which I had the privilege of seeing in the London Hospital. Sometimes both upper limbs with adjacent portions of the thorax in the form of a "vest" are affected, but it is distinctly exceptional to have the sensory disturbance generalised over the whole body, though such cases have been reported.⁹

REFERENCES.

¹ Morgagni: *Adversar. Anatom.*, vi. ² Starr: *International Journ. Med. Sciences*, 1888, xcv, p. 456. ³ Bruhl: *Contribution à l'Etude de la Syringomyélie*, Paris, 1890. New Sydenham Society's Translation, London, 1897, p. 104. This is an excellent monograph, with good bibliography. ⁴ Bruhl: *Sydenham Society's Translation*, chapter ii. ⁵ Erb: *Ziemssen's Cyclopædia*, xlii, p. 800. ⁶ Schultze: *Zeitschrift für klinische Medizin*, 1888, xlii, 7. ⁷ Kahler: *Prager med. Woch.*, 1882 and 1888. ⁸ Jackson and Galloway: *Lancet*, 1892, i, p. 408, etc. ⁹ Bruhl: *Sydenham Society's Translation*, p. 108.

THE DIAGNOSIS DURING LIFE OF RETINAL AND LABYRINTHINE HÆMORRHAGES IN A CASE OF SPLENIC LEUKÆMIA.

By JAMES FINLAYSON, M.D.,

Physician to the Glasgow Western Infirmary and the Royal Hospital for Sick Children, etc.

A CASE of leukæmia which was studied in the Western Infirmary some ten years ago has not yet been reported, but certain points in the diagnosis made me resolve to publish it some time.

The patient was a married woman, aged 29, with five children; she was affected with splenic leukæmia, the spleen being enormously enlarged, without any glandular affections recognisable during life. Her fifth child was born in January, 1887, and her attention was directed to a lump in her left side three months later. In August, 1887, she was admitted to the Glasgow Royal Infirmary, where the lump referred to was identified as a large spleen, and the blood was found to be highly leukæmic—nearly one white to three red corpuscles. No hæmorrhages were found in the retina at that time. After trying a change to her native place—Islay—she was admitted to the Glasgow Western Infirmary on June 14th, 1889. The condition of the spleen was much the same as reported in the Royal Infirmary notes, but it was apparently larger, and the strength and condition generally had deteriorated; slight œdema of the feet was present on admission, but it passed off with rest in bed. The blood showed in 1889 very much the same proportion of red to white corpuscles as in 1887; we found 1,190,000 white and 2,080,000 red corpuscles in the cubic millimetre. This was shortly before death. The white corpuscles were mostly of the ordinary size, but about one-fourth of them were larger and more granular, with fatty contents. In 1887 the Royal Infirmary notes indicated the same diversity in size of the white corpuscles.

A month before admission to the Western Infirmary vomiting was troublesome for three weeks, but she seemed to have had no bleedings from the stomach or bowels (except slightly from piles when the bowels were costive), and no epistaxis.

After admission to the Western Infirmary the œdema disappeared, but the bowels became very loose, and this resisted treatment. A small swelling at the left frontal region suppurated and burst; this became erysipelatous, and the redness spread. This was associated with only slight pyrexia (100° to 100.4° F.), but it hastened her death, which occurred on July 19th, 1889, fully a month after admission.

The greatest point of interest was the implication of the eyes and the internal ears in a case of leukæmia; the possibility of recognising this during life, as due to hæmorrhages, was a matter of diagnostic interest.

About a month before admission to the Western Infirmary, whilst crossing from Islay in the steamer, she was supposed to have contracted "a cold," and to this she ascribed the deafness and ringing sounds in her ears from which she suffered, as well as the bloodshot appearance in her left eye. While on the steamer she was affected with severe giddiness, when the noises in the ears came on, and she felt sick, although the sea was quite calm at the time. As already stated, there had been an attack of vomiting a week or two before this.

An examination of the left eye showed at once that the blood-shot appearance ascribed to cold was really a conjunctival ecchymosis, and this immediately suggested the probability of hæmorrhages in the fundus; these were readily found

on ophthalmoscopic examination. This discovery in its turn suggested the possibility of hæmorrhages being present in the nervous structures of the internal ear on both sides. The sudden deafness, the noises in the ear, the giddiness, and sickness, all pointed in the direction of a labyrinthine affection. An exploration of the ears was made by Dr. Thomas Barr. Nothing abnormal was found in the external or middle ear, and the Eustachian tubes were easily inflated, but no improvement in the hearing resulted. A watch could not be heard on contact on either side, and the voice was heard only when loudly spoken near to the ears. The tuning-fork was heard longer by air conduction than by bone conduction. The conclusion of Dr. Barr's report on June 17th was: "The suddenness of the onset, the extent of the deafness, the presence of giddiness, and disturbance of head balance at the beginning, as well as the severe tinnitus, point to exudation in the cavities of labyrinth, probably hæmorrhagic in character."

At the examination of the body after death, the eyeballs were removed for examination by Dr. Thomas Reid, and the bones containing the internal structures of the ear were carefully dissected by Dr. Barr. The sections made of the retina displayed the hæmorrhages beautifully, and a microphotograph showed a striking abundance of leucocytes in the blood vessels. The examination of the internal ear showed hæmorrhages in the vestibule and the first turn of the cochlea, not at all in the middle ear.

Amongst other features of interest in the *post-mortem* examination may be mentioned the size of the spleen, 14 by 8 inches, and the weight, 6 lbs. 4½ ozs. It presented on section large, yellowish, firm patches of wedge-like shape, suggestive of infarctions, but on microscopic examination no indication was found of this having actually occurred. Some general enlargement of the mesenteric and retroperitoneal lymphatic glands was noted, and similar glands were seen in the neck. The omentum presented numerous, small, pearly nodules. Minute submucous hæmorrhages were seen in the colon with some injection of the vessels. The brain presented nothing specially abnormal, but the veins showed a considerable amount of greenish yellow clot. The heart contained greenish, opaque, fibrinous material, with a grumous fluid residue.

BIBLIOGRAPHY.

As regards the literature of the subject, the most important contribution is by Gradenigo, in 1886, who gives a summary of the cases up till that date. A case by Steinbruegge, in 1887, presents some resemblance to my case, inasmuch as both the eyes and the ears were affected. From the reports of cases it would seem that in leukæmia there may be hæmorrhagic lesions both in the middle and inner ear, and that these may coexist with hæmorrhage elsewhere. (Something of the same kind has been observed in pernicious anemia. See *Archiv für Ohrenheilkunde*, Bd. 31, S. 231.)—Politzer, A. Pathologisch-anatomische Veränderungen im Labyrinth bei leukämischer Taubheit. Congress in Basel, September, 1884. *Archiv für Ohrenheilkunde*, Bd. xxii, S. 109.—Blau, L. Ueber Erkrankungen des Gehörorgans bei Leukämie. *Zeitschr. f. klin. Med.* Bd. x, Heft 1 und 2. Abstracted in *Archiv für Ohrenheilkunde*. 1886. Bd. xxiii, S. 169, and in *Archives of Otolaryngology*, vol. xv, p. 265.—Gradenigo, G., jun. Das Gehörorgan bei der Leukämie (with plates). *Archiv für Ohrenheilkunde*. 1886. Bd. xxiii, S. 242.—Steinbruegge, H. Labyrinthine Disease in a case of Leukæmia. *Archives of Otolaryngology*. 1888. Vol. xvii, p. 59. *Zeitschrift f. Otolaryngologie*. Bd. xvi, S. 238. See *Archiv für Ohrenheilkunde*. Bd. xxiv, S. 209. 1887.—Gellé. Leukocythämie mit Taubheit und Facialislähmung beginnend. (*Revue Mens. de Laryng.* 1887. No. 12). See *Archiv für Ohrenheilkunde*. Bd. xxvi, S. 253.—Steinbruegge, H. Communication to International Congress in Berlin. August, 1890. Case of leukæmia in a girl of 14 years, with hæmorrhages in the middle ear and in labyrinth. *Archiv für Ohrenheilkunde*. Bd. xxxi, S. 231.—Wagenhäuser. Labyrinth befund eines Falles von Taubheit bei Leukämie. *Archiv für Ohrenheilkunde*, 1892. Bd. xxxiv, S. 219.

THE ARTHROPATHIC DYSTROPHIES.

By T. ALDOUS CLINCH, M.D. EDIN.,
Pathologist to the Durham County Asylum.

DEFINITION OF TERMS.

It is a well-known fact that injuries of joints, often by no means of a severe character, leave behind them weakness which not uncommonly lasts for the rest of the sufferer's life. In some cases the weakness and atrophy of the limbs is so marked that special attention has been paid to them, and they were named cases of arthropathic amyotrophy (Charcot).¹

This name, however, is too limited, for changes occur in