is possible that silica content in coconut samples collected from Kerala may be associated with the available soluble silica in soil.

The author is thankful to Dr. A. K. Ganguly, Head, Health Physics Division, for his encouragement and guidance in the course of the work.

Health Physics Division, T. N. V. PILLAI.
Bhabha Atomic Research
Centre, Trombay,
Bombay-74, *October* 13, 1967.

1. Menon, K. P. V. and Pandalai K. M., *The Coconut Palm—A Monograph*, Indian Central Coconut Committee, Ernakulam, 1960.
2. Scott, W. W., *Standard Methods of Chemical Analysis*, Van Nostrand Co., Inc., 1939, 1.
3. Ralph, K. Iler, *The Colloid Chemistry of Silica and Silicates*. Cornell University Press, Thaca, New York, 1955.
4. Private Communication, 1967.

COMPONENT FATTY ACIDS OF THE SEED OIL OF *BOSWELLIA SERRATA* (ROXB.)

Boswellia serrata, the Indian Olibanum (Marathi : *Kundur*, Hindi : *Salai*) is a moderate sized gregarious tree belonging to the family *Burseraceæ*. It is distributed in the tropical parts of Asia and Africa. The gum is used in rheumatism, nervous diseases and urinary disorders.[1] The flowers and the nuts are eaten by the Bhils. Work has been reported on the chemical examination of its gum oleo-resin and wood,[2-4] and the present study concerns the fatty oil from the seeds.

Fruits were collected from the trees on hilly areas in Nagpur and the seeds were powdered without separating the testa, and extracted exhaustively with petroleum ether (B.P. 40–60°). The extract was filtered and the solvent removed under reduced pressure to leave behind a yellow oil (8·7%) which had the following characteristics : Refractive index (η_D^{35}) 1·4682 ; F.F.A. 4 ; Iod. N. 116 ; Sap. value 195 ; unsaponifiable matter, 2·1%. Oil was saponified and the fatty acids obtained were converted to methyl esters.

The methyl esters were dissolved in a small amount of chloroform and immediately injected into a Gas-Liquid Chromatographic apparatus, an F and M Model 720 dual column temperature programmed unit, provided with thermal conductivity detector. The conditions of operation were as follows : column, 8 ft. × 3/10 inch (OD) in stainless steel ; packing, 20% DEGS on chromosorb W (mesh 45–60) ; carrier gas, hydrogen with flow rate 50 ml./minute ; injection port temperature, 300° ; detector block temperature, 290° ; column temperature, 220° ; current, 150 ma ; attenuaton 4 ; chart speed, 30 in./hour ; Hamilton 10 µl. capacity syringe was used for injection of the samples. 3 µl. of the methyl ester sample in chloroform was injected. Comparison of the retention times of unknown compound with authentic samples were used for confirming the peaks. Quantitative determinations were made by calculating the area under each peak by triangulation. The results given are percentages of the sum of the areas of all the peaks as well as the molar percentages (Table I).

TABLE I

Gas-liquid chromatographic results of the analysis of the esterified fatty acids

Peak No.	Fatty Acid Ester	Methyl Ester %	Molar %
1	Palmitate	14·2	15·3
2	Stearate	9·7	9·5
3	Oleate	13·7	13·3
4	Linoleate	62·4	62·0

Methyl esters analysed by GLC contain palmitic, stearic, oleic and linoleic acids. It appears that this species though it contains the same acids as others of the same family[5-7] shows more of linoleic and less of oleic acids.

The authors wish to express their sincere thanks to Dr. K. T. Acchaya, Dr. Subbaram, Regional Research Laboratory, Hyderabad, and to Mr. P. B. Devdhar, Department of Pharmacy, Nagpur University, for GLC analysis.

Department of Chemical Technology, H. A. BHAKARE.
Laxminarayan Institute of Technology, C. V. N. RAO.
Nagpur University,
Nagpur, *August* 29, 1967.

1. *Watt. Dict. of Eco. Prod.*, 1, 515.
2. Fowler, G. J. and Malandkar M. A., *J. Ind. Inst. Sci.*, 1921, **4**, 27.
3. — and —, *Ibid.*, 1925, **8 A**, 240.
4. Goswami, M. and Sen, N., *Indian Soap Journal*, 1942, **8**, 252.
5. Hilditch, T. P. and Stainsby, W. J., *J. Soc. Chem. Ind.*, 1934, **53**, 197.
6. Pastrovich, L., *Chem. Ztg.*, 1907, **31**, 781.
7. Steger, A. and Van Loon, *J. Rec. trav. Chim.*, 1940, **59**, 168.