the avowedly few number of cases and the numerous connecting links, somewhat rash to maintain that these are examples of an arthritis peculiar to locomotor ataxy. Then, again, in order to prove the case for a peculiar arthropathy, it must be shown that ataxics are more liable to joint trouble than other people, for unless they are less liable to rheumatic arthritis and common joint diseases than the rest of mankind, they will have these troubles together with their special ones, so that a larger percentage of ataxics than of ordinary people will have joint disease. But this has never been shown to be so, and my impression is that ataxics would not be found to be more liable to joint disease than any other class of people. But we are told post mortem the difference is to be seen, inasmuch as the wearing away process predominates over the production of stalacrites. The conditions under which ataxics are placed will, it seems to me, account for this, which, as shown above, is not always very marked; their whole vital power is lowered by the restraint imposed upon them by their malady. Thus they are often confined to bed, and various depressing complications are liable to supervene. Is it, then, strange that the new bone should not be thrown out very abundantly? The excessive wearing away can easily be accounted for when we remember the extreme thinness of the bones. If we look to other diseases, we see how the general condition of the patient modifies their course; for example, if a patient be in a very low condition, the granulations on an ulcerating surface will be small and grow slowly, whilst if he be in robust health they will be abundant and grow quickly. If in this case, why in that of the joint mischief may not the condition of the patient be used to explain a seeming peculiarity?

Further observation may show that Charcot's disease is a condition specially associated with locomotor ataxy. My object has merely been to point out that this has not been yet completely proved, and to present the arguments against it; also to suggest that whilst some cases of Charcot's disease may, like other nervous arthropathies, be due to the alteration of some trophic influence, a large number of cases that have been brought forward as a special disease are ordinary and well-known forms of arthritis, possibly somewhat modified by the condition of the patient.

St. Thomas's-street, S E.

CHARCOT'S JOINT DISEASE

(ATAXIC ARTHROPATHY; TABETIC ARTHRITIS).

BY PHILIP H. KIDD, M.B. EDIN.,

ASSISTANT-SURGEON TO THE HARTLEPOOLS FRIENDLY SOCIETIES' MEDICAL ASSOCIATION.

THE comparative rarity of this disease, its recent discovery, and the obscurity that still hangs over many points alike in its pathology and its clinical picture, justify, I think, the somewhat detailed description I have given of the following case:—

Mr. —, between forty-two and forty-three years of age, a small shopkeeper, began about a year and a half ago to complain of pains in his thighs and the lower part of his abdomen, which he compares to being slit with a knife, and for the relief of which he used to curl up his left leg, so that his heel touched the trunk on the same side, and take long walks. Shortly afterwards he noticed a crackling sound in his left thigh whenever he moved it, and this was succeeded by swelling over the region of the hip-joint, which seems to have reached as far as half-way down the thigh on the outside, and was accompanied by a more circumscribed swelling in front of the joint, thus showing, I take it, that it was a true effusion into the cavity of the articulation. He then called in the medical officers of the Association, who prescribed for him, and painted his hip with iodine. Treatment was followed by subsidence of the swelling, but the crackling sound remained, and the pains descended into his leg, and about that time he also noticed wasting of the leg. He was able soon afterwards to get about by means of a stick, and attendance on him ceased for some months. On March 8th last, he first noticed the crackling in the right hip, unaccompanied this time by any swelling, and as this increased, and the corresponding leg and thigh began also to waste, he asked for further attendance.

On April 4th I saw the patient, and elicited the following facts. He has always lived a steady, quiet life, and has a

comfortable home; has had no form of venereal disease, nor suffered from nocturnal emissions; has always been a healthy, active man, and the only point in his history is that about seven years ago he was knocked down by a frightened cow in the street, and was brought home looking, his wife says, "just like a corpse." She avers that he has never been the same man since. He has been married fifteen years and had nine children, of whom five are alive and all healthy. He has never indulged in spirituous liquors, though his father is a heavy drinker. His family history is good.

The patient when I saw him was a good deal emaciated, had an anxious expression, and a dusky, unhealthy complexion. There was no evidence of any pulmonary or cardiac disease. On moving either hip loud crackling sounds were produced, which were propagated down the thigh. He complained of pains like being slit with a knife down the legs and in the lower part of the abdomen; sometimes these pains passed up into the epigastric region, and then he lost his appetite for a day, but there was never any vomiting or other gastric disturbance of any kind. There was no girdle pain. The patellar tendon-reflex was entirely absent in both limbs; in sitting on the bedside to have this tested his right foot swung at a normal angle to the leg, while in the left limb the dorsum of the foot and of the leg were in the same straight line, and the great toe curved downwards to the ground; the cutaneous veins were noticed to be engorged in both lower extremities, especially so in the left. Tactile sensation was fairly correct in both soles, though it was delayed; but there was well-marked analgesia except in one spot in the waist of the foot. The character of the gait was too much marked by the double hip-joint disease to be trustworthy; but he did not seem to have the usual feeling of padding in the soles of his feet; he had never noticed any difficulty about walking in the dark, but soon began to totter when standing with his eyes shut. The glutei muscles were not atrophied, and when standing they were in a condition of spasm, which was probably due to the great laxity of the ligaments. He had now no skin disease, but last summer while under treatment he said he had an eruption on his chest, which seemed to have been a diffused redness not marked by wheals, vesicles, or papules, and which came and went. When it was fully out it was accompanied by intense itching and burning, but did not seem to have had any relation to, or connexion with, the slitting pains. The gastric, intestinal, and laryngeal functions were normal. For three weeks previously his urine had passed away from him while sitting or lying down; the first thing he knew about it was the wetness of his shirt. The vision of his right eye was about normal, but with his left he could not make out No. 20 Snellen's types at any distance. The pupils were both a good deal contracted, but retained a feeble amount of accommodation to both light and convergence. They responded less readily to light than to convergence, so that the Argyll-Robertson phenomenon might be said to have been partially developed. With the ophthalmoscope the fundus of the right eye appeared to be normal; the fundus of the left was pale, the vessels were small and tortuous, and the optic disc was atrophied.

There could, I think, be no doubt that this was a true case of locomotor ataxia, and of the joint disease which sometimes accompanies it. The salient points seemed to me to be the particular joints affected; the appearance of the grating prior to any effusion; the great laxity of the ligaments in the ataxic limbs and the early date in the history at which this would seem to have existed; the absence of *crises gastriques*; the position of the left foot when pendulous, as somewhat complicating the diagnosis; and the differential diagnosis from chronic osteo-arthritis in such a case as this where the locomotor ataxia was not previously known to exist. As regards the question of diagnosis, Dr. Byrom Bramwell¹ gives three criteria—(1) that this disease is more acute; (2) that in chronic rheumatic arthritis the smaller joints and the hip are most frequently affected, whereas in locomotor ataxia the knee and shoulder are most often involved; (3) the presence of liquid effusion and dislocations. I have not found any of these criteria of very much help, for my case has lasted very nearly a year, probably quite, and, beyond the fact of another joint having become involved, not much progress seems to have been made. As to the joints affected, besides this one, I have access to the records of only eight cases. In the case shown by Mr. Page to the Medical

¹ Diseases of the Spinal Cord, p. 231.

Congress of London² the tarso-metatarsal joints were the seat; in both Mr. Macnamara's two cases,³ shown at the same time, the right hip was affected; at the same time Professor Charcot demonstrated two cases; in Berthelot the left knee was first attacked, though the right hip eventually did not escape; in Cressy there was disease of both hips. Dr. Hale White's⁴ post-mortem case was of both hips; Mr. Lucas's case⁵ showed the right elbow and foot affected; in Mr. Raven's⁶ the knee-joints were the first attacked. With such a record Dr. Bramwell's view can scarcely be accepted; indeed it would seem that the hip is rather a favourite seat of the disease. In both Mr. Macnamara's cases, as in mine, the effusion was but a fugitive phenomenon, and dislocations are not always seen apparently till a later period. The most trustworthy criteria seem to me to be the absence of pain in the joint itself, which must be carefully distinguished from the lightning pain in the limb, which may easily be mistaken for rheumatic; the laxity of the ligaments; and any evidence of disease of the nervous system. A careful inquiry will then probably set the matter at rest by showing the existence of ataxia.

With reference to the true nature of the disease and its etiology, I would for the present be content to look on it as depending on want of nutrition, and referable to the same predisposing causes, at least, as the laxity of the ligaments and as the perforating ulcers occasionally seen in ataxic limbs. The cause of this want of nutrition I am inclined to agree with Dr. Althaus in ascribing to peripheral neuritis; Dr. Charcot's theory of affection of the anterior cornua would seem to be upset by more recent cases, and for Dr. Buzzard's bulbar theory, I know of no evidence; besides, a spinal lesion does not seem to be a necessary factor of locomotor ataxia itself.⁷ As to whether the disease is a true atrophy or a low and modified form of inflammation, I must leave to pathologists to discuss; my point of view is from the bedside, not the post-mortem room.

I cannot conclude this report without thanking my late senior colleague, Dr. Johnstone Weir, both for giving the case over to me to study directly he knew my diagnosis, and also for kindly furnishing me with the report on the eyes; his experience gained while resident at the Glasgow Eye Infirmary renders his report accurate and trustworthy.

West Hartlepool.

ON CYSTS AND CYSTIC TUMOURS OF THE BREAST.

By HENRY T. BUTLIN, F.R.C.S.,

ASSISTANT-SURGEON AND DEMONSTRATOR OF DISEASES OF THE LARYNX,
ST. BARTHOLOMEW'S HOSPITAL.

NO. III.—CYSTIC TUMOURS.

THE two preceding papers have been devoted to the consideration of those diseases of the breast in which the formation of cysts played the chief or, in some instances, the only part, and in which there was no real tumour external to the cyst, although some of them, the glandular cysts especially, contained intra-cystic growths. In this, the last paper of the series, I propose to speak of the tumours which contain cysts, and particularly of those tumours to which the name of sero-cystic has been given.

I have recently described in the *System of Surgery* and in the fourth volume of the *American Encyclopædia of Surgery* the general relations between cysts and solid tumours, and I need only point out now that cysts may form in tumours of the breast just as they form in the natural tissues of the breast; they may be glandular or connective tissue (lymphatic). They are far more common in the connective tissue tumours, fibromas, and sarcomas than in the carcinomas; and, contrary to what might be expected, cysts of glandular origin are far more common than those of connective tissue origin. When, however, the frequency, nay, the almost invariable occurrence, of glandular structures in the connective tissue tumours is remembered, this fact will not appear so singular. The manner of the formation of the glandular cysts in the connective tissue tumours is precisely similar to the manner of their formation in the normal

breast. Fluid is secreted into the interior of the acini and small ducts which form so striking a part of the structure of the tumours. The fluid cannot escape because there is no apparatus provided for its escape, the ducts which connect the secreting structures of the tumour with the main ducts of the gland, if they still exist, are obstructed, and consequently worthless; the fluid, therefore, must either be absorbed or must distend the cavities into which it has been poured. When a connective tissue tumour, of whatever kind, contains cysts, the cysts are much more prone to become the seat of intra-cystic growths than are the cysts which develop in the normal breast; for, in addition to the growths which spring from the wall of the cysts into their interior, the tumour, constantly increasing, tends to increase in the directions of least resistance, and thrusts its new growths into the cavities of the cysts, pushing the wall before them, distorting the shape of the cysts, and leading by pressure to absorption of part or of the whole of the fluid. In many such tumours there is thus a continual struggle for place between the solid and fluid constituents. The glandular apparatus pours out fluid, the fluid widens a cavity for itself, the solid puts forth new solid, the new solid is projected into the interior of the cavity, and the cavity is often scarcely formed before it is filled up and obliterated by solid growths. In the carcinomas the manner of development of cysts is probably not always that which has been described. The impulse to the development of new cells in the interior of the glandular acini and ducts is so strong that it is more than probable that new cell formation precedes the development of cysts, and that the cysts are, in many instances, due to the degeneration of the central cells of a cell mass (in the manner described by Mr. Eve).

I have in my possession notes of sixty-six cases of cystic tumour of the breast, many of which were examined by myself, and all of which were examined microscopically. In all these cases the cysts were of more or less considerable size, so as to form a striking feature of the disease. Fifty-six were connective tissue tumours, nine were carcinomas. One was an adenoma. The connective tissue tumours were thus divided: twenty-five sarcomas, eighteen fibromas, six adeno-fibromas, seven mixed connective tissue tumours. For all practical purposes the fibromas and adeno-fibromas may be included under one heading, for there is almost never a fibroma which does not contain glandular structures, and the rather larger proportion of glandular structures which the adeno-fibromas contain does not in any respect affect the course which they pursue. The mixed connective tissue tumours were composed of fibrous, mucous, and sarcomatous tissues in varying proportions, so that some of them might be regarded as fibrifying sarcomas; others as fibromas which had not completed their development. They invariably contained glandular structures, sometimes in considerable quantity. Anatomically, it appears from these sixty-six cases that almost every kind of tumour which attacks the breast may be cystic, and that there is not any one variety of tumour which especially deserves the name of cystic. Nor, on the other hand, are there any of these tumours which occur in the breast only in association with cysts—in other words, only in a cystic form. Clinically, the facts in my possession are defective, for few of the cases have been followed long after operation. Still, the facts which have been observed all tend so show that the life history of these tumours is dependent on the nature of their solid constituents, not on the size or number of the cysts which they contain. Thus, the further history of seven cases of sarcoma is recorded. In four of these very considerable operations were practised, the entire breast having been removed freely at the first operation; no recurrence took place in any of them, although one of the patients died between two and three years later of cancer of the other breast. In the other three cases recurrence took place in two of them after removal of the tumour; in the third after amputation of the breast. The last was evidently a very bad case; the tumour had only been noticed a few months, it had grown quickly, and the recurrence took place almost before the wound of the operation was healed; no further attempt to remove it appears to have been made. The recurrences in the first and second cases were numerous, continuing till one patient died from the effects of the fourth operation, and until the last report in the other case, full fourteen years after the first tumour was removed. It is interesting to note in confirmation of Dr. Gross's statement that sarcomas of the breast do not affect the lymphatic glands, that the only instance in which there was enlarge-

² Transactions, vol. i. p. 124.

³ Ibid., pp. 125, 128.

⁴ THE LANCET, Nov. 24th, 1883. ⁵ Ibid., March 1st, 1884.

⁶ British Medical Journal, Feb. 23rd, 1884.

⁷ THE LANCET, Nov. 3rd, 1883.