the stomach or intestine. Demonstrable necrosis was apparent 30 min after administration of the drug and persisted for a few hours. Smith & Butler (1974) used no drug treatment so the presence of aspirin or indomethacin does not account for this phenomenon. Tolerance akin to immune tolerance does not explain the lack of an inflammatory response in these circumstances. Tolerance in this sense is an acquired characteristic but the inflammatory response is not evoked by aspirin or indomethacin at the first or indeed after several doses. One must consider either that a chemotactic influence is absent or that there is a factor present inhibiting the inflammatory response in the gastrointestinal mucosa. In view of the large number of chemotactic factors which have been identified it is highly unlikely that all will be absent from gastrointestinal mucosa.

The most likely of the possible reasons for this phenomenon is that an inhibitor of cellular chemotaxis exists in the gastrointestinal mucosa. This proposal is not as unlikely as it might seem. Cells of the gastrointestinal mucosa are constantly exposed to foreign proteins, amino-acid residues etc. which in other sites would elicit an inflammatory response. Wilkinson (1974) has shown that most chemotaxins are polypeptides or proteins and it might be supposed that unless an inhibitor exists absorption of these materials in the gastrointestinal system should provoke an inflammatory reaction.

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REFERENCES

Brodie, D. A., Tate, C. L., Hooke, K. F. (1970) Science 170: 183–185

Muir, A., Cossar, I. A. (1961) Am. J. Dig. Dis. 6: 1115–1125

Robins, P. G. (1978) Some studies on the pathogenesis of drug induced gastric erosions. Ph.D. Thesis, University of London

Smith, B., Butler, M. (1974) Br. J. Exp. Pathol. 55: 615–621

Wilkinson, P. C. (1974) Chemotaxis and Inflammation. Churchill Livingston, Edinburgh & London p 54

Scirpus kysoor Roxb. a new plant source of progesterone

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The tubers of the plant *Scirpus kysoor* Roxb. Cyperaceae or 'Kaseru' are mentioned in the Indian system of medicine for the prevention of abortions. We have made chemical and pharmacological investigations to find the responsible compounds for uterine sedative activity.

Roxburgh (1874) equated the plant Kaseru with *Scirpus kysoor*. The tubers, collected by us, in winter from Western coastal areas of India, were authenticated; dried and coarsely powdered. Phytochemical tests showed the presence of steroids, sugars, tannins, starches and saponins.

The acetone extract had no effect on the rat uterus in vitro (Turner 1965). It blocked oxytocin but not acetylcholine-, 5-hydroxytryptamine- and $BaCl_2$-induced contractions. After adsorption of the acetone extract on Supercel the activity was eluated with light petroleum (b.p. 40°–60 °C), and the eluant chromatographed on neutral grade alumina using light petroleum (b.p. 40°–60 °C). The extract, on drying under vacuum yielded a residue, which was crystallized to constant m.p. 128 °C. The structure of the compound was determined by micro-analysis, mass, i.r., u.v., n.m.r. and was suspected to be progesterone. It was confirmed by mixed m.p., superimposition of i.r. and preparation of the dioxime derivative.

* Correspondence

Small amounts of progesterone appear to occur in yeast, wheat, rice, cabbage and potato (Ramstad 1959). Progesterone-like activity is reported from white beans (Sütö-Nagy 1940). Gawienowski & Gibbs (1968) detected the presence of cholesterol and progesterone in apple seeds. The occurrence of progesterone with alkaloids is reported from *Holarrhena floribunda* (Michel et al 1969).

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REFERENCES

Gawienowski, A. M., Gibbs, C. C. (1968) Steroids 12 (4): 545–50

Michel, L., Andre, C., Robert, G. (1969) Ann. Pharm. Fr. 27 (3): 217–28

Ramstad, E. (1959) Modern Pharmacognosy, McGraw Hill Book Co. London, New York, Toronto, p. 122

Roxburgh, W. (1874) Flora Indica or Description of Indian plants, Thacker Spink & Co. Calcutta, p 77

Sütö-Nagy, G. de. (1940) Proc. Soc. Exp. Biol. Med. 43: 674–75

Turner, R. A. (1965) Screening methods in pharmacology, Academic Press, New York and London, p 119