A number of drugs when injected into the thoracic aorta produce a discharge of impulses similar to that produced by 100 μ gm. phenyldiguanide. Among them are 5-hydroxytryptamine (100 μ gm.), lobeline (1 mgm.), nicotine (1 mgm.), adrenaline (100 μ gm.), and glucose (0.5 gm.). The depressing effect of adrenaline on hunger could, therefore, be explained by its stimulating action on gastric stretch receptors. Further, a new concept is provided for the association of blood-sugar levels and hunger. With the present hypothesis it would thus seem possible to reconcile the diverse views and observations on the peripheral mechanism of hunger.

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¹ Paintal, A. S., *J. Physiol.* (in the press).

² Mott, J. C., and Paintal, A. S., *Brit. J. Pharmacol.*, **8**, 233 (1951).

³ Langworthy, O. R., and Ortega, L., *J. Comp. Neurol.*, **79**, 425 (1943).

⁴ Share, I., Martyniuk, E., and Grossman, M. I., *Amer. J. Physiol.*, **169**, 229 (1952). Janowitz, D., and Grossman, M. I., *Amer. J. Physiol.*, **159**, 143 (1949). Grossman, M. I., and Stein, I. F., *J. Applied Physiol.*, **1**, 263 (1943).

Effect of Two Systems of Management on Milk Yield and Body Temperature of Dairy Cattle

In the winter season in Egypt, cattle are either kept indoors and provided with barseem (*Trifolium alexandrinum*), or taken to the fields and fed with the same ration for a period of about ten hours during the day. The experiment described here was carried out at the University Experimental Farm, Alexandria, in order to study the effect of the two systems of management on milk-yield and body-temperature of dairy animals.

Two groups of native cows, each of three individuals, nearly in the same stage of lactation, were subjected to the indoor and the outdoor conditions for ten days alternately for a total period of 80 days. Therefore each group of cows spent 40 days in each of the two systems. Milk yield was recorded three times daily, and the rectal temperature was read at each milking. The average results obtained are given in Table 1.

There are no significant differences between the milk yield and body-temperature of the cows in the two systems. These results might only be expected in certain conditions. However, the average tem-

perature in the stable during the period of study ranged between 13.4° and 21.5° C., whereas the corresponding atmospheric temperature was 12.5° and 19.7° C. respectively.

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Occurrence of *Pterophyllum* in the Parsora Beds, South Rewa, India

DURING February–March 1953, a collection of fossil leaf impressions was made by me from several localities of the South Rewa Gondwana basin, including the well-known locality of Parsora, the floral assemblage of which raised a long-held controversy regarding the age of these beds and their position in the Gondwana system of India. The flora will be described in detail elsewhere. In this communication, I wish to record the finding of two specimens of a hitherto unreported frond recalling *Pterophyllum*. The frond (Fig. 1) is incomplete, pinnate, with a stout and straight rachis measuring 17 cm. in length; 6 cm. in breadth; pinnae linear, closely set, more or less equal in breadth with one exception, attached to the rachis at right angles and by the whole of their slightly decurrent bases; maximum length exposed of the pinnae 10 cm. and average breadth 3 cm.; veins many, averaging fifty, distinct, 0.5–0.8 mm. apart, usually bifurcating close to their emergence, where they take a narrow upward curve and then run parallel to the edge of the pinna, rarely showing bifurcation again.

In general appearance and form, the Parsora specimens bear some resemblance to *Nilssonia princeps* (Old. and Morr.) Seward, and to certain large fronds of *N. compta* (Phillips) Bronn¹. Since not many specimens are available for study at present, it is difficult to say whether on the other side of the frond, which is not exposed to view, the pinnae are

Fig. 1. *Pterophyllum* sp. from the Parsora beds ($\times$ about $\frac{1}{2}$)

Table 1

	Outdoor system	Indoor system
Milk yield (lb.)		
at 7.00 a.m.	6.25 $\pm$ 0.183	6.20 $\pm$ 0.208
" 1.30 p.m.	3.85 $\pm$ 0.137	3.85 $\pm$ 0.116
" 9.00 p.m.	3.85 $\pm$ 0.139	3.88 $\pm$ 0.126
Average	4.65 $\pm$ 0.153	4.64 $\pm$ 0.150
Body temperature ($^{\circ}$ C.)		
at 7.00 a.m.	37.9 $\pm$ 0.052	37.8 $\pm$ 0.049
" 1.30 p.m.	38.2 $\pm$ 0.044	38.2 $\pm$ 0.044
" 9.00 p.m.	38.1 $\pm$ 0.047	38.0 $\pm$ 0.047
Average	38.1 $\pm$ 0.047	38.0 $\pm$ 0.046