

developed teats (*see* Fig. 2). Castration was decided upon, and the operation was performed, by the kindness of Mr Henry Phillips, at his veterinary infirmary, Ipswich. The animal was cast in the same way as for cryptorchid castration, and, under aseptic precautions, a search was instituted up the inguinal canals, where, in each case, a tolerably large testicle was found. Both were well out of sight, close to

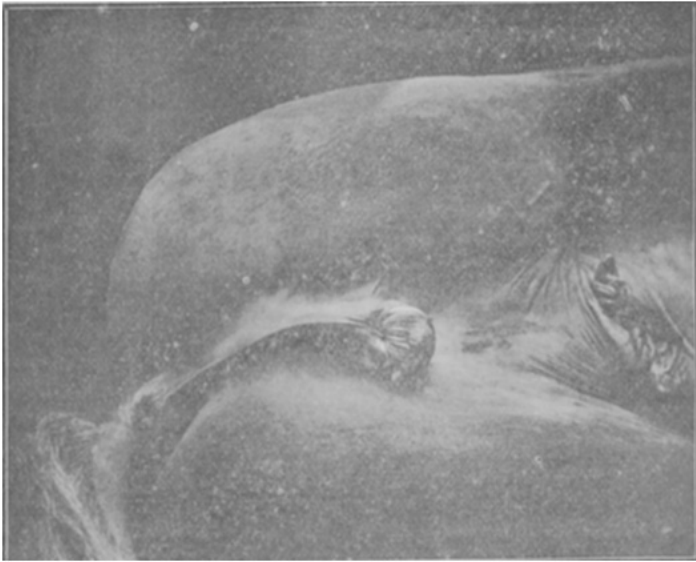


FIG. 2.

the internal abdominal rings. These were removed with the *écraseur*, and recovery was uneventful. I heard from Mr Turner a few days ago that the horse, since the operation, had given every satisfaction, and was perfectly quiet with other animals. For the photographs I am much indebted to Mr Granville Heskell, a Class A student and pupil of Mr Phillips.

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### SUPERNUMERARY DIGITS IN A PIG.

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THE subject of this note was a pig (born on the College farms last May and one of a litter of nine) which possessed on each fore limb two extra digits, equal in size to the normally developed third and fourth digits. There was apparently a duplication of the whole foot (or manus), from the carpus downwards, of both limbs, except that the two inner large digits were unprovided with the two small digits

behind, which do not reach the ground in a normal foot; otherwise the extra foot seemed quite as well developed as the other. The pig grew well until he was sold and killed a few days ago, and had not the slightest difficulty in progression.

I thought a dissection would prove interesting, so after death I procured the fore feet, one of which I dissected, finding the arrangement of the parts as follows. There were only five metacarpals—four large ones, and a small one to the outside forming the fifth digit. The other small digit (II.?), which during life appeared to belong to the outer of the two feet (being included in the integument of the latter), was found to be attached to the lower end of the metacarpal supporting the fourth digit of the inner foot.

I was only able to procure the feet cut off just above the carpus.



FIG. 1.

The extensor pedis muscle evidently consisted of several portions which terminated above the carpus in five tendons, which were distributed to the digits as follows: (*a*) an outside one ending on the pedal bone of the fifth digit; (*b*) another bifurcating just above the lower end of the metacarpal, one portion going to the fifth digit and the other to the excentric side of the pedal bone of the fourth; (*c*) a third, common to the two large (outer) digits, bifurcating at the first interphalangeal articulation and ending on the pyramidal eminences of the pedal bones of the third and fourth digits respectively; (*d*) a fourth dividing half way down the metacarpal of the third digit, one slip going to the excentric side of the terminal phalanx of this digit and the other to that of the second digit (II.?): (*e*) a fifth tendon, common to the two large (inner) digits, and arranged in the same

manner as the outer common tendon (*c*). All these tendons received slips from the palmar interosseous muscles.

At the posterior aspect of the foot I found the perforatus muscle ending in two tendons, which, passing down behind the third and fourth digits of the outer foot (and after forming sheaths for the two tendons of the perforans going to these digits), became attached to the second phalanges of these two digits. The other digits were unsupplied with tendons from this muscle.

The wide flat tendon (just an inch broad) terminating the perforans muscle divided at the middle of the metacarpal region into six terminal branches, each digit receiving a branch. Underneath this tendon were the plantar interosseous muscles (representing the sus-



FIG. 2.

Left fore foot of pig, showing distribution of extensor pedis tendons.

pensory ligament of the equidæ), consisting of five portions, corresponding to the five metacarpals.

The carpus showed no great abnormality as far as the number of bones went, there being an extra one in the upper row, suggesting an extra scaphoid, making five in all, and the four bones normally present in the lower row. The trapezium articulated with the two internal metacarpals, whereas normally it has no relation with the digits. All the metacarpals articulated with the carpus except the external (V.), which only articulated with the metacarpal next it. The two internal metacarpals, instead of a ginglymoid articular surface inferiorly, had a rounded head with no groove, forming, with the first phalanx, in each case more or less of an enarthrosis. The three internal digits and the external one were provided with only one fully-developed sesamoid. The first phalanx of the small middle

digit, instead of articulating directly with the metacarpus, had an irregular-shaped bone interposed between it and that bone.

Throughout this note I have described the case as one of dichotomy, or bifurcation of the limb from the carpus downwards, and such I believe it to be. During the animal's life there seemed no doubt about this, as here were six digits, whereas, as Bland Sutton says in his *Evolution and Disease*, "no vertebrate animals other than fish and Ichthyosaurii possess on each limb more than five digits; therefore, when the number of toes or fingers exceed on each limb this typical number, it must, if we regard the accessory limb as atavistic, be a reversion to an Ichthyosaurian or a fish form. The distance is far too great, and in doing so we violate the rule that atavistic parts



FIG. 3.

The same foot, showing the arrangement of the bones.

do not belong to forms palæontologically remote or systematically far distinct."

On the other hand, dissection revealed the fact that one of the small digits had no metacarpal of its own and no connection with the carpus, therefore it might be argued that here was a case of reversion to an ancestor with five functional digits, the small middle digit being the result of dichotomy of the second (in this case) digit from the first interphalangeal joint downwards. But I do not think that this argument can hold good, for in a case of reversion it seems very unlikely that the thumb, which is normally suppressed in the pig, would attain the proportions that it has in the present instance. It is curious that, although the small middle digit had no bony connection with the outer foot, it should have been supplied with a slip from the tendon of its third digit.