we made a photograph on an Ilford film on the back of which a Fluorazure screen (Levy-West) was placed (Fig. 1, *b*). Identical results were now obtained with exposure reduced to 15 min., while there appeared to be practically no increase of width.

While at the ends of Fig. 1, *a*, the subdivision into α_1 and α_2 lines is fairly visible, Fig. 1, *b* still gives some slight evidence of their presence.

Other experiments were made at 30 kV. with an Ilford film at the back of which was a Fluorazure screen; the exposure was 15 min. While giving better contrast, blackening proves to be less; so that here the disadvantage seems to outweigh the advantage.

As usual in medical radiology, we also placed screens in front of and at the back of the film, but this gave, as might be expected, less blackening in the same time than with a screen at the back only; moreover, increase of width becomes manifest in that case.

We suggest that the use of Fluorazure screens is helpful in structure analysis; especially with the long exposure necessary in fibre research, it has evident advantages. Meanwhile, further research is being conducted along these lines.

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Living Animal Cases of Congenital Porphyrinuria

SOME time ago, in a single herd of grade shorthorn cattle, running with one bull, on a farm in Swaziland, five living cases of congenital porphyrinuria were discovered. From the account given by the farmer, there had been seven other cases in the herd. Only one bull (a pure-bred, roan shorthorn) had been used during this period, and on an adjoining farm where he had also been employed, one case had occurred with certainty. The bull himself is normal but his dam was said to have been an unthrifty animal; possibly she, also, may have been a porphyrinuric.

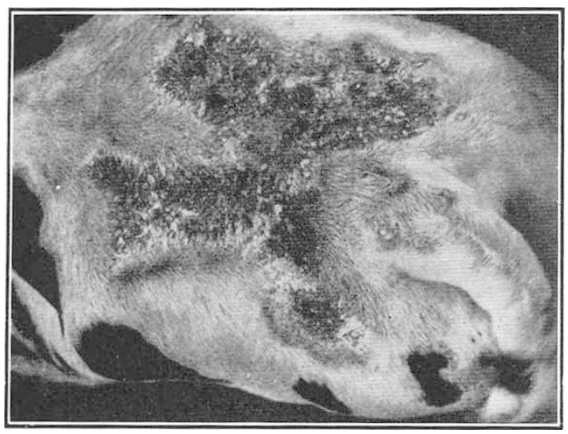

Fig. 1.
PHOTOSENSITIZATION LESIONS ON BACK OF 'CEDARA', A COW SUFFERING FROM CONGENITAL PORPHYRINURIA.

The bull, four of the affected cattle and others, most of which are descended from him but normal, have been acquired by this Laboratory with a view to intensive study of the clinical features of the disease and its mode of inheritance. The fifth affected animal was slaughtered and a detailed chemical investigation carried out *post mortem*. In the forthcoming number of the *Onderstepoort Journal of Veterinary Science* (**7**, No. 2) papers are contributed by the writers of this note describing in full their findings. The two most severely affected animals each excrete about 0·6 gm. coproporphyrin and 0·06–0·07 gm. uroporphyrin daily, the others about half these quantities only. They show signs of photosensitization.

We also wish to record that a female calf which suffers from the disease has now been born at the Laboratory. It was the progeny of the bull with one of his normal daughters. The animal was seen approximately two hours after its birth, and the teeth were then distinctly pinkish-brown in colour. It is red-coated and although small is not apparently seriously handicapped in any way. It passes about 7·7 mgm. coproporphyrin per 100 gm. dry weight of fæces and about 40 γ per 100 ml. in the urine. A second heifer calf, born on the same day, sired by the bull out of another normal daughter, is perfectly normal in every respect. It excretes 0·41 γ coproporphyrin per 100 ml. of urine and but traces, only recognizable fluoriscopically, in the fæces.

Yet another case has recently been discovered, quite unrelated to the herd described above. This is a black-and-white cow about eight years of age. She shows marked lesions of photosensitization, involving only the white areas of skin on the back (see Fig. 1). This cow is in calf to a normal bull. She has reared one calf previously (apparently normal) but has also aborted.

A histopathological study of the bones and organs taken from the porphyrinuric animal which was killed is being made with the aid of an ultra-violet fluorescence microscope, and these findings will be published shortly. The bones, it may be mentioned, show on cross-section annular zones of pigment of varying intensity.

We believe these to be the first living cases of porphyrinuria in animals ever to be described, and the wealth of our material makes it highly probable that by breeding experiments we may be able successfully to elucidate the mechanism of inheritance of this very rare metabolic anomaly.

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Sex-Biology of the Oyster and the Salmon

THERE are similarities in the sex-biology of the oyster, *O. edulis*, and the salmon, *Salmo salar*, which may prove to be fundamental in character.

It is known that very young salmon remain in fresh-water as parr a variable time. Very rapid growth in the first year of life is often followed by development of the sea-migratory instinct, when the young fish acquires the attributes of, and departs for the sea as, a smolt. On the other hand, slow-growing parr may remain in fresh-water two, three or four years[1].