of casein was approximately the same as in the injected glutamine.

It has been postulated that γ-glutamyl peptides formed from glutamine by enzymatic exchange reactions are important intermediates in protein synthesis[2]. The present results suggest that the glutamine which is incorporated into casein does not exchange or lose its amide nitrogen in the process, and therefore apparently does not pass through intermediate γ-glutamyl peptides.

Techniques which differed from those used in previous work on casein synthesis[1] were as follows. 1-^{14}C DL-glutamine was synthesized from 1-^{14}C DL-glutamic acid by the method of King and Kidd[3]; amide-^{15}N DL-glutamine was synthesized from DL-glutamic acid and ^{15}N ammonia by a slight modification of the same method. The pancreas suspension contained 25 gm. of fat-free and minced pig pancreas/100 ml. 25 per cent ethanol; before use it was incubated and then dialysed to remove amino-acids. Glutamine and glutamic acid were isolated from blood plasma, and protein hydrolysates, by chromatography on 'Dowex-50' resin. Specific activities of carbon No. 1 of glutamine and glutamic acid were measured after decarboxylation with glutamic decarboxylase. The amide nitrogen was obtained from glutamine for ^{15}N analysis by converting to pyrrolidone carboxylic acid and ammonia.

I am indebted to Dr. D. D. Woods for providing the glutamic decarboxylase and pancreas suspension, and to Dr. D. H. Tomlin for making the determinations of nitrogen-15.

J. M. Barry

Department of Agriculture,
University of Oxford.
June 10.

[1] Barry, J. M., *J. Biol. Chem.*, **195**, 795 (1952).
[2] Waelsch, H., "Adv. Enzymol.", **13**, 237 (1952).
[3] King, F. E., and Kidd, D. A. A., *J. Chem. Soc.*, 3315 (1949).

A Case of *Shigella sonnei* Septicæmia in a Calf

During the course of routine laboratory examinations performed on a long bone from a two months-old calf, which died without symptoms the previous day, we isolated in pure culture from the bone-marrow a strain of a Gram-negative, non-motile, non-spore-forming organism.

At the time of the isolation, it exhibited the following characteristics:

Glucose	acidified without gas in 24 hr.
Lactose	acidified without gas in ten days
Saccharose	acidified without gas in eight days
Mannitol	acidified without gas in 24 hr.
Rhamnose	acidified without gas in four days
Salicin	no fermentation recorded in thirty days
Xylose	no fermentation recorded in thirty days
Methyl red reaction	positive
Voges–Proskauer reaction	negative
Indole	no production recorded
Hydrogen sulphide	no production recorded
Urease	no production recorded
Sodium citrate	no growth recorded
IMViC formula is thus	− + − −

As those were the characters of *Shigella sonnei*, the agglutination with an antiserum was performed and confirmed the identification.

This is the first case, so far as we know, of a human *Shigella* occurring in an animal, either as an intestinal infection or as a septicæmia. The finding of *Sh. sonnei* in the medulla is not extraordinary, since it has already been described in human beings[1]. The importance of our finding is still to be assessed, especially for its repercussion in meat hygiene.

We are indebted to Dr. R. Buttiaux for confirmation of our diagnosis. Full details of our investigations will be published elsewhere.

J. Deom
J. Mortelmans

Laboratoire Vétérinaire,
Elisabethville,
Belgian Congo.
March 15.

[1] Tatham, P., Williams, T. P., and Stewart, G. T., *Lancet*, **260**, 997 (1951).

Identification of Certain 'Ketosteroids' from Cattle Urine as Ionone Derivatives

In recent years, our knowledge of 17-ketosteroid excretion and metabolism in the human being has greatly increased. However, in the little research work in this field which has been devoted to cattle, great uncertainty has always prevailed regarding the nature of the compounds measured by the Zimmermann or Pincus reaction. All investigators are agreed that the steroids from cattle urine could in no case be identical with the 17-ketosteroids from human urine[1].

A short time ago we succeeded in identifying several of these compounds as ionone derivatives, which Prelog and his co-workers isolated from pregnant mares' urine[2]. The presence in cattle urine of these substances had been surmised by Klyne (personal communication). One of the two main fractions, which we obtained by chromatography of the neutral ketonic lipid fraction from cattle urine, without regard as to whether it was urine from bull, cow or ox, proved to contain (2,3,6-trimethyl-benzal)-acetone (Prelog's ketone *J*) among other, as yet unidentified, compounds. The other main fraction consisted almost entirely of 5-hydroxy-*cis*-tetrahydro-ionone (Prelog's hydroxyketone *G*) and a smaller fraction, which follows the second main fraction, consisted of this compound and 5-oxo-*cis*-tetrahydro-ionol (Prelog's hydroxyketone *E*). The presence in cattle urine of other ionone derivatives which have been isolated from mares' urine, such as 5-oxo-*cis*-tetrahydro-ionone (Prelog's diketone *D*), 2,2,8-trimethyl-bicyclo-[0,0,4]-dekadien-5,7-one-4 (Prelog's ketone *K*) and a bicyclic hydroxyketone of not fully established structure (Prelog's hydroxyketone *C*), is not excluded, but as yet not definitely proved.

It is very remarkable that all these substances react in the Zimmermann test. The absorption spectra of several of the coloured compounds are identical with those of cattle urine extract: an absorption curve which falls continuously from shorter to longer wave-lengths with a more or less pronounced plateau at about 500 mμ. One of the compounds (ketone *J*) even gives a pure violet Zimmermann colour which is similar to that of 17-ketosteroids. It shows a distinct absorption maximum at 530 mμ and low absorption at shorter wave-lengths.

With the Pincus reagent the hydroxyketone *G* gives a blue-violet colour with an absorption maximum at 550 mμ, identical with the colour given by the second main fraction from cattle urine extract. In some