

## RESEARCH NOTES

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### Primitive microstructures in Sargur Schists (Precambrian) near Mysore, Karnataka

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#### Abstract

Palynological probe of certain samples of ancient schistose rocks of Sargur, Mysore district, have revealed microstructures similar to forms described from the Onverwacht and Fig Tree Series of South Africa.

#### Introduction:

Primitive records of life from very ancient rocks form an interesting study. Recently a group of schistose rocks have been recognised to the southwest of Mysore which appear to form a group older than the Dharwars.

A cursory palynological probe of the representative samples of the ancient schistose rocks, particularly the crystalline limestones and quartzites from Sargur Schist Belt near Mysore was undertaken. The samples were subjected to maceration treatment using HCl and HF of specific concentrations. Care was taken to avoid contamination at all stages. Several maceration slides prepared from these residues showed typical primitive micro-structures which could be grouped into three morphologic types: spherical, ellipsoidal and colonial. Spherical microstructures preponderate over the other two types. The spherical microstructures range in size from 3–10 $\mu$ . The ellipsoidal ones exhibit a much larger diameter ranging from 38–50 $\mu$ , with their shorter diameter measuring 24–30 $\mu$ . The colonial forms on the other hand measure about 13  $\times$  5.5 $\mu$ . Brief notes of the several morphological types are presented below:

#### Morphologic notes:

##### Type I (Spherical)

###### *Form a*

Plate I, figs. 1, 4, 5

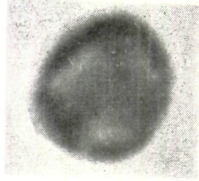
*Description:* Vesicles greyish to brownish black, spherical, 3–6 $\mu$ ; wall single layered, 1 $\mu$  thick, smooth, in some finely granulated, surface subopaque to opaque.

*Comparison:* Resembles microstructures described by Nagy (1971, p. 93) under Form-I from the Onverwacht Group of Swaziland sequence in South Africa.

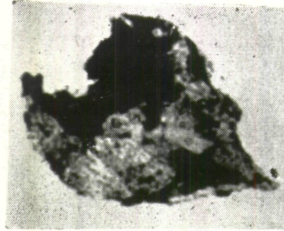
###### *Form b*

Plate I, figs. 6, 8

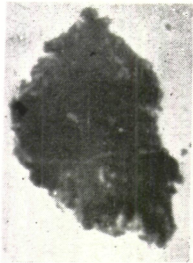
*Description:* Vesicles pale grey, spherical, 6–8  $\times$  10 $\mu$ ; wall single layered, occasionally two layered, 1 $\mu$  thick, granulated sparsely by fine granules, crumpled and broken, surface subtranslucent.



1



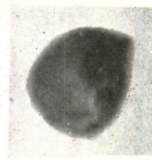
2



3



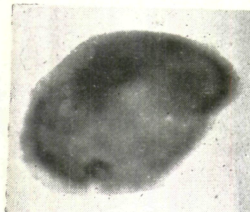
4



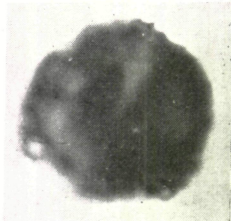
5



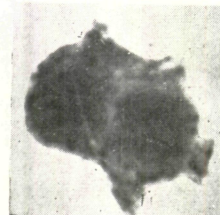
6



7



8



9

*Comparison:* Bear similarity to microstructures described by Nagy (1971, p. 93) under Form-I from the Onverwacht Group.

Type II (Ellipsoidal)

*Form a*

Plate I, fig. 2

*Description:* Vesicles ellipsoidal, broken, yellowish brown,  $50 \times 38\mu$ ; wall gently wavy,  $1\mu$  thick, furnished with dense granules; the longer axis of the granules roughly oriented parallel to the longer axis of the specimen; surface subopaque, partially covered by opaque mineral mass.

*Comparison:* Resembles Globular type A-2 bodies described by Pflug (1967, p. 16) from Fig Tree Series of the Swaziland sequence.

*Form b*

Plate I, figs. 3, 7

*Description:* Vesicles pale yellowish brown, ellipsoidal,  $38 \times 28\mu$ ; wall  $0.8\mu$  thick, wavy, finely granulated and almost completely covered by black opaque particles,

*Comparison:* Resembles Globular type A-3 bodies described by Pflug (1967, p. 18) from the Fig Tree Series.

Type III (Colonial)

Plate I, fig. 9

*Description:* Colonial, pale grey, individuals spherical,  $5.5\mu$ ,  $2\mu$  apart, colony  $13 \times 5.5\mu$ ; wall  $0.5\mu$  thick, granulated by fine granules, surface opaque.

*Comparison:* Resembles Form-I microstructures described by Nagy (1971, p. 93) from the Onverwacht Group.

**Conclusion:**

Majority of the microstructures show similarity to the forms described by Nagy (1971) from the Onverwacht Group (oldest known sedimentary rocks) occurring in Barberton Mountain Land, Eastern Transvaal, South Africa. Few other forms are identical with the types described by Pflug (1967) from the Fig Tree Series, of the same Barberton area in South Africa. The sedimentary rocks from the middle of the Onverwacht stratigraphic column have given an age of  $3375 \pm$  m.y. by the Rb/Sr method (Hurley, 1971). In the absence of reliable geochronological data for the Sargur rocks, the evidence furnished by these microstructures are interesting and worthy of further study.

**References**

- HURLEY, P. M., (1971) The missing piece of Gondwanaland—presented at symposium on *Geology and geochemistry of the Swaziland Sequence, Tucson, Arizona, May*, pp. 26-27.
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- PFLUG, H. D., (1967) Structural organic remains from the Fig Tree Series (Precambrian) of the Barberton Mountain Land (South Africa). *Rev. Palaeobot., Palynol.*, v. 5, pp. 9-29.