IV. THE EFFECT OF A DIET DEFICIENT IN ANIMAL FAT ON THE BONE TISSUE (RIB JUNCTIONS) OF KITTENS.

BY FRANCES MARY TOZER.

From the Department of Experimental Pathology, Lister Institute.

(Received November 15th, 1920.)

THE following remarks are based upon the examination of the rib junctions of the kittens used by Dr H. Mackay, in the foregoing experiments [Mackay, 1921].

Dr Mackay kindly supplied me with the material before giving particulars of the treatment of each animal in order that the diagnosis of the condition of the bone tissue might be unbiassed.

The results of the examination are as follows:

1. The rib junctions of the *control animals* Nos. 2, 3 and 9, were all diagnosed as "normal" with a reservation in the case of No. 3 that the bony trabeculae appeared to be slightly shortened and less normal in appearance than those of No. 2.

It will be observed on reference to Dr Mackay's paper that No. 3 was poorly nourished whereas No. 2 was well nourished. The difference in general condition is possibly sufficient to account for and explain the slight difference in histological condition.

2. The *experimental animals* (Nos. 1, 4, 5, 6 and 7). None of these animals was diagnosed without comment as "normal." No. 1 showed a very slight disorganisation of the bony trabeculae, a pronounced and possibly abnormal increase in length of the rows of cartilage cells and a slight degree of atrophy of the marrow.

Nos. 4, 5 and 7 showed considerable shortening of the bony trabeculae, slight shortening of the rows of cartilage cells and varying degrees of atrophy of the marrow—doubtful in 4 and 5 considerable in 7.

No. 6 was nearly normal except for the condition of the marrow which resembled No. 7.

The abnormalities at the costo-chondral junction in these kittens do not appear to resemble those characteristic of rickets, the only suggestion of any connection between the two conditions being the possibly abnormal length of the rows of cartilage cells in No. 1. They do however correspond closely with the changes seen on examination of the rib junctions of guinea-pigs fed on diets deficient in fat-soluble A.

That deprivation of fat-soluble *A* produces marked changes at the costochondral junction in the guinea-pig and that these changes are moreover indistinguishable from those caused by definite, but not severe, scurvy was suggested in a previous communication [Delf and Tozer, 1918]. This suggestion has since received confirmation and a fuller account of the experiments leading to this confirmation will be published shortly in the *Journal of Pathology and Bacteriology*.

REFERENCES.

- Delf and Tozer (1918). *Biochem. J.* 12, 4.
Mackay (1921). *Biochem. J.* 15, 19.