addition to these, though much less numerous, are observed small, white, glazed, atrophic areas, mostly surrounded by a zone of dilated capillaries. These are very irregular in shape, and vary in size from that of a split-pea to that of the finger nail. Lastly, a few small, rounded nodules are scattered over the face. These are very distinctly elevated, and have a diameter of from one to two lines. Some of them are papular in character, while others have ulcerated, and are more or less covered with crusts. The largest and most striking of these little growths appeared upon the inner side of the left eyeball, and was removed by Dr. Reid. It soon, however, reappeared, extended rapidly, and destroyed the eyesight. Finally, the eye had to be enucleated. The nodules on the face have been decidedly kept in check, and a few of them have completely disappeared as the result of the application of salicylic plaster.

Sections from the growth on the eyeball, as well as from one of the nodules removed from the forehead, leave no doubt as to their nature, showing as they do the typical epithelial processes and laminated capsules of epithelioma. (See accompanying woodcuts.)

This boy, after remaining in the Western Infirmary for some months, went home, but was readmitted at my request about five months ago. There is no material alteration in the appearances, and his general health remains excellent.

This very rare disease was first described by Kaposi in 1870,¹ and a very excellent account of it, with statistics of thirty-four undoubted cases, was published in the *Medico-Chirurgical Transactions*, vol. lxvii, page 69, by Dr. Radcliffe Crocker.² As these occurred among seventeen families (and twenty-six of them in nine families), the influence of family predisposition is well-marked, although in no instance has the disease been hereditary. It seems to attack males and females with equal frequency, but, when more than one member of a family is attacked, it is usually limited to those of the same sex. The most remarkable illustration of this is reported by Ruder—that of a family of thirteen, eight boys and five girls. All the girls escaped, while seven of the boys suffered. There are, however, exceptions to this rule, of which my own case is an illustration. The disease has a tendency to set in in spring and summer—so much so, that Vidal and Neisser are of opinion that insolation may be an exciting cause. It almost invariably commences in early life, generally within the first two years; but, in two cases in Dr. Crocker's table, the patients were nine and sixteen years old respectively at the onset.

Four sets of lesions are usually observed in fully developed cases, and, as they generally follow one another in the order about to be mentioned, they may almost be regarded in the light of four stages.

The first is characterised by the development of little pigment spots, identical in appearance with, and sure to be mistaken for, ordinary freckles, all the more as they are found upon the uncovered parts—namely: face, neck, hands, arms, and legs, although the trunk of the body occasionally suffers later on. In some cases the pigment spots are preceded for a few days by the development of little congested spots, somewhat like those of measles, although this is the exception. By degrees the pigment spots tend to become much darker in colour; and sometimes, by aggregation, they may become irregular in shape, and attain the diameter of an inch or more.

Sooner or later, it may not be for months or even for years, the second stage is reached, which consists of the formation of little congeries of dilated capillary vessels (telangiectases) between the pigment spots, and about the same size as they, though they are not nearly so plentiful; occasionally they are slightly elevated.

In the third stage, many of these telangiectases are replaced by an atrophic condition of the skin, although some hold that the telangiectases succeed, and are consequent upon, obliteration of vessels in the atrophic areas. The latter are for the most part from the size of pin-heads to lentils; but they may assume various shapes and sizes, and the skin of these parts is very white, and either smooth and cicatricial in appearance, or thin, dry, and wrinkled.

In the last stage, which may not appear for a good many years (in one case, not for thirty), at some parts, especially on the right side of the face (Crocker), the vascular or pigment spots become warty and ulcerate; and fungoid growths develop, which, sooner

or later, terminate the life of the patient. Some hold with Taylor and Crocker that these are papillomatous, while others consider them to be epitheliomatous in character, as they certainly are in my case. Probably they are sometimes the one and sometimes the other. It is only in this last stage that the general health suffers. The ultimate prognosis is, therefore, grave, although, in some instances recorded, the last stage was not reached when they were reported.

We know little or nothing of the true nature of this curious affection, and we are equally in the dark as to its treatment, which must, therefore, be conducted on general principles.

LARVÆ OF A DIPTEROUS INSECT (ANTHOMYIA CANICULARIS OR SCALARIS)

PASSED ALIVE IN SWARMS

FROM THE BOWEL OF

A MAN.

By JAMES FINLAYSON, M.D.,

Physician and Lecturer on Clinical Medicine, Glasgow Western Infirmary; Physician to the Glasgow Hospital for Sick Children, etc.

REPORTS of the larvæ of insects being vomited or passed from the bowels are always looked on with a certain amount of suspicion, and properly so. No doubt many of the cases recorded were based on some accident or error, and it is almost certain that some were due to wilful imposition. The actual occurrence, however, of larvæ in human excreta is quite recognised in the various textbooks on helminthology. The Rev. F. W. Hope¹ has an elaborate paper in the *Transactions of the Entomological Society*, vol. ii, p. 256, plate 22, London, 1837-40 "On the Insects and their Larvæ occasionally found in the Human Body." There is a paper by Dr. Bateman in the *Edinburgh Medical and Surgical Journal*, vol. vii, Edin., 1811, entitled, "An Account of the Larvæ of two Species of Insects Discharged from the Human Body." In this paper many references to old cases are given by Dr. Bateman. One of the most extraordinary cases on record was well authenticated, as the larvæ were vomited as the result of the administration of an emetic in the presence of medical witnesses. This case, M. R., is reported by Dr. Pickels in the *Transactions of the Association of Fellows and Licentiates of the King and Queen's College of Physicians in Ireland*, vols. iv and v, Dublin, 1824 and 1828, "Case of a Young Woman who has Discharged, and continues to Discharge, from the Stomach a number of Insects in different Stages of their Existence." The larvæ in her case were chiefly those of coleopterous insects, but some larvæ of dipterous insects, although not of the anthomyia, were also found.

The case now to be recorded was that of a man, about 30 years of age, a member of the medical profession, residing in the outskirts of a small town in the west of Scotland. His symptoms began with a feeling of general illness, accompanied by pain in the back and side with rigors; all this was associated with obstinate constipation, resisting the use of aloin pills taken repeatedly; but after a large draught of mineral water a copious loose motion was obtained, and it was found to be swarming with larvæ, probably about thirty moving about with great activity in the fluid motion; they seemed very tenacious of life. This motion occurred on July 13th, 1887. For the next three days the bowels were moved repeatedly by means of croton oil, mineral water, and enemata containing turpentine. All the motions thus obtained contained larvæ, many of them in great abundance. The later motions, however, did not contain so many of the larger sizes but more of the smaller. The motions with the larvæ were noticed to have a peculiar smell.

Specimens of the larvæ were sent to me for my advice as to the treatment to be followed; and it was by my instructions that turpentine was used, both by the mouth and by enemata. I encouraged the patient to believe that with the clearing out of the present lot of larvæ there would be no farther trouble.

On July 20th, however, I was called to see the patient, as a new complexion was put on the case by the development on the previous day of all the signs of a pleurisy on the right side. By

¹ Hebra on *Diseases of the Skin*. Syd. Soc. Translation, vol. iii, p. 252.

² Including the case mentioned above, we have only records, up to this time, of forty-one instances of the disease.

¹ Hope's tables are reproduced in the *London Medical Gazette*, vol. xx, 1837. He is there called the Rev. J. F. Hope. Tables 4, 5, and 6, "Dipteral Larvæ producing Myasis," are of special interest in connection with our present case, see pp. 207, 255, 287.

this time the motions, for a couple of days, had ceased to contain the larvæ, and only a few had been seen for two days before they disappeared. The presence of a well-marked pleurisy made it probable that some of the symptoms present in the case, the rigors, the pains in back and side, and the general sense of illness, might have been due in part to the incipient pleurisy, and not entirely to the parasites, as was at first supposed. The patient recovered in due course from the pleurisy. No more larvæ were seen in the motions after this; none were vomited at any time.

When the specimens were sent to me, I could only recognise them as larvæ, having no special knowledge to guide me. I sent them to Dr. Murie, then librarian of the Linnean Society, and also to another Glasgow student, Dr. T. Algernon Chapman, of Hereford, who is well known as an entomologist. Both of these recognised the larvæ as certainly those of a dipterous insect, and almost certainly of the genus *Anthomyia*. The further elucidation of the exact species required the rearing of the larvæ. The delay arising from my want of knowledge in such matters, although really very short, was enough to lose the chance of procuring living specimens, as they had ceased to appear in the motions. It was subsequently found that they were present in enormous quantities in the midden into which the motions had passed, and an attempt was made to rear some of these; this experiment, however, also failed through some accident while the patient was absent from home during his convalescence.

Mr. James J. F. X. King, of the Glasgow Natural History Society, kindly undertook to submit the specimens of the dead larvæ to another expert, Dr. Meade, of Bradford, a leading authority on the genus *Anthomyia*. He wrote: "The larvæ which you sent me are those either of *Homalomyia* (*Anthomyia*) *scalaris* or *H. canicularis* (Meigen)."²

The drawings made from the specimens sent me show the appearance of the larvæ in their natural size, and also when magnified (Fig. 2). The large drawing was made to show the setose

Fig. 1.

filaments, which could be defined by careful focussing with a high power. The drawing of the mature fly (Fig. 1) is copied from the plate in Meigen's work on *Dipterous Insects*, and is added merely as a matter of interest.

The next question to be considered is, How did these insects obtain their entrance into the patient's body? One naturally thought of the ova being introduced along with some vegetable matter on which they might have been deposited, and, as the patient had partaken of lettuce in the summer, this might be the medium. The *Anthomyia canicularis* and *scalaris*, however, seem to deposit their ova on rotten vegetables, and, as Dr. Meade says, breed in privies, so that it is difficult to understand how they can find entrance under any ordinary circumstances into the human stomach. Dr. Meade says, in the letter already quoted from, that he has himself had a case of this kind in his practice, and he makes the important suggestion that the ova may never have been swallowed at all, but may have been deposited at the anus while the patient's bowels were being moved at a privy, and may have been taken up within the bowel after the process of defecation was finished.

In the case now narrated the patient habitually used a privy

² It will be observed that these two are distinguished from other species of *Anthomyia* by having a different name assigned to them by Dr. Meade. Compare the following quotation from Westwood (*Introduction to the Modern Classification of Insects*, vol. ii; London, 1840, p. 570, and also his drawing, Fig. 132, No. 7. See also for *Homalomyia* his *Synopsis*, p. 143): "The species of the genus *Anthomyia* and the allied genera undergo their transformation in rotten vegetables or in manure, excrement, etc. Bouché has very properly separated from *Anthomyia* some species, the larvæ of which have the body much depressed, narrowed towards the front, with the sides furnished with long setose filaments. To this group belong *Anthomyia canicularis* (Meigen) and *Anthomyia scalaris* (Meigen). Bouché found the larvæ of the former insect in rotten vegetables and decayed cheese, and those of the latter in human excrement."

in his garden which had free communication with the midden adjoining. In this patient there were no symptoms referable to the stomach, and the rapid clearing out of the larvæ after they were first seen might favour the idea of their location in the lower bowel. This case may be contrasted with some others of this class which have been recorded where the facts pointed to

Fig. 2.—Larvæ of natural size and magnified.

the presence of the larvæ in the stomach; the course of the affection was much longer in those instances. In searching for cases of this class I have been struck by the rarity of recent reports, and if Dr. Meade's suggestion affords the correct explanation of the presence of these insects, we may find in the enormous development of the water-closet system, both in town and country, within the last fifty years some explanation of the undoubted rarity of such an occurrence.

The presence of the larvæ of *Anthomyia canicularis* and *scalaris* in the human subject has been reported in various standard works,³ and Leuckart's figures closely resemble those given here.

The most important case seems to be one reported by the Rev. Leonard Jenyns, M.A., F.L.S., in the *Transactions of the Entomological Society of London*, vol. ii, London, 1837-40, p. 152, plate 15: "Notes of a Case in which the Larvæ of a Dipterous Insect, supposed to be the *Anthomyia canicularis* (Meigen), were expelled in Large Quantities from the Human Intestines; accompanied by a Description of the Same." In this case a clergyman in Cambridge, 70 years of age, experienced peculiar sensations in the epigastrium in the spring of 1836, and during the summer and autumn following he passed from the bowels "several quarts of the larvæ at intervals of some months." They were passed alive, and were very active.

Dr. Bateman's case already mentioned⁴ is illustrated by a plate, from which it has been inferred by entomologists, since the publication, that one of the species of larvæ was the *Anthomyia canicularis*.

The entry in the *Catalogue of the Contents of the Museum of the Royal College of Surgeons in London*, London, 1830, part iv,

³ Leuckart, *The Parasites of Man*, translated by Hoyle, Edinburgh, 1886, pp. 2, 15, 143. Cobbold, *Entozoa*, London, 1864, p. 419. Küchenmeister, *Animal and Vegetable Parasites*, translated by Lankester, London, 1857, vol. ii, p. 95. *Wagner's Handwörterbuch*, Bd. 2, p. 684; article "Parasiten." by Siebold; in a footnote there is a reference to *A. canicularis*. *Quain's Dictionary of Medicine*, London, 1882; the article "Oestrus," by Dr. Cobbold, contains some reference to this subject.

⁴ *Edinburgh Medical Journal* vol. vii, 1811, p. 41.

fasc. i, p. 144 (entry 609 D), is now supposed to refer to Anthomyia—"Larvæ.....which were voided *per anum hominis*."

A "Case of Patient who Discharged the Pupæ of the *Musca cibaria*," published by Dr. White in the *Memoirs of the Medical Society of London*, London, 1794, vol. ii, p. 67, has also been subsequently put down to anthomyia.

Westwood³ gives a reference to the *Medizin. Correspondenzblatt* for 1832 for an account of the occurrence of the larvæ of *Anthomyia scalaris* in man, but I have not been able to look up this reference.

FIBROMA OF THE OVARIAN LIGAMENT WEIGHING OVER SIXTEEN POUNDS: REMOVAL: RECOVERY.

By ALBAN DORAN, F.R.C.S.,
Surgeon to the Samaritan Free Hospital.

THE fibro-muscular band, known as the ovarian ligament, which connects the ovary to the uterus, is rarely the seat of a tumour. In cases of multiple interstitial fibro-myoma of the uterus, a small fibroid is occasionally found in that ligament. Recently, however, I have had under my care a case where a solid tumour, weighing 16 lbs. 4 oz., was developed in the right ovarian ligament. This tumour I successfully removed, together with both ovaries.

S. G., aged 32, nine years a widow, and the mother of one child, 9 years old, came under my care last April; she lived at Tebworth, Bedfordshire, and was a patient of Dr. Waugh, of Toddington. She had first observed that her abdomen was growing larger more than two years ago; soon afterwards she was seized with severe pain over the right side of the swelling. The abdomen had increased in size very rapidly during the last few months before admission. I found the abdomen greatly distended by an elastic tumour, which reached from the pubes to the epigastrium, and extended towards the flanks, especially on the right side. The girth at the umbilicus was 41 inches. The cervix uteri was low in the pelvis; the sound passed 3½ inches forward. The uterus was pressed down by the tumour, with which it was clearly not continuous, but its movements were impaired. The catamenia were regular, with moderate "show."

On May 4th, 1889, I operated on the patient at the Samaritan Hospital, assisted by Mr. J. Malcolm; chloroform being given by Dr. Rutherford. I made a free incision, about 3 inches long, at once, and exposed a large tumour; its surface was fasciculated, greyish-brown and gelatinous-looking, as in some adenomatous multilocular cysts. No fluid escaped on tapping. I endeavoured to reduce its bulk by thrusting my hand into its interior, but its substance was very tough, and I could not find any septa to break down; very little blood was lost during the attempt. I prolonged the abdominal incision nearly three inches above the umbilicus, and found a strong omental adhesion on the uppermost part of the tumour; the vessels in the omentum were very large, and required careful ligation. To the right and left of the tumour were omental and parietal adhesions; one was very troublesome to secure. I transfixed it with No. 2 silk, but the ligature slipped, and fresh transfexion was necessary later on. Then the great tumour could be drawn out of the abdominal wound, some lobulated masses which fitted into the right iliac fossa projecting from its right side. Two appendices epiploicæ of the sigmoid flexure adhered to its lowest part. The tumour was connected to the right side of the uterus by a flat pedicle about 1½ inch long. I compressed it with an elbowed large pressure-forceps (or "cyst-forceps"), and transfixed with No. 3 silk immediately below the forceps, after Dr. Bantock's method, as figured in my *Handbook of Gynecological Operations*, p. 281. The tumour was then cut away; as I missed the usual elements of a normal pedicle, I feared at the time that the substance of the pedicle might be infiltrated with malignant material, defacing its natural structures. The left ovary, though small, bore several unhealthy-looking cysts; I therefore removed it. Then I carefully inspected the right pedicle. To my surprise I found below it the right tube and the ovary, which was cystic, and about 2 inches in long diameter. The stump of the pedicle projected between the uterus, which bore no fibroid

growth, and the ovary on which it encroached. In fact, the tumour sprang from the ovarian ligament. The great bulk of the tumour had rendered a thorough search of the structures around its pelvic attachment very difficult, hence its true nature was not detected till it was cut away, so that the stump of its pedicle could be carefully inspected. Lastly, I removed the right appendages. The peritoneum was freely flushed out with hot water, and a drainage tube passed into Douglas's pouch. The operation was very tedious, owing to the multiplicity of adhesions, parietal and omental; it took over two hours. The tumour weighed 16 lbs. 4 oz., after much serum had escaped from its interior. It bore all the characters of a soft, oedematous fibroma, as microscopic examination proved. In its vertical diameter it measured about nine inches. Posteriorly it was lobulated, especially around its pedicle; anteriorly it was smooth.

The temperature rose to 103°, with high pulse, ten hours after the operation, and after the skin had begun to act, so the ice-cap was applied. Two days later, flatulent distension of the abdomen occurred, flatus ceasing to pass for about ten hours. Then spontaneous action of the bowels took place, and recurred several times in twelve hours, with great relief. At the same time metrostaxis set in (the last true menstrual period had ceased on April 30th), with considerable constitutional disturbance, such as is often seen after double oöphorectomy, and in operations where uterine tissue is ligatured. The pulse ran high, the tongue became dry, and the vaginal temperature ranged for two days from 100.6° to 102°. The ice-cap was kept on during this period, as I knew from experience that high temperature is in itself mischievous in these cases of metrostaxis after abdominal section. On the sixth day I removed the tube; at first I had emptied it every two hours; at length the fluid which came away was scanty, very pale red, and perfectly scentless, so that the tube was no longer needed. After thoroughly syringing out the vagina, the sanguineous discharge, at first foetid, became quite odourless, and ceased within a few days; but before it disappeared, namely, by

Fibroma of the Ovarian Ligament removed by Operation, seen from behind. *p*, raw surface representing pedicle; it is surrounded, especially below, by small lobules of the tumour. *ap*, an appendix epiploica, which connected the tumour to the sigmoid flexure of the colon.

the seventh day, the constitutional disturbance had ceased. Throughout the whole of the first week, from the moment the patient was placed in bed, she never vomited, and during the metrostaxis she had an appetite, although of course she was fed very sparingly. No nutrient enemata were employed, nor any alcohol or opium given except on one occasion, when the repeated actions of the bowels had caused some exhaustion. By the end