When seen at 2.30 p.m. there was less pain and the diarrhoea seemed to have ceased. The tongue had a whitish fur. After this the diarrhoea returned, and the eyes were noticed to become of a darker shade; later he became restless, with slight low delirium.

At 8.30 p.m., when I saw him again, the patient was collapsed, the aspect being that of abdominal disease. The respiration was jerky and somewhat laboured, the pulse small and rapid, and the abdomen was somewhat distended, hard, and tympanitic; the temperature was 100.5° F. Nothing abnormal could be detected in the chest.

The patient was brought to Her Majesty's Hospital (in connexion with Dr. Barnardo's Homes) and warmth, stimulants, and turpentine enemata applied. Later, the patient became somewhat anaemic, the dyspnoea and restlessness becoming more marked. Dr. Richardson, of Commercial Road, saw the patient with me and agreed that he was not fit to stand any operation; ergotin and morphine were administered. Marked tenesmus was present while in the hospital. Gradually the patient sank and died at 11.40 p.m., after one day's illness.

At the necropsy on August 11th, made with the co-operation of Dr. Richardson, nothing abnormal could be seen in heart, lungs (except adhesions of both pleurae), kidneys, spleen, or liver.

On opening the abdomen, the large intestine was found to be much distended (to a diameter of 2½ in. to 3 in.); the small intestine was not so distended. There was a little free sanguineous fluid in the peritoneal cavity, but no sign of peritonitis. The stomach and small intestine contained a yellowish fluid; the mucous membrane of the stomach being somewhat congested. The contents of the large intestine consisted of much gas and a dirty-brown fluid; the mucous membrane was somewhat congested.

In the upper part of the rectum a hard mass was found, which, on removal, was seen to consist of a concentric growth in the rectal wall, extending for 2 in. along the rectum and constricting its cavity. Behind this mass there were several enlarged glands, one of them being as large as a cherry. On opening the gut, the wall was seen to be thickened to ½ in., while the mucous membrane was eroded and ecchymotic; the stricture admitted the tip of the little finger; the growth and enlarged glands were all remarkably hard.

A report from the London Hospital Pathological Institute on the microscopical appearance of the growth states as follows:

"The section at one spot shows mucous membrane with thickened basement membrane and much round-celled infiltration; elsewhere it has been completely destroyed. For the most part the section consists of irregular fibrous septa enclosing spaces; these spaces are subdivided by delicate strands, which stain blue with Gram. Arranged irregularly in the spaces, and more densely along the fibrous septa, are polyhedral cells of an epithelial type whose nuclei stain well with haematoxylin. In one spot there are ducts lined with an epithelium, which is proliferating in irregular fashion, but in places has a columnar arrangement. In a few places colloid material is recognizable, but the method of preparation has destroyed it in most of the spaces. The peritoneal coat is thick and fibrous. The section is that of a colloid carcinoma of the large intestine."

A CASE OF HAEMATOMA OF THE LABIUM MAJUS FORMED DURING LABOUR.

By JOSEPH JONES, M.B., CH.B. VICT.,
Leigh, Lancashire.

In the *EPITOME* for September 16th, paragraph 168, an account is given of the spontaneous development of a haematoma during the seventh month of pregnancy. A record of the formation of one during labour may be of interest.

The patient was a primipara of 35 years, and rather unintelligent. At the beginning of the second stage the head was still at the brim of the pelvis and not properly engaged. As it remained there an undue length of time it was drawn into the cavity with the forceps which were then at once removed, and the case left to Nature. The child was born forty minutes later in the first cranial position, and weighed about 6 lb.

About two hours before birth a painful swelling the size of a hazel-nut was observed in the mother's right labium majus, at the junction of its lowest and next fourth. There was no change of colour. It continued to increase in size until, when

the head had begun to distend the soft parts, it had attained the dimensions of a hen's egg. As it appeared probable that its bulk, in a part already on the stretch, would cause a bad tear, an incision ½ in. long was made into it, parallel with the vulva; some liquid venous blood was liberated, and more continued to flow in a thin but continuous stream for a few minutes, amounting to about 2 oz. altogether. The tumour, however, did not disappear until the vertex had become plainly visible through the vulva, when the pressure caused the vaginal wall to rupture over the tumour, which was ejected from the vagina as a clot measuring 2½ in. by 2 in. by ¾ in. Delivery soon followed. There was no further bleeding of importance.

The tear thus started continued for an inch on the skin surface of the perineum, and to the extent of 2½ in. up the posterior wall of the vagina. It was duly sutured.

The subsequent history of the patient was satisfactory, except for a rise of temperature beginning about the end of the second week, and lasting four or five days, which was traced to an attempt to douche the vagina with an enema syringe, using only the bone rectum nozzle. The temperature fell from 102° F. to normal within twenty-four hours of this error being corrected.

The only etiological factors noted, apart from such increased blood pressure as always occurs in parturition, were: (1) The advanced age of the primipara, the effect of which in causing degeneration of the blood vessels was probably negligible; (2) the prolonged lodgement of the head at the brim, which apparently obstructed the venous return by pressure on the common iliac, since it was in this stage that the tumour began to form; and (3) the mental condition of the patient, which, perhaps, may have had some analogy with the state of mind of lunatics in whom haematoma of the ear is relatively very common.

The nature of the influence of insanity in producing blood tumours is unknown, and in the absence of more obvious cause it would appear reasonable to attribute to the patient's general stupidity a possible share in the bringing about of the haematoma in this instance.

RATS IN RELATION TO PLAGUE.

By BRUCE SKINNER,
Lieutenant-Colonel, R.A.M.C.

III.

Those who have become sufficiently interested in this question will desire to have available some means of distinguishing the tick which may prove to be the vehicle of plague to men and rats.

Before proceeding, attention must be called to an address¹ on Plague in India, given by Dr. Creighton before the Society of Arts on May 18th last. There are two points in this address which have a bearing on the subject under consideration. Dr. Creighton points out that there are two great seats of plague, "one the plains of the North-West, the other the alluvial valleys of the Deccan and Gujerat." These areas, marked on a map of India on p. 811 of the report of his address, show "fairly enough where the interest really lies." The other point is that Dr. Creighton draws attention to the comparative freedom from plague of stone-built villages, as shown in Ratnagiri; while the mud-built villages of Satara have suffered heavily. It can be readily understood that in the latter there would be every facility for the operations of ticks. The bearing of the point first mentioned above will become obvious on reference to the accompanying chart.

Out of some 250 species of tick noted by Professor Neumann in the *Mémoires de la Société Zoologique de France*, vols. ix, x, xii, the distribution of *Hyalomma aegyptium* forces itself upon the observation as coincident with that of the endemic plague areas, Yunnan excepted. Its occurrence in Bombay points to the West as the source of its arrival in India; from Bombay its spread may be found to coincide with the extension of plague. But there is another focus. Kumáon and Garhwal have long figured in the Indian reports² as plague centres in which an advance of the area of the disease was noted at each fresh outbreak. "This disease, which first commenced in the snowy range, is undoubtedly coming lower and lower every year."² We probably shall find an extension southwards from Lob Nor, across Thibet, of the *Hyalomma aegyptium*. The early history of the latter invasion will never be detected step by step, but it may be safely inferred that it entered Garhwal,

Dr. Creighton's plague areas of India, shaded. Distribution to 1899 of *Hyalomma aegyptium* + Garhwal 1, Kumdon 2, Lob Nor 3.

then Kumdon, and thence the Punjab. With a view, therefore, to facilitating the recognition of this member of the Ixodidae in India, the following description and distribution is extracted, with his permission, from Professor Neumann's paper in vol. xii of the *Mémoires de la Société Zoologique de France*, p. 285 :

1. *HYALOMMA AEGYPTIUM* (LINNÉ).

Description : Mâle. Corps ovale, plus large en arrière, plat, long de 6 à 7 mm. (rostre compris), large de 3.5 mm. à 5 mm. Écusson brun marron foncé, parfois plus clair dans le milieu, couvrant toute la face dorsale en laissant (surtout sur les gros individus) une étroite bordure marginale blanc jaunâtre, prolongée en pointe, de chaque côté, au delà

Hyalomma aegyptium (♂) face ventrale.

Hyalomma aegyptium (♂) doigt de la chélicère gauche, face dorsale (× 140) et palpe gauche, face ventrale (× 40).

des premières hanches et jusque près du milieu de la longueur de la base du rostre ; sillons cervicaux et latéraux semblables à ceux de la

femelle ; yeux semblables à ceux de la femelle, submarginiaux ;* punctuations nombreuses, inégales, sur toute la surface, plus grandes et plus abondantes à la périphérie ; quelques poils très courts, épars ; souvent trois sillons postérieurs, le médian plus long ; onze festons marginaux postérieurs, le médian triangulaire, parfois blanc jaunâtre. Face ventrale blanc jaunâtre ou brunâtre ; poils nombreux et courts ; orifice sexuel en regard du premier espace intercoxal ; anus vers le tiers postérieur, en regard des l'orifice des stigmates ; écussons adanau brun plus ou moins foncé, allongés, étroits, arrivant presque jusqu'au niveau du bord antérieur des périrèmes, leur bord interne plus long que leur bord postérieur, les côtés courbés en dedans chez les individus replets ; en dehors de chaque écusson adanal et séparé de lui par le sillon coxal, un autre écusson accessoire plus petit, chitineux seulement dans son tiers postérieur ; en regard et en arrière des écussons adanau, deux saillies coniques, chitineuses, brunes, dépassant parfois le bord postérieur. Périrèmes en forme de longue virgule, dont le prolongement postérieur atteint presque et parfois dépasse le niveau de l'extrémité des écussons accessoires. Rostre différent de celui de la femelle par les détails suivants : doigt des chélicères long de 200 μ ; apophyse interne à base étroite, à deux dents successives, la postérieure plus forte ; apophyse externe à deux dents, l'antérieure faible, la postérieure très forte. Pattes semblables à celles de la femelle, plus épaisses, surtout celles de la quatrième paire, à éperons tarsiens plus forts.

Femelle.—À jeun, corps plat, à contour ovale, plus large en arrière, brun rougeâtre foncé, long de 7 mm. (rostre compris), large de 3.5 mm. Écusson ovale hexagone, glabre, aussi large ou un peu plus large (3 mm.) que long, l'angle postérieur, en courbe surbaissée et reliée aux angles latéraux par une ligne un peu concave, les bords latéraux antérieurs régulièrement convexes ; sillons cervicaux profonds et convergents dans leur partie antérieure, larges, superficiels et divergents en arrière ; sillons latéraux indiqués par une saillie rectiligne, rapprochée de l'oeil correspondant ; celui-ci noir, brillant, hémisphérique, éloigné et l'angle, au fond d'une orbite, vers le milieu de la longueur de l'écusson, au niveau des hanches de la deuxième paire ; des punctuations nombreuses, très inégales. Face dorsale parcourue par trois sillons longitudinaux, les latéraux divisés en deux branches inégales à leur origine ; un sillon marginal assez rapproché du bord ; celui-ci divisé en onze festons dans le tiers médian postérieur ; de gros plis transversaux entre les sillons ; des poils blanchâtres et courts sur toute la surface. Face ventrale pourvue de poils semblables. Vulve étroite, en regard des hanches de la deuxième paire. Anus plus rapproché du bord postérieur que de la vulve. De courts sillons pairs, longitudinaux, de chaque côté du sillon ano-marginal. Stigmates grands, brun marron, triangul-

* Un individu mâle de l'Espagne méridionale (coll. E. Simon), très reple, présentait deux yeux égaux du côté droit, placés l'un derrière l'autre et séparés par une distance à peu près égale à leur diamètre ; la même anomalie n'existait pas à gauche.

laïres, presque aussi larges que longs, à base postérieure, à angles antérieur et interne arrondis. *Rostre* long de 1.5 mm. (de son bord postérieur dorsal à l'extrémité de l'hypostome), à base bien plus large que longue, les angles postérieurs à peine saillants; aïres poreuses un peu allongées, peu profondes. *Chélicères* à doigt long de 230 µ; apophyse interne près de l'extrémité antérieure, transversale, à trois pointes, la médiane plus forte; apophyse externe à trois dents, les deux postérieures fortes et aiguës. *Hypostome* un peu spatule, arrondi en avant, à nombreux denticules terminaux; sur chaque moitié, trois files de 10-12 dents égales, suivies, presque jusqu'à la base, de dents squamiformes en 3-4 files, les externes plus longues. *Palpes* longs, étroits; premier article à face dorsale moitié moins longue que la face ventrale, qui se prolonge en dedans par une apophyse longitudinale, plus longue que l'article, convexe à son bord interne, sur lequel sont insérées de longues soies dirigées en dedans et en avant; deuxième article un peu plus court que le troisième à sa face ventrale, prolongé

Hyalomma aegyptium (♀) doigt de la chélicère gauche (× 135).

à sa base dorsale en une pointe obtuse et plate par dessus le premier; de longs poils au bord ventral interne du deuxième et du troisième article; le quatrième très petit, subterminal, en forme de papille velue, dans une fossette ventrale du troisième. *Pattes* longues, fortes, celles de la quatrième paire dépassant l'abdomen par leurs deux derniers articles au moins. Hanches grandes, presque contigues, bruniâtres; celles de la première paire partagées en deux longues épines, dont l'interne plus large et plus courte; une tubercule près de l'angle postéro-externe de la deuxième et de la troisième, et une à chacun des angles postérieurs de la quatrième. Les troisième, quatrième et cinquième articles brun rougeâtre, avec l'extrémité dorsale blanchâtre, parfois concolore. Tarses de la première paire inermes, à pseudo-article terminal en tronc de cône court, élargi en arrière de cette fausse articulation; ceux des autres paires à côtés parallèles, atténués doucement à leur bord dorsal avec deux courts éperons consécutifs à leur extrémité; ceux de la quatrième paire au moins quatre fois aussi longs que larges; caroncule courte, atteignant à peine la moitié de la longueur des ongles.

La femelle *repuë* peut atteindre 20 mm. de long sur 18 mm. de large. Corps à peu près aussi large en avant qu'en arrière; côtés parallèles; épaisseur parfois égale à la largeur; glabre ou presque glabre. A la face dorsale, deux sillons antérieurs, divergents en arrière; trois postérieurs, dont le médian s'avance plus en avant, entre les antérieurs. Avant la réplétion complète, le sillon marginal et les poils persistent. Hanches très écartées, réparties sur près de la moitié antérieure. Couleur de corps brun marron, plus clair que l'écusson, parfois blanchâtre avant la réplétion complète; parfois aussi le sillon marginal, avant sa disparition, se montre comme un liseré blanchâtre sur fond marron.

Nymphe.—Corps en ovale court, plus ou moins renflé, de teinte variant du blanc jaunâtre au brun marron, long de 2 à 4 mm. Ecusson rappelant celui de la femelle. Péritremes petits, presque circulaires.

Observations.—La description qui précède repose sur l'examen de 87 lots comprenant 430 individus, dont 217 mâles, 212 femelles, et 1 nymphe faisant partie de ma collection personnelle, de celles des Muséums de Paris, de Hambourg, de Berlin, de celles de Simon, de Mégnin, de R. Blanchard, etc.

Dans la collection de Berlin, se trouvent les formes indiquées par Koch sous les noms de *H. hispanum* (♀), *H. lusitanicum* (♂), *H. impressum* (♀), *H. dromedarii* (♂). Elles justifient leur assimilation avec *H. aegyptium*.

L'espèce se trouve répandue en abondance dans les divers points de l'Algérie, jusqu'au Sahara, en Tunisie, en Egypte, en Abyssinie. Elle se retrouve au Sénégal, dans le Loango, au Cap de Bonne-Espérance et il est possible que toute l'Afrique en ait été plus ou moins infestée par les caravanes. *H. rufipes* et *H. latum* de Koch lui venaient de l'Afrique du Sud; *H. truncatum* et *H. impressum*, du Sénégal; *H. excavatum*, de l'Egypte.

H. aegyptium rayonne de l'Afrique en Asie: Asie mineure, Perim, Djeddah, Jérusalem, Perse, Téhéran, Turkestan oriental, Lob Nor, Boukkara, Maralbaschi; Mongolie (Koulouja); Inde, Bombay. *H. grossum* et *H. anatolicum* sont attribués par Koch à l'Asie mineure (Smyrne, Sardes), *H. syriacum* à la Syrie. *H. dromedarii* serait répandu aussi bien en Syrie et en Boukkara qu'en Egypte. Kolentat indique *Ixodes hispanus* dans les steppes des Khirghis et son *Ixodes corniger* dans celles de Kisil-Kum, au nord de Kiwa.

L'espèce se rencontre quelquefois en France sur le bétail algérien: On l'a vue ainsi à Vincennes (Mégnin), à Veseul (Romary), à Troyes (Morot) et elle est peut-être acclimatée dans les départements méditerranéens. C'est certainement le cas pour l'Espagne (*H. hispanum*, Koch) et le Portugal (*H. lusitanicum*, Koch), l'Italie (*H. marginatum*, Koch). La collection Simon en renferme bon nombre de l'Espagne méridionale. Dumestre en a recueilli à Bastia sur des Bœufs de

Sardaigne. Berlese le signale aux environs de Florence, et Canestrini en Toscane, en Vénétie et en Sicile.

J'en possède une femelle trouvée parmi des *Amblyomma variegatum* des Bœufs de la Guadeloupe.

H. aegyptium s'attaque aux animaux les plus variés. Le Bœuf, le Dromadaire, le Chameau sont ses hôtes de prédilection. Il est fréquent en Algérie sur le Cheval, le Mulet et l'Âne. On l'a trouvé sur le Sanglier, le Mouton, le Cerf, le Chien, le Chat. Il se fixe souvent aussi sur l'Homme. Frauenfeld dit l'avoir trouvé (*H. hispanum*) sur le cou d'un *Lanius ruficeps* à Messine.† Il recherche de préférence les régions à peau fine et surtout le scrotum et les mamelles. Les jeunes individus abondent dans les herbes et les buissons; les femelles pleines vont se cacher sous les pierres pour y pondre leurs innombrables œufs. En raison des dimensions considérables que la femelle peut atteindre et aussi de sa pullulation, cette espèce est une des plus préjudiciables au bétail des pays chauds.

REFERENCES.

1 *Journal of the Society of Arts*, June 16th, 1905, p. 800. 2 *Indian Plague Commission*, 1898-9, vol. II, p. 335, contains a summary of these reports.

CASE OF POISONING FROM TINNED SARDINES: COMA: DEATH: NECROPSY.

By HERBERT CAIGER, M.B.LOND., F.R.C.S.ENG.,
Burghersdorp, Cape Colony.

THE following case of poisoning from tinned sardines seems worthy of record, as vomiting and diarrhoea were absent, and coma was the prominent symptom.

M. W., a healthy white girl, aged 7 years, ate freely from a tin of sardines at her midday meal on Friday, July 21st, 1905. The sardines were noticed to have a "funny" taste. Nothing unusual was noticed when the tin was opened. Soon after she began to complain of headache, and felt queer for the rest of the day, saying that she did not feel right since she had eaten the sardines. During the night she woke up at intervals complaining of pain in the abdomen, which was quickly relieved by rubbing. There was no vomiting or diarrhoea.

Next morning she still complained of stomach ache, and her mother therefore gave her a little whisky, after which she went to sleep. Her mother was not specially alarmed until about midday she tried to rouse the child and found that she could not wake her, and the child's arms and legs were getting cold. I was called to see her about 1 p.m. The child was then in a state of profound coma. There was no corneal reflex, the eyes were divergent, and the pupils dilated when first seen but of medium size soon after, varying from time to time. The skin was pale and the extremities rather cold. Breathing was noisy from the accumulation of mucus in the air passages.

The stomach was well washed out, first with a weak solution of potassium permanganate and then with warm water. The washings from the stomach contained little besides a few curds of milk. No special odour was detected. A hypodermic injection of atropine sulphate ($\frac{1}{2}$ gr.) was given, which was repeated after about half an hour as the pupil did not remain dilated. After the second injection the pupil became dilated and remained so; the skin became flushed and hot. The patient still continued deeply comatose, and was quite unable to swallow. Attempts made to pass the stomach tube again in order to introduce a purgative had to be given up, as the breathing got bad when the tube was introduced. A simple enema was given to induce an evacuation of the bowels, but with little result. During the afternoon a third injection of atropine sulphate was given. About 9 p.m. the child's condition was about the same, but the coma seemed not so deep. The stomach tube was passed and some castor-oil introduced into the stomach; while this was being done some movements of the limbs—probably reflex movements—were made. About 11 p.m. the patient vomited for the first time, and again about 1 a.m. The bowels acted a little later, but at 3 a.m. the child died without having recovered consciousness.

A post-mortem examination was made nine hours after death. Nothing abnormal was found in the stomach or bowels. The brain was much congested, and showed numerous small petechial haemorrhages scattered over the surface as well as in its substance. There were some similar haemorrhages beneath the pericardium covering the surface of the heart. Beyond these lesions nothing else of interest was noted.

There seems to be no other explanation of the facts than to

† Von Frauenfeld, G. R., *Zoologische Miscellen*. xi (Das Insektenleben ur See), *Verhandl. der Zool.-bot. Gesellsch. zu Wien*, xvii, p. 461, 1867.