It is interesting to record that the effect of drying on the viability of the cysts was reflected in the growth of the plants. The plants growing in soil which had been air-dried for periods of 6, 9, 12 and 15 months were comparable in size and vigour with plants which were growing in tubes of non-infected soil, and showed no symptoms of eelworm attack. On the other hand, plants growing in the infected soil which had been air-dried for periods of 1 and 3 months showed symptoms of severe eelworm attack and were very dwarfed and diseased-looking.

The hatching experiments of Winslow[1] and of Hesling[2] suggest that cysts of *H. major* are far more sensitive to drying than the above-mentioned observations made by me found them to be. It is possible that the effect of drying becomes more pronounced when the cysts are removed from the soil, a factor which might explain this apparent contradiction in results.

J. J. DUGGAN*

Agricultural Zoology Department,
University College,
Dublin.

* Now Senior Research Officer, Nematology Department, Agricultural Institute, Dublin.

[1] Winslow, R. D., *Ann. App. Biol.*, **43**, 19 (1955).
[2] Hesling, J. J., *Nematol.*, **1** (1), 56 (1956).

Albinism in *Cryptomys hottentotus* Lesson, 1826

IN an earlier communication[1] I reported the occurrence of what appeared to be an albino specimen of the above species of mole-rat. I am grateful to Miss D. Watson for a further and similar example, collected on November 12, 1958, at a point within a few hundred yards of where the first animal was taken.

As in the previous instance the mammal was taken on the surface, and was examined while still alive. In all respects the coloration was similar to that previously described, except that the dietetic staining was not so pronounced. The specimen, an adult male, was preserved entire, and revealed the following body measurements: head and body, 130·0 mm.; tail, 15·0 mm.; hind foot s.u., 22·0 mm. The cheek teeth were again simple, 4/4.

Previously I stated that normal specimens of *C. hottentotus* at Inyanga possessed a "variable white head-spot which is sometimes vestigial". Since this was written I have handled specimens of adults, taken side-by-side with head-spotted examples, in which the head-spot has been entirely absent. Thus it seems that Inyanga specimens are the antithesis of those described by Roberts[2], who notes the position regarding head-spots as "white frontal spots are not infrequent, but abnormal". The converse may be said to be true at Inyanga.

It might be of further interest to note that while the tail normally has a length of about 11·0–22·0 per cent of head and body-length, some specimens may have tails as long as 30·0 per cent of head- and body-measurement.

PETER ST. J. TURNBULL-KEMP

Rhodes Inyanga Estate and National Park,
Rusape,
Southern Rhodesia.

[1] Turnbull-Kemp, P. St. J., *Nature*, **182**, 63 (1958).
[2] Roberts, A., "The Mammals of South Africa" (Trustees of "The Mammals of South Africa" Book Fund, Johannesburg, 1951).

Quantitative Immuno-Analysis in Gel Plates

I CANNOT let pass unchallenged certain assertions made by Wright[1] in his communication in *Nature* of May 2, 1959, with reference to my method for quantitative immuno-analysis in agar gel plates[2]. Dr. Wright states: "Although there are several methods available, none of them is easily applicable to a multi-antigenic system, and in addition the concentrations of the proteins can only be estimated separately, even under favourable conditions, at ±10 per cent and more usually ±50 per cent".

The entire joy of the quantitative plate method, as outlined in my original communication[2] and since extended[3-5], is that it permits the ready titration of multi-antigenic systems and the simultaneous assay of individual antigens, often on a single plate. It has the further advantage of not requiring titration to an end-point, assays being readily performed by comparison of precipitation patterns.

As for the sensitivity of the technique, claims below ±10 per cent have not been made simply because we have never felt the need for greater accuracy and have been content to use, at the narrowest, 1·1× serial dilutions. A narrower dilution gradient, as used by Wright in his technique, could well produce accuracies better than ±10 per cent.

J. G. FEINBERG

Bencard Allergy Research Unit,
Beecham Research Laboratories,
Brockham Park,
Betchworth, Surrey.

[1] Wright, S. T. C., *Nature*, **183**, 1282 (1959).
[2] Feinberg, J. G., *Nature*, **177**, 530 (1956).
[3] Feinberg, J. G., *Int. Arch. Allergy*, **11**, 129 (1957).
[4] Feinberg, J. G., Proc. Fourth Int. Congr. Biol. Standards, 194 (1958).
[5] Feinberg, J. G., *Immunol.* (in the press).

MICROBIOLOGY

Exogenous Respiration in *Nitrobacter*

DURING the course of an investigation of the oxidation of nitrite by the nitrite-oxidizing bacterium, *Nitrobacter*, it was noted that the addition of sodium nitrite but not sodium nitrate to heavy cell suspensions caused the immediate appearance of reduced cytochrome bands at 590, 551 and 513 mμ when viewed in the hand spectroscope[1]. This phenomenon, which has been noted previously by Lees and Simpson[2], is due to the passage of electrons through the respiratory chain when nitrite is oxidized to nitrate. Whether or not nitrifying bacteria respire in response to substrates other than their energy source has been disputed, although Bömeke[3] reported a slight stimulation of the respiration of *Nitrobacter* when certain metabolites were added to cell suspensions in the Warburg respirometer. If some reduced substance is oxidized by resting cells and if a cytochrome-linked pathway is employed for the oxidation of all substances which can permeate the cell, then any substance which might increase the rate of respiration in the Warburg respirometer should also cause a reduction of the cellular cytochromes. The validity of this rationale was tested in the following manner.

Cultures grown for 4–8 days at 25° C. on a reciprocating shaker in a mineral medium (gm./l.: sodium nitrite, 1·0; sodium chloride, 0·5; dihydrogen potas-