on which we might assume the infecting agent to have gained the venous stream. During this incubation period of ten days, then, the new cells were actively dividing and obliterating the lung tissue, which on the fourteenth day was so far destroyed as to render life impossible. Further, since the primary neoplasm was in the mammary gland and the secondary ones in the lungs and bronchial glands, we may conclude that the infecting agent, whatever it may be, travels both by the venous and lymph stream, as in the case of some micro-organisms—for example the tubercle bacillus.

SUPERNUMERARY DIGIT IN THE HORSE.

By THOMAS B. GOODALL, F.R.C.V.S., Christchurch, Hants.

SUBJECT.—A roan colt, four months old. Sire, a weedy horse of nondescript breed. Dam, a “screw” of an underbred cart-mare, suffering from chronic laminitis.

Two others of the same mare’s progeny turn out the toe of the off fore-foot badly. The colt was always an unhealthy, badly-thriving, weedy thing, not worth an operation, turned this toe out very badly, and was occasionally lame. The supernumerary digit was on the inner side of the off fore-leg, outside and independent of the splint bone, the lower extremity of which pointed forwards, and could be distinguished between the large metacarpal bone and the extra digit.

The skin of the supernumerary digit was continuous with that of the metacarpal as far as the fetlock, where they became distinct, the first phalanx of the former being directed across the back of the leg just above the fetlock joint, where the toe and sole of the foot were seen pointing upwards towards the outer side of the leg.

Each joint could be distinguished, and every part of the digit was present, even to the small ergot.

The wall of the foot was abnormally hard, the fibres of the horn having somewhat of a spiral course, and the foot terminated in a point at the toe, like the foot of a fœtus. The cleft and bulbs of the frog were barely distinguishable, but the sole and lacunæ were obliterated.

Dissection showed that this spiral disposition of the horn fibres of the hoof caused the inflections of the “bars” and lateral lacunæ of the frog to extend high into the substance of the foot, as two very hard protuberances.

The right knee, and the leg from the knee to the fetlock, were about one-third as wide again as the same parts on the opposite side; a photograph was taken to show, by comparison, the difference in size, but this, I regret to say, was spoilt.

On removing the skin there is seen to be but one flexor tendon, the perforans, which is an offshoot of the main perforans tendon, in which it becomes fused at the back of the knee-joint.

In the place of the extensor pedis tendon there is a band of fascia extending up the front of the os suffraginis to the fetlock, where it becomes attached to the distal extremity of the splint bone.

The bulk of the superior sesamoidal ligament is made up of muscular fibres. (This fact is of considerable interest.)

The fatty frog is very pronounced.

The blood vessels and nerves have much the same disposition as in the normal leg, even to the anastomosing branch of the metacarpal nerves over the back of the flexor tendon. They branch from the normal metacarpals at the back of the knee.

The bones.—The lower end of the radius is wider than normal.

The scaphoid is larger and wider than normal towards the inner aspect, there being a large off-shoot from the main bone, and on its lower side it has an extra articular facet.

Of the bones in the lower row, the magnum articulates inferiorly with the large metacarpal bone only; it does not touch the inner small one as in the normal knee.

The next bone to it, which should be the trapezoid, though it does not take the shape of the normal bone of that name, appears somewhat as though it were a part of the magnum,—as though the large inner articular surface of that bone were divided into two parts, though anteriorly it has the protuberance seen in the normal trapezoid. It is flattened on its upper articular surface, and articulates superiorly with the normal part of the scaphoid, inferiorly with the inner edge of the large metacarpal bone and with a part of the small one, laterally on one side with the magnum and on the other with the first of the two extra bones.

On the inner side of the trapezoid there are two supernumerary bones. The first of these has but a small articular surface on its superior aspect, by which it is brought into apposition with a part of the extra articular facet of the scaphoid, inferiorly it articulates partly with the small metacarpal bone, and partly with the head of the supernumerary metacarpel, laterally on one side with the trapezoid and on the other with the second extra bone. It is worthy of note that on its posterior aspect this bone has a rounded protuberance corresponding almost exactly to that seen in the unciform.

The second of the extra bones is very small; its upper articular surface is convex and responds to the outer part of the extra facet of the scaphoid. Inferiorly it articulates with the outer part of the head of the supernumerary metacarpal only.

It might be mentioned that the head of the supernumerary metacarpal stands up about half-an-inch higher than the normal metacarpals, thus welding together the whole joint.

The inner part of the knee-joint, with the small metacarpal and supernumerary bone, has the appearance of having been forced forward.

I have also noticed that on the large metacarpal bone, at a point corresponding to the lower extremity of the splint bone, there is an indentation, caused by the pressure of this bone; this would account for the occasional lameness noticed in life. The splint bone is much larger and wider than normal, and comes almost into the plane of the anterior face of the large metacarpal; it is flat from side to side, and its lower extremity bends forward; the bone, instead of tapering off, retains its width from end to end. It is only connected with the large metacarpal by normal fibrous tissue, but it is ankylosed to the metacarpal of the supernumerary digit, and has the appearance of being wedged in between the two.

The metacarpal of the supernumerary digit articulates superiorly with the fourth bone of the lower carpal bones, mentioned above;

just below its head it becomes ankylosed to the splint bone, the ankylosis extending along the upper two-thirds of the bone; at its lower third it curves backwards; it is nearly as long as the large metacarpal, and about one quarter its width. There is an indistinct median ridge on its lower articular surface. Where it curves away from the lower extremity of the splint bone, a strong fibrous band still unites the two. It will be noticed from the description that the terminal portion of the splint bone takes a forward direction, and that of the supernumerary metacarpal a backward one. There are very small rudimentary sesamoids.

The first small phalanx, or *os suffraginis*, crosses over the back of the fetlock. There is only the upper end of the second phalanx (*os coronæ*), showing the articular face in apposition with the lower extremity of the first; the remainder of the *os coronæ* is replaced by a fibrous band, which becomes attached to the *os pedis*.

On removing the hoof the horny and sensitive sole is seen to be obliterated on the outer half of the foot, but it is distinct on the inner. The laminae terminate in a point at the inner toe, separated from the outer half by a pronounced ridge on the inner aspect of the horny covering of the foot, apparently a continuation of the protuberance of the outer lacuna of the frog, so that the inner half of the laminae are fairly perfect, while the outer half are cut short by this horny ridge.

The frog is distinct, but shortened by this same ridge crossing it at the toe.

Only the inner half of the pedal bone is ossified, and this is very small, terminating at the toe in a sharp point.

There is no navicular bone, but a slight thickening of the tendon where this should be.

Whether the facts here recorded favour the view held by some that these occasionally met with additional digits show a reversion to type, or whether it is merely a reduplication of the specialised existing digit, as is more generally regarded by modern naturalists, readers must judge for themselves.

The general conformation of the carpus, more particularly the presence of the well defined fourth bone (trapezium) on the inner side of the second row of the carpal bones, normally present in the tapir and rhinoceros, allies of the horse; the forward position of the splint bone and supernumerary metacarpal; also the muscular character of the superior sesamoidal ligament, showing it to be the homologue of the short flexor of other mammals, point rather to the former conclusion.

On the other hand, the existence of a splint bone between the large metacarpal and the supernumerary one seems to indicate that it is only the teratological condition occasionally met with both in man and animals. (Flower's "Mammals, Living and Extinct.")

Is it only a coincidence that the supernumerary digit in recently recorded cases has been found on the inner side of the right fore leg? (See Professor Shave's and Mr Flook's cases published in the September 1894 No. of the *Journal of Comparative Pathology and Therapeutics*.)

DESCRIPTION OF PLATE IV.

Fig. 1. Leg of colt with supernumerary digit (Mr Goodall's case).

Figs. 2. and 3. Skeleton of the above leg. A, inner splint bone; B, supernumerary metacarpal bone; C, supernumerary digit.

Fig. 4. Carpus of above leg. A, radius; B, scaphoid; C, lunare; D, cuneiform; E, unciform; F, magnum; G, trapezoid; H and I, supernumerary bones.

Fig. 5. Metastatic adenomata in the lungs of a bitch (Professor Stockman's Case *see* p. 255).

Abstracts and Reports.

SIXTH INTERNATIONAL VETERINARY CONGRESS.

THE following resolutions were submitted to the Sixth International Veterinary Congress, which held its sittings at Berne from the 16th to the 21st of September, 1895.

I. INTERNATIONAL VETERINARY SANITARY POLICE.

1. There ought to be instituted an international bureau for the furnishing of information regarding veterinary sanitary affairs, and for the publication of an international bulletin regarding the contagious diseases of the domestic animals.

Adopted unanimously.

2. The Swiss Federal Council ought to be invited to take the initiative in calling together an international conference to be charged with the elaborating of a convention regarding the international traffic in cattle.

Adopted unanimously.

II. MALLEIN.

1. Mallein is a powerful agent for assuring the diagnosis of the disease in cases suspected of glanders.

2. The systematic use of mallein in stables in which glanders prevails is the best means of bringing about extinction of the disease.

Adopted by 49 votes against 39.

3. The various Governments are invited to provide the funds necessary to definitely settle the value of mallein injections as a measure of sanitary police, this to be done by means of experiments in which a certain number of horses would be artificially infected and then treated with mallein.

Adopted unanimously.

III. TUBERCULIN.

1. In view of the great divergence of opinion expressed during the discussion on tuberculin, the Congress should refrain from passing any resolution on the subject.

Supported by 3 votes only.

2. Tuberculin is a valuable method of diagnosis, and it is capable of rendering the greatest service in the struggle against tuberculosis. There is no occasion to abandon the employment of this substance under the pretext that it may provoke an aggravation of the disease.

Adopted by 98 votes.