of section; brownish gray limestone in irregular beds (3-
15 cm thick) with abundant favositid corals and stromatoporoids in growth position; thin section is crystalline (recrystallized?) carbonate mosaic with partly silicified coralline fragments. Conodonts: *Distomodus dubius* (Rhodes), *Oulodus?* sp. indet., *Ozarkodina confluens* (Branson and Mehl), and *Pelekysgnathus* sp. indet. Age: early late Silurian (Ludlow). (9) USGS colln. 11250-SD (7-22-84G, 118EE, FF, 295 m above base of section; pinkish gray bryozoan bafflestone with lesser favositid and rugose corals; thin sections are partly dolomitized lime mudstone (118E) and partly bioturbated lime mudstone to skeletal wacke-packstone with bryozoan fragments, articulated ostracodes, calcareous spines, crinoid and coral debris, and local peloids (118F). Conodonts: *Apsidognathus* cf. *A.* sp. B of Männik (1983), *Distomodus dubius* (Rhodes), *Ozarkodina* cf. *O. crassa* Walliser, s.f., *Panderodus* sp. (>300 specimens), and *Pelekysgnathus dubius* Jeppsson. Age: early late Silurian (Ludlow, probably early Ludlow).

SOul unit of Till et al. (2011)
23 (Fig. 3). USGS colln. 10979-SD (field no. 7-8-85A [conodonts], 85ADn42B, C [lithology]); lat 65°33'N., 165°57.7'W., Teller C-2 quadrangle; mapped as Oum by Sainsbury (1972). Light-grayish-orange-weathering dolostone with scattered, locally silicified fossils, including rugose, favositid, and halysitid corals, domal to laminated stromatoporoids, and minor crinoidal debris; thin sections are dolomite crystal mosaics with relict crinoid fragments and other partly silicified bioclasts. Conodonts: 70 *Panderodus* sp. CAI: 5. Corals: *Alveolites* sp., *Catenipora* sp., *Cystilasma* cf. *C. porfirievii* Zapettdskaja and Ivanovski, *Entelophyllum*-like coral, *Favosites* sp., *Paleofavosites* sp., *Syringopora*? sp., thamnoporoid (cf. *Parastriatopora* sp.), and *Tryplasma*? sp. Age (from corals): Silurian (probably late Llandovery-Wenlock). Age and lithofacies of these strata correlate with those of the upper part of unit SOdl of Sainsbury (1969a) and Till et al. (2011).

DSl unit of Till et al. (2011)
24 (Fig. 3). One conodont and two coral collections from a fault-bounded area mapped as unit DI by Sainsbury (1972); Teller C-3 quadrangle. These strata largely correlate in age and lithofacies with the upper part of unit SOdl of Sainsbury (1969a) and Till et al. (2011), but the youngest coral collection is younger than that of any other definitively dated fossil in the York terrane. (1) USGS colln. 11538-SD (field no. 7-20-84I [conodonts], 84ADn116C [lithology]); lat 65°34.4'N., long 166°09.2'W. The highest of six conodont samples collected in relative stratigraphic order yielded zonal conodonts of middle Silurian age; four other productive samples (7-20-84E, F, G, and H) yielded only specimens of *Panderodus* and indeterminate fragments. Medium-gray-weathering, dark-gray to black, fine-grained limestone with locally partly silicified skeletal
fragments; thin section is slightly recrystallized lime mudstone and bioclastic-peloidal wackepackstone with halysitid coral, ostracode, and brachiopod fragments. Conodonts: *Kockelella amsdeni* Barrick and Klapper, *Panderodus* sp. (103 specimens), and *Wurmiella excavata* (Branson and Mehl). Age: middle Silurian (middle Wenlock, *K. amsdeni* Zone). CAI: 4. (2) USGS colln. 9279-SD; same hill as USGS colln. 11538-SD but 0.5 km southwest. Corals collected by W.W. Patton, Jr., and identified by W.A. Oliver, Jr. (written commun., 1974): *Alveolites* sp., *Cystiphyllum* sp., *Favosites* sp., halysitid coral, and syringoporoid corals. Age: Silurian (probably middle or late Silurian). (3) USGS colln. 8297-SD; lat 65°34.2'N., long 166°09.5'W. Corals collected by C.L. Sainsbury in 1968, identified by W.A. Oliver, Jr. (written commun., 1968), and later described in Oliver et al. (1975): *Thecostegites* sp. and *Alveolites* sp. Age of this collection was re-evaluated based on more recent worldwide collections by Allan Pedder (oral commun., 1988): late Silurian (late Ludlovian)-early late Devonian (Frasnian), probably late Silurian to Early Devonian.

Ordovician and Older Carbonate and Siliciclastic Rocks

25 (Fig. 3). USGS colln. 9917-CO (field no. 7-20-84A [conodonts], 84ADn112A, B [lithology]); lat 65°38.4'N., long 165°55.3'W., Teller C-2 quadrangle; mapped as p_l unit by Sainsbury (1972). Irregularly bedded, mottled, light-gray- to pale yellowish-orange-weathering, slightly argillaceous limestone; thin sections are lime mudstone with sparse bioclasts, possible fenestrae, and thin lenses of argillaceous material, dolomite, quartz silt, and white mica (112A) and peloidal-intraclastic grainstone (112B). Conodonts: “*Acanthodus*” *lineatus* (Furnish), *Glyptoconus quadraplicatus* (Branson and Mehl), *Protopanderodus* n. sp. 2 of Repetski, 1982, *Utahconus? longipinnatus* Ji and Barnes, and *Variabiloconus bassleri* (Furnish). Age: middle Early Ordovician (*Rossodus manitouensis* Zone to “Low Diversity Interval”). CAI: 4.5. Lithofacies, age, and biofacies of these strata are similar to those of unit Oal of Sainsbury (1969a) and Till et al. (2011).

26 (Fig. 3). USGS colln. 10214-CO (field no. 7-8-85C [conodonts], 85ADn43A, B [lithology]); lat 65°33.8'N., long 166°19.5'W., Teller C-3 quadrangle; mapped as Op_l unit by Sainsbury (1972). Irregularly bedded, medium-dark-gray limestone associated with orange-weathering, laminated dolostone; thin sections are intraclastic-peloidal grainstone (43A) and laminated dolomitic siltstone with ≤10% quartz (43B). Conodonts (from 43A lithology): “*Acanthodus*”
lineatus” (Furnish), Rossodus manitouensis Repetski and Ethington, Scolopodus sulcatus Furnish, Semiacontiodus sp., Teridontus sp., and Variabiloconus bassleri (Furnish). Age: early-middle Early Ordovician (Rossodus manitouensis Zone–“Low Diversity Interval”). CAI: 4. Lithofacies, age, and biofacies of these strata are similar to those of unit Oal of Sainsbury (1969a) and Till et al. (2011).

27 (Fig. 3). USGS colln. 10587-CO (field no. 7-20-84C [conodonts], 84ADn114A, B [lithology]); lat 65°33.2'N., long 166°08.3'W., Teller C-3 quadrangle; mapped as Op unit by Sainsbury (1972). Irregularly bedded, mottled, light-gray- to grayish orange-weathering limestone (114A, B) interbedded with fissile, argillaceous limestone; thin sections are lime mudstone to sparsely bioclastic wackestone with spines, trilobite and crinoid fragments, and thin dolomitic lenses. Conodonts: "Paltodus" sp. and Protopanderodus sp. Early Ordovician (early to early middle Arenig); CAI: 4. Lithofacies, age, and biofacies of these strata are similar to those of units Oal and Ol of Sainsbury (1969a) and Till et al. (2011).

28 (Fig. 3). Two conodont collections from small fault-bounded area mapped as Ol by Sainsbury (1972); Teller C-3 quadrangle. Age: middle Early Ordovician (“Low Diversity Interval”). CAI: 4-4.5. Age and lithofacies of these rocks like those of unit Oal of Sainsbury (1969a) and Till et al. (2011). (1) USGS colln. 12109-CO (field no. 07AD9Z); lat 65°34.62'N., long 166°20.33'W. Pale orange-weathering intraclastic limestone with laminated clasts as much as several centimeters long; thin section is partly dolomitic intraclastic-peloidal supportstone with notable detrital quartz silt to fine sand. Conodonts: “Acanthodus” cf. “A.” lineatus (Furnish), Colaptoconus cf. C. quadruplicatus (Branson and Mehl), Eucharodus cf. E. parallelus (Branson and Mehl), Utahconus? longipinnatus Ji and Barnes, and Variabiloconus bassleri (Furnish). (2) USGS colln. 12110-CO (field no. 07AD10A); lat 65°34.69'N., long 166°20.40'W. Light-gray weathering, medium-dark-gray limestone in slabby beds 10 to 20 cm thick; thin section is intraclastic-peloidal grainstone with sparse bioclasts (mainly crinoid fragments, some of which are partly micritized or silicified). Conodonts: Aloxoconus cf. A. iowensis (Furnish), Colaptoconus quadruplicatus (Branson and Mehl), Eucharodus parallelus (Branson and Mehl), Utahconus? longipinnatus Ji and Barnes, and Variabiloconus cf. V. bassleri (Furnish).

29 (Fig. 3). USGS colln. 12111-CO (field no. 07AD11A); lat 65°21.49'N., long 166°24.72'W., Teller B-3 quadrangle; mapped as p_l unit by Sainsbury (1972). Light-gray- to yellowish-orange-weathering limestone in irregular (partly bioturbated?) beds 20 to 30 cm thick; thin section is
slightly recrystallized intraclastic-bioclastic grainstone with crinoid, brachiopod(?) and coral(?)
fragments. Conodonts: “Acanthodus” lineatus (Furnish), Colaptoconus quadraplicatus (Branson
and Mehl), Drepanoistodus cf. D. nowlani Ji and Barnes, Eucharodus cf. E. parallelus (Branson
and Mehl), Laurentoscarodium cf. L. triangularis (Furnish), Rossodus sp., and Utahconus?
longipinnatus Ji and Barnes. Age: middle Early Ordovician (“Low Diversity Interval”). CAI: 4.5.
Age and lithofacies of these rocks like those of unit Oal of Sainsbury (1969a) and Till et al.
(2011).

O &lt unit of Till et al. (2011)

30 (Fig. 3). USGS colln. 10212-CO (field no. 85ATi116); lat 65°28.2’N., long 167°36.8’W.,
Teller B-6 quadrangle; mapped as p_s unit ("Slate of the York region") by Sainsbury (1972).
Orange-weathering dolostone (5 to 10-cm-thick bed) in sequence of impure, calcareous turbidites;
thin section is finely equigranular carbonate mosaic with minor quartz and white mica.
Conodonts: 1 mid-cone fragment of Protopanderodus sp. Age: Ordovician (middle Arenig-
Ashgill). CAI: 5.5.

Mississippian Carbonate Rocks

Ml unit of Sainsbury (1972) and Till et al. (2011)

31 (Fig. 3). USGS colln. 29272-PC; float sample from coast ~1.5 km southeast of Cape Prince of
Wales; Teller C-7 quadrangle (SC part sec. 8, T. 2 N., R. 45 W.); coralline carbonate likely
derived from pendant of Ml unit in Cretaceous granite. Coral, collected by K. Watts (University
of California, Santa Cruz) and identified by W.J. Sando (unpublished USGS fossil report,
shipment no. A-84-16, 1984): lithostrotionelloid cerioid rugose coral, indet. Age: likely Late
Mississippian. Sando also reexamined corals previously collected from the Ml unit by F.L. Hess
(1905), E. Steidtmann (1918), and J.B. Mertie (1939); these collections contain solitary rugose
corals, syringoporoids, phaceloid colonial Rugosa, and rare cerioid colonial Rugosa. Sando
concluded that the Teller quadrangle material resembles, and likely correlates with, coral faunas
from the Alapah Limestone and correlative units of the Lisburne Group in the Brooks Range
dated by Armstrong (1975) as Late Mississippian (middle Meramecian to early Chesterian).

CENTRAL AND EASTERN SEWARD PENINSULA, NOME COMPLEX

Layered Sequence

Oim unit of Till et al. (2011)
USGS colln. 9938-CO (field no. 84ATi281); lat 64°49.58'N., long 164°55.33'W., Solomon D-6 quadrangle. Orange- to tan-weathering, dark gray, fine-grained dolostone lens in impure marble; from upper part of unit. Thin section is finely crystalline dolostone with minor disseminated white mica and quartz and a few possible relict bioclasts. Conodonts: drepanodontiform element of mid-Early to Middle Ordovician morphotype, 2 coniform fragments. Age: Early (but not earliest) through Middle Ordovician. CAI: 7.

DOx unit of Till et al. (2011)

USGS colln. 10059-CO (field no. 84ADn75Z); lat 64°48.00'N., long 164°12.50'W., Solomon D-5 quadrangle. Medium-crystalline, medium-gray (locally color-laminated) platy marble that breaks into layers 1 to 10 cm thick, intercalated with grayish-brown chloritic and (or) micaceous marble. Purer, medium-gray marble sampled; it contains rare relict crinoid ossicles. Conodonts: 1 drepanodontiform element (very corroded). Age: Ordovician. CAI: 5.5-6.

Recrystallized radiolarians in fine-grained graphitic metasiliceous rock, from three closely spaced localities in the Bendeleben A-2 quadrangle. Radiolarians are sparse to abundant; a few specimens in thin sections listed below retain internal structure. (1) Field nos. 70AH200B, 05AD30A-C; lat 65°05.77'N., long 162°32.70'W. (2) Field nos. 83ATi102A, 05AD31A, C; lat 65°04.47'N., long 162°32.42'W.; a photograph of a well-preserved specimen in thin-section 102A was identified as a radiolarian of probable pre-Devonian age by B.K. Holdsworth (written commun., 1985). (3) Field no. 84ATi104B, lat 65°05.5'N., long 162°35.17'W.

USGS colln. 11399-SD (field no. 85ADn25A); lat 65°33.10'N., 165°23.64'W., Teller C-1 quadrangle. Mottled (partly bioturbated?), light- to medium-gray dolostone (sampled), intercalated with finely laminated dolostone; thin section is dolomite mosaic with relict muddy(?) clasts. Conodonts: Kockellella sp. indet. and Ozarkodina? sp. indet. Age: Silurian (late Llandovery-Ludlow). CAI: 6-7.

Scattered Metacarbonate Rocks

 unit of Till et al. (1986, 2011)

USGS colln. 9937-CO (field no. 84ADn108D); lat 64°54.93'N., long 164°29.58'W., Solomon D-5 quadrangle. White to medium-gray to pinkish-orange dolostone; thin section is moderately ferric dolomite mosaic with possible relict peloids. Phosphatic sclerites: Lapworthella sp. Age: early through possibly early middle Cambrian.
Od unit of Till et al. (1986, 2011)

37 (Fig. 2). USGS colln. 9611-CO (field no. 82ADu69); lat 65°46.00'N., long 162°46.00'W., Bendeleben D-2 quadrangle. Massive, tan to gray dolostone, locally mottled or laminated; thin sections are fine crystalline dolomite. Conodonts: *Acodus oneotensis* Furnish s.f., *Clavohamulus* n. sp., *Fryxellodontus?* n. sp., *Protopanderodus* sp., *Rossodus manitouensis* Repetski and Ethington, *Scolopodus floweri* Repetski, and *S. rex* Lindström. Age: Early Ordovician (“Low Diversity Interval” to *Macerodus dianae* Zone). CAI: 5.5-7.

38 (Fig. 2). USGS colln. 9897-CO (field no. 84ADn54); lat 65°03.00'N., long 162°10.25'W., Bendeleben A-1 quadrangle. Mottled, light-pinkish-gray to dark-gray dolostone; thin sections are dolostone with local dark layers and lenses that contain irregular to rounded white intraclasts (≤2 mm max diam). Conodonts: *Fryxellodontus?* n. sp., *Paltodus bassleri* Furnish, *Protopanderodus cf. P. elongatus* Serpagli, *?Scandodus aff. S. furnishi* of Repetski (1982), *Scolopodus gracilis* Ethington and Clark, and *Utahconus? longipinnatus* Ji and Barnes. Age: Early Ordovician (“Low Diversity Interval” to *Macerodus dianae* Zone). CAI: 5.5-7.


40 (Fig. 2). USGS colln. 9800-CO (field no. 83ACI94); lat 65°05.00'N., long 162°08.00'W., Bendeleben A-1 quadrangle. Massive, light- to medium-gray dolostone with local laminae and possible relict bioclasts. Conodonts: *Drepanoistodus* sp., *Eucharodus parallelus* (Branson and Mehl), and *Glyptoconus quadruplicatus* (Branson and Mehl). Age: Early Ordovician (“Low Diversity Interval” to *Reutterodus andinus* Zone). CAI: 5.5-6.

41 (Fig. 2). USGS colln. 10312-CO (field no. 85APa104); lat 64°57.97'N., long 161°37.12'W., Norton Bay D-6 quadrangle. Pink to dark-gray, locally mottled dolostone; thin section is dolomite mosaic with relict peloids and (or) bioclasts and minor quartz silt. Conodonts:

42 (Fig. 2). USGS colln. 9801-CO (83ADn29A); lat 64°55.77’N., long 164°18.29’W., Solomon D-5 quadrangle. Light-gray- to pink-weathering, dark-gray dolostone; thin section is vaguely mottled ferroan dolomite mosaic. Conodonts: Parapanderodus striatus (Graves and Ellison), Scolopodus sulcatus Furnish s.f., and Variabiloconus bassleri (Furnish). Age: Early Ordovician (Rossodus manitouensis Zone to “Low Diversity Interval”). CAI: 4. The CAI value of this collection is substantially lower than values of conodonts from other collections in the Nome Complex; the collection may represent sample or laboratory contamination, or a remnant of a structurally higher thrust sheet.

43 (Fig. 2). USGS colln. 9612-CO (field no. 82ADu71); lat 65°48.09’N., long 162°46.02’W., Bendeleben D-2 quadrangle. Mottled (partly bioturbated?), medium- to dark-gray and light-pinkish-gray dolostone. Conodonts: drepanodontiform elements, Panderodus sp., and ramiform element of Early to early Middle Ordovician morphotype. Age: late Early to early Middle Ordovician. CAI: 6-7.

44 (Fig. 2). USGS colln. 9889-CO (field no. 84ADn80A); lat 65°47.00’N., long 164°10.00’W., Bendeleben D-5 quadrangle. Light- to medium-gray dolostone, locally mottled or faintly laminated, with rare relict bioclasts(?). Conodonts: "Stereoconus" sp. and Panderodus sp. Age: Middle to early Late Ordovician (Histiodella holodentata Zone to lower Amorphognathus tvaerensis Zone; possibly H. holodentata Zone to Cahabagnathus sweeti Zone). CAI: 8.

Sd unit of Till et al. (1986, 2011)

45 (Fig. 2). USGS colln. 11031-SD (field no. 84ADn10A); lat 64°37.00’N., long 162°17.00’W., Solomon C-1 quadrangle. Light-gray-weathering, medium- to dark-gray, locally mottled dolostone; thin section is dolostone with relict intraclasts, peloids, and (or) bioclasts. Conodonts: Kockelella sp. indet. and Panderodus sp. Age: middle-early late Silurian (Wenlock-early Ludlow). CAI: 5.5.

46 (Fig. 2). USGS colln. 10904-SD (field no. 83ADn27); lat 65°02.10’N., long 162°05.51’W., Bendeleben A-1 quadrangle. Light-gray-weathering, medium- to dark-gray dolostone; thin section is partly laminated dolostone with relict peloids and possible bioclasts. Conodonts:
Ozarkodina confluens (Branson and Mehl) and Panderodus sp. Age: middle-late Silurian (Wenlock-middle Pridoli); CAI: 5.5-6.

Ddm unit of Till et al. (1986, 2011)

47 (Fig. 2). Field no. 83AC196; lat 65°05.00'N., long 162°07.10'W., Bendeleben A-1 quadrangle. Fine-grained, light- to dark-gray dolostone with well-preserved, abundant megafossils, including solitary and colonial corals, stromatoporoids, and bryozoans. (1) USGS colln. 10746-SD. Tabulate corals: Cladopora sp., Favosites spp., Heliolites sp., and syringoporoid. Rugose corals: Pseudamplexus sp., cerioid ptenophyllid, and Sociophyllum? sp. Other megafossils: indeterminate stromatoporoids and bryozoans. (2) USGS colln. 10893-SD (field no. 83AC196). Conodonts: Icriodus taimyricus Kuzmin and Panderodus sp. CAI: 5.5. Age (based on conodonts): late Early Devonian (earliest Emsian, Polygnathus dehiscens Zone).

48 (Fig. 2). USGS colln. 10727-SD (field no. 82ADu73); lat 65°47.58'N., long 162°44.93'W., Bendeleben D-2 quadrangle. Dark-gray-weathering, black dolostone with locally abundant fossil debris; thin section is dolostone with relict skeletal packstone texture, abundant crinoid debris, and possible coated grains. Conodonts: Belodella devonica (Stauffer), B. triangularis (Stauffer), Panderodus spp., and Polygnathus sp. indet. of the P. dehiscens-P. perbonus group. Age: late Early Devonian (early Emsian; Polygnathus dehiscens-Polygnathus gronbergi Zones). CAI: 5-6.5.

49 (Fig. 2). USGS colln. 10997-SD (field no. 84ATi8AB); lat 64°34.92'N., long 162°22.50'W., Solomon C-1 quadrangle. Black dolostone with alternating layers, 10 to 20 cm thick, of coralstromatoporoid packstone and sparsely fossiliferous mudstone to wackestone (mudstone-wackestone sampled). Conodonts: Neopanderodus sp., Ozarkodina sp. of Middle Silurian-Early Devonian morphotype, Panderodus sp., and Pelekysgnathus sp. Age: late Early Devonian (Emsian). CAI: 5-5.5.

50 (Fig. 2). USGS colln. 10897-SD (field no. 83SK28A); lat 64°53.18'N., 162°11.13'W., Solomon D-1 quadrangle. Light-gray, fine-grained dolostone with recrystallized fossil debris; thin section is dolostone with abundant crinoid fragments. Conodonts: Belodella devonica (Stauffer), Neopanderodus sp., Panderodus sp., and Polygnathus serotinus Telford. Age: latest Early-earliest Middle Devonian (Polygnathus serotinus-Polygnathus costatus costatus Zones). CAI: 5-5.5.
51 (Fig. 2). Lat 64°38.00' N., long 162°14.00' W., Solomon C-1 quadrangle. (1) USGS colln. 8733-SD (field no. 70AMm206). Coralline dolostone. Corals: *Thamnopora*? sp. Stromatoporoids: *Amphipora* sp. and *Idiostroma*? sp. (2) USGS colln. 10993-SD (field no. 84Dn2A). Dark-gray dolostone with locally abundant corals and stromatoporoids (some partly silicified); thin sections are dolostones with relict coralline wacke-packstone textures. Conodonts: *Belodella devonica* (Stauffer), *Neopanderodus* sp., and *Polygnathus linguiformis linguiformis* Hinde. CAI: 5. Age (based on conodonts): Middle Devonian.

52 (Fig. 2). USGS colln. 10908-SD (field no. 83ADn61); lat 65°15.50' N., long 162°17.70' W., Bendeleben B-1 quadrangle. Medium-gray-weathering, black dolostone with locally abundant, partly silicified fossil debris, including possible coral fragments, and local black chert in angular fragments ≤10 cm long. Conodonts: *Belodella devonica* (Stauffer), *Panderodus* spp., and *Polygnathus linguiformis linguiformis* Hinde. Age: Middle Devonian. CAI: 5.5.

53 (Fig. 2). USGS colln. 11057-SD (field no. 84ATi112); lat 64°52.90' N., long 162°09.90' W., Solomon D-1 quadrangle. Light-gray-weathering, medium-gray dolostone with abundant fossil debris. Conodonts: *Belodella devonica* (Stauffer), *Neopanderodus* sp., *Panderodus* sp., and *Polygnathus linguiformis linguiformis* Hinde. Age: Middle Devonian. CAI: 5.0-5.5.

54 (Fig. 2). Lat 64°45.24' N., long 163°28.66' W., Solomon D-3 quadrangle. (1) USGS colln. 9285-SD (field no. 73APa106). Coralline dolostone. Corals: *Cladopora* sp., *Hexagonaria*? sp., *Peneckiella* sp., and *Thamnopora* sp. Stromatoporoids: *Amphipora*? sp. (2) USGS colln. 10895-SD (field no. 83ADn5). Dark gray dolostone with local colonial corals and fine-grained fossil debris. Conodonts: *Belodella devonica* (Stauffer) and *Polygnathus linguiformis linguiformis* Hinde. CAI: 5.5. Age (based on megafossils and conodonts): Middle Devonian-earliest Late Devonian.

55 (Fig. 2). USGS colln. 10745-SD (field no. 83ADn 25); lat 64°49.51' N., long 162°17.51' W., Solomon D-1 quadrangle. Black coralline dolostone; thin section is dolostone with relict skeletal wacke-packstone texture (bioclasts include coralline and crinoid debris). Stromatoporoids: *Amphipora* sp. Tabulate corals: *Alveolites* sp., *Cladopora* sp., *Favosites* spp., *Syringopora* sp., and *Thamnopora*? sp. Rugose corals: *Phillipsastraea*? sp. Brachiopods: one incomplete brachial valve attributed to the *Calvinaria variabilis* (Whiteaves) group. Conodonts: *Belodella devonica* (Stauffer), *Icriodus* sp. or *Pedavis* sp., and *Panderodus* spp. (50 specimens). CAI is 5. Corals indicate a probable early Late Devonian (Frasnian) age and the brachiopod indicates a middle
Frasnian age, whereas the conodonts indicate a definitive pre-Late Devonian age limited to the Late Silurian-Middle Devonian. The conodont and megafossil collections came from the same area of rubble crop, which could contain stratigraphically or tectonically juxtaposed units of different age. Alternatively, reworked older conodonts could have been redeposited into younger megafossil-bearing beds.

Clasts in Cretaceous? conglomerate (part of TKs map unit of Till et al., 2011)
[Unit is not part of Nome Complex, but contains clasts derived from Nome Complex. (4.5 kg) indicates conodont sample weight.]

56 (not shown). Field no. 82ADu78; lat 65°30.50'N., long 162°41.10'W., Bendeleben C-2 quadrangle. (1) USGS colln. 9799-CO (78MM). Mottled, light-gray and black dolostone clast (4.5 kg). Conodonts: Belodina sp. and Panderodus sp. Age: Middle-Late Ordovician. CAI: 5.5. Thus far, no metamorphic bedrock units on the Seward Peninsula have produced this species association. (2) USGS colln. 10901-SD (78JJ). Black dolostone clast with possible brachiopod fragments (8.1 kg). Conodonts: distomodontiform elements and Panderodus sp. Age: early to mid-Silurian. CAI: 5-6. (3) USGS colln. 10894-SD (78II). Dark-gray calcitic dolostone clast with colonial coral debris (2.4 kg). Conodonts: Kockelella sp. indet., Panderodus sp., and Wurmiella excavata (Branson and Mehl). Age: mid- to early late Silurian (Wenlock-Ludlow). CAI: 5-5.5.

57 (not shown). USGS colln. 10725-SD (field no. 82ADu45); lat 65°01.00'N., long 162°01.00'W., Bendeleben A-1 quadrangle. Dark-gray, fossiliferous dolostone clast (35 cm max diam; 11.8 kg); thin section is dolomite mosaic with relict coralline(?) debris. Conodonts: Kockelella sp. indet. and Ozarkodina confluens. Age: middle-early late Silurian (Wenlock-Ludlow). CAI: 5.

58 (not shown). Field no. 83ADn34; lat 65°04.00'N., long 162°01.00'W., Bendeleben A-1 quadrangle. (1) USGS colln. 10891-SD (34I). Black dolostone clast with locally silicified coralline debris (15 cm max diam; 2.8 kg). Conodonts: Belodella devonica, Panderodus sp., and Polygnathus inversus Klapper and Johnson. Age: late Early Devonian (late Emsian, Polygnathus inversus-P. serotinus Zones). CAI: 5. (2) USGS colln. 10903-SD (34O). Black dolostone clast with amphipoid stromatoporoid debris (1.6 kg); thin section is dolostone with relict skeletal wacke-packstone texture. Conodonts: Ozarkodina sp. or Pandorinellina sp., Panderodus sp., and Polygnathus cf. P. linguiformis. Age: Middle Devonian. CAI: 5.5-6.

Metaturbidite units
North coast metaturbidites (DObm unit of Till et al., 2011)

59 (Fig. 2). Measured section 85SP-TJR-M (T. Ryherd, M.S. thesis; see also Ryherd and Paris, 1987; Ryherd et al., 1995); lat 66°05.3'N., 162°47.7' W., Kotzebue A-2 quadrangle. Section consists of ~60 m of argillite, phyllite, metalimestone, and radiolarian chert. Graptolites were collected by M. Churkin (ARCO) and T.J. Ryherd and identified by Claire Carter, U.S. Geological Survey (unpublished fossil report, 1985). Only the most biostratigraphically diagnostic in situ faunas of 18 separate collections are listed: (1) Field no. 85SP38 TJR-M, 12 ft above base of section. Graptolites: *Amplexograptus fallax* Bulman, *Climacograptus bicornis* (Hall), *Corynoides calicularis* Nicholson, *Cryptograptus triconis* (Carruthers), *Lasiograptus harknessi* (Nicholson), and *Orthograptus calcaratus calcaratus* Lapworth. Age: early Late Ordovician (early Caradoc; North American *C. bicornis* Zone, equivalent to *Climacograptus peltifer* Zone of Great Britain). (2) Field no. 85SP26 TJR-M, 38 ft above base of section. Graptolites: *Climacograptus caudatus* Lapworth, *C. spiniferus* Ruedemann, and *Orthograptus cf. O. amplexicaulis* (Hall). Age: early Late Ordovician (middle Caradoc; early Eastonian [Eal-2]; equivalent to *Climacograptus wilsoni* Zone of Great Britain). (3) Field no. 85SP29 TJR-M, 80 ft above base of section. Graptolites: *Dicellograptus alector* Carter, *Dicranograptus?* (fragment), *Orthograptus quadrimucronatus* (Hall), and *O. cf. O. amplexicaulis* (Hall). Age: middle Late Ordovician (early Ashgill; late Eastonian (Ea4); *O. quadrimucronatus* Zone of Berry, 1960, equivalent to *Pleurograptus linearis* Zone of Great Britain). (4) Field no. 85SP39 TJR-M, 145 ft above base of section. Graptolites: *Climacograptus pogrebovi* Koren' and Sobolevskaaya and *Paraorthograptus pacificus pacificus* (Ruedemann). Age: late Late Ordovician (middle Ashgill; *P. pacificus* Subzone of the *Climacograptus longispinus supernus* Zone of the northeastern U.S.S.R., equivalent to the *P. pacificus* subzone of the *Dicellograptus anceps* Zone of Great Britain).

60 (Fig. 2). Field nos. 7-18-84A-Q, 83ADn44. Measured section, 225 m thick, of off-platform metalimestone, lesser dolostone, and minor phyllite; a 20-m-thick interval about 165-185 m above the base of the section consists mostly of carbonate debris beds containing rounded, angular, and tabular clasts (<5 m max diam). Sea cliff exposures; section begins at lat 66°05.40'N., long 162°48.22'W. and ends at lat 66°05.13'N., long 162°49.70'W., Kotzebue A-2 quadrangle. An interval between 17 and 225 m above the base of the section produced 15 samples with conodonts of Wenlock to Ludlow age. Only the most biostratigraphically diagnostic collections are listed below: (1) USGS colln. 10907-SD (83ADn44); ~63-78 m above base of section; metalimestone with relict coarse-grained to pebbly texture, in layers 70 cm to 1 m thick. Conodonts: *Kockelella patula* Walliser, *Oulodus sp.*, *Panderodus sp.*, and *Wurmiella excavata*
(Branson and Mehl). Age: mid-Silurian (middle Wenlock; *K. patula* Zone). CAI: 5.5-7.5. (2) USGS colln. 11522-SD (7-18-84F), 79 m above base of section; medium- to dark-gray, medium- to coarse-crystalline metalimestone in layers 15 to 50 cm thick; thin section is coarse calcite crystal mosaic with palimpsest texture of dark clasts (0.1-0.7 mm diam), subordinate bioclasts(?), and minor dolomite and quartz. Conodonts: *Kockelella variabilis* Walliser, *Panderodus* sp., *Pseudooneotodus beckmanni* (Bischoff and Sannemann), and *Wurmiella excavata* (Branson and Mehl). Age: late middle-early late Silurian (latest Wenlock-early Ludlow; partly based on constraints from overlying samples). CAI: 5.5-7. (3) USGS colln. 11528-SD (7-18-84L), 166.5 m above base of section; 3-cm-thick layer of medium- to dark-gray metalimestone that grades upward from medium to fine crystalline; thin section is coarse calcite crystal mosaic with local palimpsest texture of dark clasts (0.15-0.3 mm diam), bioclasts (including crinoid debris), and thin muddy lenses. Conodonts: *Kockelella*? sp. indet., “*Ozarkodina” crassa* Walliser s.f., *Panderodus* sp., and *Wurmiella excavata* (Branson and Mehl). Age: very earliest late Silurian (earliest Ludlow, “*O.” crassa” Zone). CAI: 5.5-7. (4) USGS colln. 11532-SD (7-18-84Q), 224 m above base of section; medium-gray, fine- to medium-crystalline metalimestone in layers 0.5 to 4 cm thick with thin muddy partings; thin section is coarse calcite crystal mosaic with palimpsest texture of dark clasts (≤2 mm diam) and subordinate bioclasts (including crinoid debris). Conodonts: *Ancoradella ploeckensis* Walliser, *Panderodus* sp., and *Wurmiella excavata* (Branson and Mehl). Age: early late Silurian (early Ludlow, *A. ploeckensis* Zone). CAI: 5.5-7.

South coast metaturbidites (*D_bm* unit of Till et al., 2011)

61 (Fig. 2). USGS colln. 10060-CO (field no. 84ATi57); lat 64°38.60'N., long 162°22.40'W., Solomon C-1 quadrangle. Black, fine- to medium-crystalline metalimestone (sampled), intercalated with fissile, impure carbonate. Protoconodont: *Protohertzina*? sp.; phosphatic sclerite: *Lapworthella* sp. Age: early, or possibly early middle, Cambrian. CAI: 5.

62 (Fig. 2). USGS colln. 10213-CO (field no. 84ATi15Z); lat 64°33.50'N., long 162°27.33'W., Solomon C-1 quadrangle. Dark-gray, medium-crystalline metalimestone, in layers 1 to 5 cm thick (sampled), intercalated with black, fissile, micaceous carbonate. Conodonts: *Protopanderodus* sp. Age: middle Early Ordovician (middle Ibexian)-Late Ordovician. CAI: 5.5.

63 (Fig. 2). USGS colln. 11229-SD (field no. 85ADn2B); lat 64°44.43'N., long 161°32.30'W., Norton Bay C-6 quadrangle. Dark gray metalimestone in layers ≤10 cm thick with black shaly partings; thin section is calcite mosaic with minor rounded to angular quartz and a few relict

64 (Fig. 2). USGS colln. 11058-SD (field no. 84ADn5H); lat 64°34.60'N., long 162°24.00'W., Solomon C-1 quadrangle. Medium gray metalimestone layer (15 cm thick) intercalated with dark-gray shaly metalimestone; thin section is metalimestone with abundant clasts (≤2.5 mm max diam) of dark, finer grained carbonate (mainly dolomite), a few lenses rich in white mica, and minor quartz; one clast contains a probable crinoid ossicle. Conodonts: *Distomodus?* sp. indet., *Oulodus?* sp. indet., and *Wurmiella excavata?*. Age: middle-early late Silurian (Wenlock-Ludlow). CAI: 5-6.

65 (Fig. 2). USGS colln. 11173-SD (field no. 84ATi23); lat 64°37.45'N., long 161°13.80'W., Solomon C-1 quadrangle. Medium- to dark-gray metalimestone, in layers ≤10 cm thick (most ≤3-5 cm thick), intercalated with fissile, micaceous, finer grained carbonate rocks; metalimestone (sampled) makes up ≤10% of outcrop here. Conodonts: *Oulodus* sp., *Ozarkodina cf. O. eberleini* Savage, *Panderodus* sp., *Pandorinellina?* sp. indet., and *Pelekysgnathus* sp. indet, Age: middle Early Devonian (Siegenian). CAI: 5.