

Churk. is exposed a magnificent thrust fault along which a southerly syncline of Upper Quartzites (Lower Kaimurs) overrides a northerly anticline with the consequent development of disharmonic folds in the overlying Bijaygarh shales. This thrust structure is probably intimately related to the similar trending Markundi fault and caused by a northward oriented compressive stress.

All these evidences bear out that the Vindhyan rocks of Sone valley have been *a priori* subjected to N-NNW bound tectonic stresses.

Post-Graduate

N. DASARATHI.

Department of Geology,
Univ. of Jammu and Kashmir,
Jammu, June 15, 1966.

1. Auden, J. B., "Vindhyan sedimentation in the Sone valley, Mirzapur District." *Mem. Geol. Sur. India*, 1933, 62 (2).
2. Krishnan, M. S., *Geology of India and Burma*, 1956.
3. Pascoe, E. H., *A Manual of Geology of India and Burma*, 1959, 2.

SEED FAT OF *MOMORDICA TUBEROSA* OR *LUFFA TUBEROSA*

Momordica tuberosa or *Luffa tuberosa* is a plant of considerable economic importance as its green fruits are used as a vegetable. In view of this and the unique nature of the fatty oil which the seed contains, as shown later, the plant deserves better agricultural and horticultural attention. No data are available on the seed fat of the plant. Investigations on the seed from ripe fruits seasonally (January) available in Anantapur District were therefore undertaken.

From 11.25 kg. of fruits, 2.48 kg. of sun-dry seeds were obtained. Oil forms 25.3% of the whole seed and 40% of the kernels.

Kernels were extracted in cold by petroleum-ether which was cautiously removed under vacuum at low temperature. The oil thus extracted had the following characteristics: Colour, yellow-green; η_D^{25} 1.4993; F.F.A. 1.5; Iod. No. (Modified Wijs' method for conjugated system) 183 and Sap. V. 190.

The oil became a solid resembling crepe or spongy foam rubber after some days in presence of air. The solid was insoluble in common solvents like *n*-hexane, acetone, benzene, chloroform, carbon tetrachloride, etc., showing that it is a polymerized material of the oil.

The oil answers tests characteristic of a quick-drying polymerizable oil like tung oil containing high proportions of conjugated

trienoic acid like *alpha*-eleostearic acid. The tests are, red colour with methanolic solution of bromine and calcium bromide with nitric acid, ferric ammonium alum and ammonium thiocyanate,¹ a dark brown ring with chloroform solution of antimony trichloride¹ and gel formation followed by glassy wrinkles when exposed to sunlight or subjected to heat in presence of air.

TAXONOMY OF THE PLANT

The plant belongs to the botanical family *Cucurbitaceae*. Regarding genus, there are two classifications based on botanical characteristics, one placing it under *Momordica*² (*Momordica cymbalaria*, Fenzl ex Naud syn. *Momordica tuberosa* Roxb. Cogn) and the second under the genus *Luffa*³ (*Luffa tuberosa*). In the present work, it is shown that the seed fat of the plant contains a conjugated triene acid as that of *alpha*-eleostearic acid which is a characteristic of seed fats of *Momordica* genus: *M. charantia* contains 46.7%,⁴ 43.7%⁵ and *M. dioica*, 54.9%⁴ of *alpha*-eleostearic acid. *Luffa* genus is not reported to contain conjugated triene acid.⁴

Oil Technological

G. AZEEMODDIN.

Research Institute, S. D. THIRUMALA RAO,
Anantapur, August 26, 1966.

1. Mehlenbacher, V. C., *The Analysis of Fats and Oils*. The Garrard Press, Champagn, Illinois, 1960, p. 256.
2. —, *The Wealth of India, Raw Materials*. Ed. by B. N. Sastri, C.S.I.R., New Delhi, 1962, 6 (L-M), 412.
3. Chakravarty, H. L., *Monograph on Indian Cucurbitaceae (Taxonomy and Distribution)*, Government of India Press, Calcutta. 1959, p. 81.
4. Hilditch, T. P. and Williams, P. N., *The Chemical Constitution of Natural Fats*, 4th Edition, Chapman and Hall, 1964, p. 251.
5. Shafiq Ahmad Khan, Muhammad Ilyas Qureshi, Muhammad Khurshid Bhatti and Karimulla, *Pakistan J. Sci. Int. Res.*, 1961, 13, 111; *C.A.*, 1962, 56, 15624⁹.

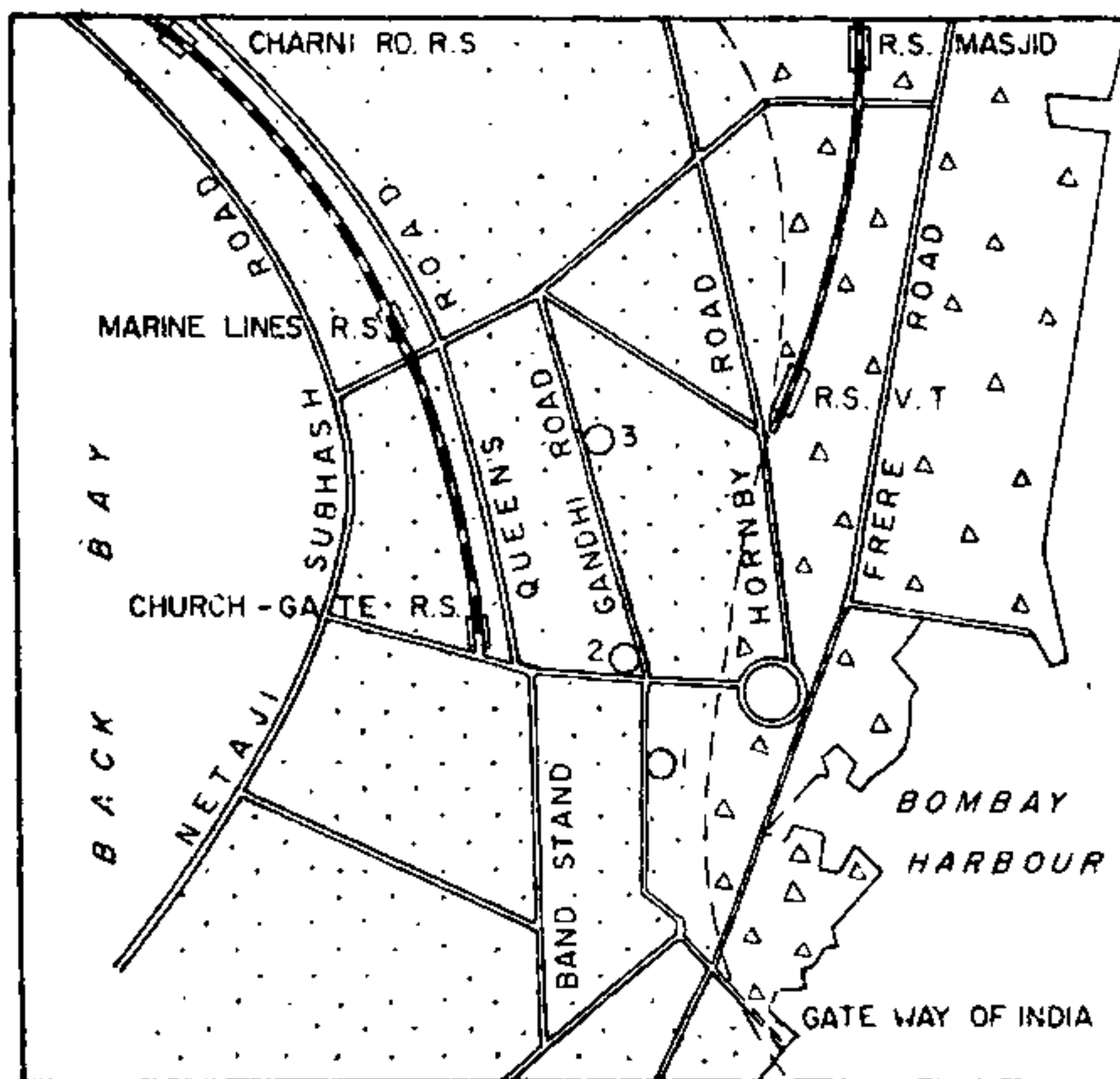
NOTE ON SOME MICROFOSSILS FROM THE FORT AREA, BOMBAY

THE first author of this paper, during a visit to Bombay in 1965, examined some well sections in the Fort area, where sweet water was available within 7m. of ground level in open wells piercing a bed of soft semi-consolidated materials of greyish colour. Megascopic examination of these materials, which are calcareous, revealed the presence of organic particles, mainly foraminiferal tests and broken shells, comprising chiefly lamellibranchs, and some minute mineral fragments associated with clayey and oolitic

granules. The fossiliferous bed, having a thickness of about 7 m., has been deposited over the Deccan Traps and appears to have been subsequently raised to the present level. The area from which the fossiliferous material was collected essentially forms a flat ground on the western side of the Bombay island stretching north-south through the Oval ground, Mahalakshmi Race Course and further beyond having an areal extent of about 10 km.²

The following microfossil assemblage¹⁻⁸ has been identified in the materials collected from a small open well inside the Gymkhana Club (Well No. 3 in Fig. 1).

GEOLOGICAL MAP OF BOMBAY AREA SHOWING FOSSIL LOCALITY
SCALE 1 : 31,680



I N D E X

- Semi-consolidated fossiliferous bed
- Deccan trap
- Open wells examined in the Fort area
- Gymkhana well from which sample of fossiliferous material was collected

FIG. 1

1. Foraminifera :

(1) Family—Miliolidae d'Orbigny, 1839.

- Quinqueloculina seminula* (Linn.)
- Quinqueloculina* sp. indet.
- Triloculina trigonula* (Lamarck)
- Massilina secans* (d'Orb.)
- Præmassilina rugosa* (Sidebottom)
- Spiroloculina antillarum* d'Orb.
- Miliola saxorum* Lamarck.

(2) Family—Rotaliidae Reuss, 1860.

- Streblus beccarii* (Linne)
- Anomalina balthica* Schr.
- Anomalina* sp.
- Cibicides* sp.

(3) Family—Nonionidae Reuss, 1860.

- Nonion* cf. *scapha* (Fich.)
- Elphidium minutum* Reuss.
- Elphidium* aff. *craticulatum* (Fichtel and Moll).
- Elphidium* sp. indet.

2. Ostracoda :

- Bairdia* sp.
- Henryhowella* sp.

A study of the fossil assemblage suggests that the material examined may be Miliolite Limestone,³⁻⁵ so common along the west coast or may be 'Littoral Concrete'⁵ referred to by Pascoe (1963 ; p. 1906). The microfossils and the degree of their fossilisation is suggestive of a Pleistocene to Sub-Recent age for the contained bed. The authors are not aware of any previously published record of the microfauna from the Fort area, Bombay.

Besides the important fossil assemblage referred to, the fossiliferous bed described above is of economic significance in that it forms a good aquifer from which fresh groundwater can be tapped.

3-6-291, Hyderguda, V. SUBRAMANYAM.
Hyderabad-1 (A.P.), K. K. VERMA.
August 27, 1966.

1. Manalac Samaniego, R. and Gonzales, B. A., *Journ. Pal. Soc. India*, 1957, 2, 193.
2. Cushman, J. A., *Foraminifera, Their Classification and Economic Use*, 1959.
3. Sastri, V. V. and Pant, S. C., *Proc. Ind. Sci. Cong., Abstracts*, 1960, 3, 275.
4. Bold, W. A. van den, *Micropalaeontology*, 1963, 9 (4), 361.
5. Pascoe, E. H., *A Manual of the Geology of India and Burma*, 1963, 3, 1882 and 1906.
6. Galloway, J. J., *A Manual of Foraminifera*, 1961.
7. Bhatia, S. B. and Bhalla, S. N., *Jour. Pal. Soc. India*, 1964, 4, 78.
8. Bold, W. A. van den, *Micropalaeontology*, 1965, 11 (4), 381.

ENSTATITE, ENDIOPSIDE AND DIOPSIDE FROM THE KONDAPALLI AREA

DURING the course of a mineralogical study of the ultrabasic rocks from the charnockitic region of Kondapalli (lat. 16° 37' and long. 80° 32'), Krishna District, Andhra Pradesh, the author has investigated in detail the pyroxenes from orthopyroxenite (48), clinopyroxenite (472) and websterite (323). The orthopyroxene 48 (+ 2 V = 80°; $\gamma = 1.676 \pm 0.002$) forms 98% by volume of the rock and the clinopyroxene (472) forms 91% of the respective rock ; both the pyroxenes contain very rare (100) exsolution lamellae. The orthopyroxene (323) shows occasional (100) exsolution lamellae of clino-