STRATIGRAPHIC POSITION OF 'TOODOGGONE VOLCANICS' (94E/2, 3, 6, 7, 11, 12, 13)

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Recent geological mapping by Gabrielse (1976), Gabrielse, *et al.*, (1976, 1977), Panteleyev (1982, 1983), and Diakow (this volume) has delineated the extent and described the nature of the 'Toodoggone volcanics' of Carter (1972). The 100 by 25-kilometre belt of volcanic rocks has been the focus of much recent exploration for epithermal precious metal deposits (Schroeter, 1982, 1983). Interest in the area is expected to continue at a high level for some time. A preliminary map at scale 1:50 000 summarizing recent lithostratigraphic work by L. J. Diakow, A. Panteleyev, and T. G. Schroeter will be released in the spr ng of 1984.

The Toodoggone volcanics are a Jurassic, subaerial, intermediate, calc-alkaline to alkaline, predominantly pyroclastic assemblage. They unconformably overlie Upper Triassic Takla rocks. The contact was observed in three localities; in each, Takla pyroxene basalt flows are overlain by biotite-bearing crystal ash tuffs above either a gentle angular unconformity or a disconformity.

The lateral boundaries of the Toodoggone volcanic belt are well defined in most areas. South of Finlay River (94E/2) the volcanic rocks can be traced 1 kilometre into McConnell Creek map-area (94D). There they form a thin erosional remnant on a 'basement' of Takla rocks (Panteleyev, 1982). The southwestern boundary consists of steep reverse faults that juxtapose Toodoggone rocks against Takla and older Asitka rocks (Diakow, 1983). The southeastern boundary consists of stacked panels of Asitka and Takla rocks thrust onto Toodoggone rocks (Panteleyev, 1982). In the central part of the volcanic belt, north of Finlay River, Toodoggone volcanics are commonly in fault contact on the west and east with Takla and undivided Hazelton rocks (predominantly feldspar porphyry flows). Locally the boundary is marked by granodiorite intrusions. The northwesterly margin of the volcanic belt and the northern boundary are overlapped near Chukachida River by clastic rocks of the Cretaceous to Tertiary Sustut Group.

Radiometric dates from the Toodoggone volcanic rocks range from 179 to 204 Ma; coeval granitic stocks intruding the volcanics range from 181 to 207 Ma (Carter 1972; Cann and Godwin, 1980; Gabrielse, *et al.*, 1980; and Panteleyev, 1983). These indicate an Early Jurassic age for Toodoggone volcanism. Faunal evidence is scarce except for one Bajocian locality (earliest Middle Jurassic) from the upper part of the volcanic unit reported by Gabrielse, *et al.* (1976) and Tipper (1976); no other fossil localities have been found. No additional fossils were discovered during recent mapping although a number of sites contain plant debris.

Judging from the radiometric data and field relationships at least the basal, Lower Jurassic part of the Toodoggone volcanics is correlative with the Telkwa Formation as defined by Tipper and Richards (1976). The rocks would constitute a northern extension into Toodoggone map-area (94E) of the Telkwa Formation of the Hazelton Group. In accord with their scheme of five 'facies', belts of similar depositional type within the Telkwa Formation, the basal Toodoggone pyroclastic volcanics can be considered to be a sixth facies — the 'Toodoggone subaerial facies'. The 'facies' relationship is illustrated on Figure 52, a modification of Tipper and Richards' Figure 12 (1976).

Furthermore, as mapping proceeds it is probable that other Toodoggone rocks younger than Telkwa Formation, like the Bajocian site reported by Gabrielse, *et al.* (1976), will be documented. The younger Toodoggone rocks most likely occur north of Toodoggone River in the Moyez Creek-Tuff Peak area where thick flows and lesser sedimentary units with interbedded siliceous tuffs and marls overlie typical Toodoggone ash flows (*see* Diakow, this volume).

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