Geol. Bull. Univ. Peshawar, Vol. 4, 1969, *pp.* 90-91

NOTICES, ABSTRACTS AND REVIEWS

ANOTHER PALAEOZOIC REEF DISCOVERY IN TANGI GHAR, PESHAWAR DISTRICT

When approaching Tangi village from Peshawar valley the sight of a solitary ridge rising abruptly from lush green fields adds tremendously to the panoramic view of this fertile plain. This ridge is locally known as Tangi Ghar and is easily accessible, yet no published account is available to throw some light on its geology. A few months ago, Mr. Sher Ali Khan, a local landlord and mine-owner, brought some samples of crystalline limestone from this ridge, which were examined by the writer. The polished limestone samples showed recrystallized impressions of fossils, on the basis of which a tentative Palaeozoic age was assigned to them. Subsequently the author conducted a detailed geological investigation which included mapping the ridge on the scale of four inches to the mile.

The Tangi Ghar spreads over some three square miles, and is divided into seven isolated rounded to subrounded hillocks, the highest attaining a height of 1582 feet. The general trend of the ridge is east-west, which conforms to the strike of the rocks, which dip to the north. The major hillock (1582 feet) forms a steep escarpment along the northern edge. The mountain ranges exposed around Tangi Ghar lie at distances varying between 8 and 20 miles; the nearest ones are those of Takhtbai and Mohmand Tribal Territory, lying towards the east and west respectively.

Three distinct lithological units are differentiated:

(*i*) *Light to dark grey slate, phyllite and phyllitic schist*, with thin undulatory bands of light grey to black crystalline limestone. Quartz veins, both along and across the bedding, cut these rocks. Crinoidal stems are common. This bed is exposed along the northern edge of the hillock and its thickness varies from 5 to 15 feet.

(*ii*) *Thin-bedded to massive crystalline siliceous limestone*, medium to coarse-grained, with typical weathered surfaces. Black, pinkish-brown, light grey and white colours are conspicuously displayed; the latter two are the most prevalent. The white marbalized limestone contains pieces of light to dark grey calcite (probably recrystallized mega-fossils). Calcite and quartz veining is common. The thickness varies from 50 to over 150 feet and the rocks are fossiliferous.

Dr. D.R.C. Kempe, attached to this Department, paid a visit to Tangi Ghar and collected limestone samples from this ridge for analysis to determine whether the characteristic trace elements of carbonatite were present; the attitude of the reef, lying on older phyllites and metamorphosed limestone, gives the reef limestone a superficial appearance of being 'intrusive'. The analysis was carried out in the Institute of Geological Sciences, London, by Mr. A. Livingstone, arranged by Dr. T Deans. The author gratefully acknowledges this help. The analyses of the three limestone samples (*a*) white, (*b*) grey, and (*c*) pinkish-brown, are given below:

	Sr	Ba
(*a*)	60 ppm	not detected
(*b*)	300 ppm	not detected
(*c*)	200 ppm	600 ppm

Ce, La and Nb were not detected. These results show the rocks to be normal limestones.

(*iii*) *Slate, phyllite and phyllitic schist*, with light to dark grey, thin broken limestone bands. Crinoidal stems are common. The approximate thickness may be over 500 feet.

Units no. (*i*) and (*iii*) are identical; thus, structurally, the ridge appears to have been folded into a syncline with crystalline limestone (no. *ii*) lying on the top.

The crinoid columns compare favourably with the crinoid columns found in Nowshera (personal communication, 1969) and Jamrud reef complexes. Attaullah Khan, from this Department, has identified *Favosites*, *Thamnopora* and some stony bryozoa; the latter could not be identified generically. *Favosites* and *Thamnopora* are restricted to the Lower Palaeozoic, and on the basis of these two fossils, the author tentatively assigns a Siluro-Devonian age and thus correlates the Tangi Ghar coralline limestone (most probably reef core) with the Nowshera (Teichert and Stauffer, 1965; Stauffer, 1968; Ali and Anwar, ibid) and Jamrud (Khan, ibid) reef complexes, which in turn are correlated with the Muth Quartzite.

REFERENCES

ALI, K. A. AND ANWAR, J., Ibid.—Stratigraphic studies of the Nowshera reef complexes, Nowshera Tehsil, West Pakistan. Pp. 33-43.

KHAN, M. A., Ibid.—Siluro-Devonian reef complex of Ghundai Sar and vicinity, Jamrud, Khyber Agency. Pp. 79-82.

STAUFFER, K.W., 1968—Silurian-Devonian reef complex near Nowshera, West Pakistan. Bull. Geol. Soc. Amer., vol. 79, pp. 1331-50.

TEICHERT, C. AND STAUFFER, K. W., 1966—Palaeozoic reef discovery in Pakistan. Rec. Geol. Survey Pakistan, vol. 14, pt. 3, 2 pp.

R. A. Khan Tahirkheli