forgot my surroundings and on one occasion I asked a friend standing near how he was several times within a minute. Between times I had merely closed my eyes and forgotten his existence. Another peculiar effect was the occurrence of lucid intervals. They seemed to come on suddenly, sometimes but not always as if the result of an effort of the will. They lasted a variable time, being shorter when the symptoms of intoxication were most marked. In them I could converse in a fairly rational manner and even direct the work of the laboratory to a certain extent. But even in my sanest moments I was deficient in will power. I offered no resistance to being pulled out of the chair and made to walk the laboratory floor, and when asked if a medical man might be sent for I objected, but had no power to say "No." At one time, although walking rapidly, I felt cold and had to adjourn to an adjoining room where a fire was burning. I stood before it and thought how strange things were. I had a hazy notion of having been rational once and I wondered if ever I should be rational again. I was devoid of feeling, fearless of death, and even insensible to the feeling of others: if the friend by my side had died I think I should have laughed. About 5 o'clock a medical man was sent for. I had now been rational for nearly half an hour, but as soon as he appeared I again fell into an acute delirium and performed the same antics I had performed before. I knew I was acting foolishly, but I could not help it. Gradually I became calmer and then I told him what I had done. I could not have been devoid of reasoning power, for when he suggested an emetic I argued that it would do little good, as most of the substance must have been absorbed; I was too happy to be disturbed in that way. I told him I was getting better, but soon afterwards I again lost control. At 6 o'clock I had two cups of coffee and then feeling somewhat better walked home. The street seemed longer than usual and its lamps almost interminable, but although I had looked across the quadrangle previously this was the only illusion of distance that I noticed. The fresh air and exertion revived me. I ate a good dinner, afterwards read a little, and retired to bed at 11 o'clock without having experienced any symptoms of sleepiness. I quickly fell asleep and woke at 7 A.M. My memory had not quite returned to normal, but otherwise I was quite well. At 11.30 slight tenesmus and relaxation of the bowels occurred.

Although these notes were written immediately after the experiment many things which happened are not recorded; of many of them I have not the slightest recollection. I am told that early in the intoxication I drank water frequently, even out of my hand, but I have no remembrance of it. During the action of the cannabinal my pulse rose from 60 to 90 per minute, sensibility as determined by pinching was blunted, and my appearance was described as "ashy pale." The pupils were dilated somewhat,⁴¹ but throughout reacted to light and accommodation. At no time do I remember having had hallucinations; no unpleasant after-effects were experienced, and the drug appears to possess no constipating action.

About three weeks after the last experiment 0.05 gramme ($\frac{1}{4}$ grain) of cannabinal was taken (2.35 P.M.). No effect was felt for four hours; then symptoms similar to those I have described, but less severe, occurred. First, there was dryness, or rather sliminess, of the mouth and a peculiar taste. This was soon followed by weakness in the legs and intoxication. After dinner (7 P.M.) I sat in an easy chair and closed my eyes. A dreamy state supervened and visions of a grotesque character appeared. A regiment of soldiers was seen marching; their movements gradually increased to running, their legs went faster and faster, until finally the whole regiment was lost in a number of rapidly revolving circles. Then visions of ugly boys were seen; from slight ugliness greater ugliness developed, and this increased so as to become ridiculous. Similar hallucinations occurred in a friend. Accompanying—probably preceding—this dreamy state was a pleasurable tingling all over the body, sometimes and in some places (the cheeks especially) becoming almost painful. Time seemed long, but it did not pass with the same rapidity as on the former occasion, or rather I did not experience the same forgetfulness; external relations were more connected. Gradually I grew sleepier, and it was with difficulty that I kept my eyes open. I did not succeed in sleeping in a chair, and at 9 retired to bed. Sleep did not follow for some time and I awoke at 6 A.M.

As before, slight relaxation of the bowels occurred. Much smaller doses (0.01 gramme, about $\frac{1}{4}$ grain) produced no sensible effect.

A few months afterwards a non-medical friend complained of sleeplessness and at my request took 0.05 gramme ($\frac{1}{4}$ grain) cannabinal made into a pill with starch. He afterwards supplied me with the following account: "The pill was taken at 10.30, just before retiring for the night. I probably dozed a little at first, but I remember hearing the clock chime 11.30 and later 11.45. Almost immediately afterwards I began to see strange sights, which passed so rapidly that I had no time to examine them in detail. One that I remember was a bow-legged boy running with a chest of tea between his legs; another seemed like a procession of females in the distance, but on closer examination turned out to be coffins; these quickly melted away, leaving nothing but confusion. The clock struck 12, then 12.15. I remember nothing further until I awoke refreshed at 8 A.M. from a sound slumber." Cannabinal has been used in a few other cases as a hypnotic and with success, but at present I do not wish to enter into its uses as a medicine or even to recommend it as a therapeutic remedy. Considerable experience is always needed to establish the usefulness of any medicine, and this I have not yet been able to obtain. All that is claimed for this substance is that it is active—as active as any preparation yet made—and pure. Whether it will change by keeping or not time alone can tell. Perhaps when greater leisure enables me to complete the pharmacology of the drug I may be able to speak more definitely upon this point.

Of the other constituents of charas the terpenes are the most important. These have no peculiar action; they act as terpenes and in doses of 0.5 gramme (from 7 to 8 minims) are apparently without effect. It is possible that the good effects obtained by some physicians (Silver, McConnell, Bond, Edwards, &c.) in cases of menorrhagia, dysentery, &c., may be partly due to these constituents, but of this I hope to speak later. In conclusion, I express my thanks to Mr. Wood, Mr. Spivey, and Mr. Easterfield for the material with which they supplied me; to my friend, Mr. Stephenson, for samples of cannabis; and to Mr. Heath for notes of his observations during the time I was under the influence of the drug.

Cambridge.

ON CERTAIN APPARENTLY ORGANIC TUMOURS OF THE ORBIT WHICH DISAPPEAR UNDER MEDICINAL TREATMENT.¹

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I HAVE for a long time been familiar with the clinical fact that internal medication can in certain instances bring about the disappearance of orbital tumours. This is true, moreover, of tumours which exhibit features rendering differentiation from those of a malignant or certainly organic nature difficult, and but for the effects of treatment the distinction would perhaps be impossible without an examination of their minute structure. Just now I am thinking particularly of orbital growths occurring at about the middle period of life, when those of a malignant nature would be prone to arise. I propose to relate recent instances illustrative of this contention.

Panas of Paris, at the annual meeting in London of the British Medical Association in 1895,² brought forward a very valuable and instructive paper dealing with pseudo-malignant tumours of the orbit. He expressed the opinion that because dispersion of these growths followed the administration of iodide of potassium it was a mistake to regard syphilis as the only cause, and he believed that a "number of neoplasms thought to be lymphomas, sarcomas, or syphilomas ought to be attributed to the dyscrasia produced by some toxin." He spoke of a class of infectious tumours, the syphilitic being an example but not the only one. We are of course all familiar with the frequent impossibility of getting a specific history even in

⁴¹ In the case of the Brothers Smith they were contracted (Pharmaceutical Journal, vol. vi., p. 173).

¹ Read before the Sheffield Medico-Chirurgical Society, Oct. 22nd, 1896.

² Brit. Med. Jour., vol. ii, 1895, p. 955.

cases which admit of little doubt of syphilitic taint. My experience in a fairly large number of instances of syphilis acquired in an innocent, non-venereal manner has impressed me with the fact that it is much more possible for an individual to become syphilised without being aware of the nature of the affection than might be supposed. But Panas' observations are, nevertheless, of interest as he recounts instances which have undergone apparent cure with treatment by arsenic and other remedies which can hardly be regarded as anti-syphilitic.

CASE 1.—A short time since I recorded³ the case of a middle-aged man who was admitted under my care into the Sheffield General Infirmary with what was regarded as inflammatory enlargement of the right lacrymal gland of several weeks' duration. It formed a very noticeable tumour at the outer and upper part of the orbit, rendering the eye somewhat prominent and materially interfering with the movements of the eyelid, which was also somewhat œdematous. The tumour continued to enlarge in spite of the administration of iodide of potassium—in fact, the commencement of the use of this drug was characterised by a somewhat rapid increase in size of the enlarged gland. Later, however, it became more stationary, and after the patient had been in the infirmary for some weeks my surgical colleagues, whose opinion I sought, were disposed to regard the growth as a sarcoma and suggested early removal. Before taking this course, however, as the man was anxious to return to his home he was allowed to do so on his promising to report himself after a short interval. This he did in a few weeks' time. The tumour had then become considerably lessened in size. No treatment had been adopted since his leaving the infirmary. A fortnight later he was again admitted. The edge of the tumour was all that could then be felt. In the course of the next few weeks the whole of the growth had disappeared and the eye had resumed its normal characteristics. There was no history of mumps or any general disorder with which to associate the enlargement of the gland. The only explanation offered was one by the man himself, who attributed the disorder to the fact that as an agriculturist he had been using sheep dip made particularly strong with sublimate, but there was no evidence of any wounds or abrasions on the hands, nor had there been salivation or implication of salivary glands or other symptoms suggestive of poisoning.

The case just related, much as it appeared at one time like a malignant tumour was in all probability only an instance of chronic inflammatory enlargement of the lacrymal gland. The cases to be now mentioned are more pertinent to the object of this paper.

CASE 2.—A woman, aged forty years, was sent to me on Nov. 20th, 1895, by Mr. Tristan of Retford owing to a prominence of the left eyeball due, he feared, to a tumour of the orbit. The prominence of the globe was first noticed about three months before and had recently become rapidly worse. For a considerable period prior to this she had suffered a great deal from headache confined to the left side. Treatment had, however, rendered this much less. On examination I found that the left eyeball was distinctly pressed forward, but that there was no marked interference with the movements of the globe. The upper eyelid was somewhat ceddened and a trifle œdematous. A tumour was readily found at the outer part of the orbit; it was detected by the finger running also into the orbit above the globe, but the part where it was chiefly situated was on the floor of the cavity extending to the inner side. Here it was distinctly felt projecting as a rounded, somewhat hard, growth over the edge of the orbit. It was also slightly tender to the touch. The tumour was thus an extensive one, but the ophthalmoscope gave no evidence of interference with the intra-ocular circulation. Vision was unimpaired and there were no indications of parts adjacent to the orbit being affected. The patient had been married for twenty-three years. A son, aged twenty-one years, was living. Inquiry afforded neither myself nor Mr. Tristan any other suspicion of specific history than that many years ago she had had miscarriages, the last being ten years previously. The opinion expressed to her medical attendant was that she had an extensive tumour in the orbit, that it would probably require removal, and to get rid of it entirely it would be necessary to remove also the globe. But notwithstanding the absence of a specific history (which I may say he confirmed) I mentioned that I had seen so many growths disappear

under iodide of potassium that I should be disposed to give her a course of that drug before resorting to surgical measures. Mr. Tristan adopted this suggestion. On Dec. 15th he wrote that "the tumour has subsided in a marvellous manner," and this dispersion had continued when she paid me a visit on the 24th. At this date I found that the proptosis had nearly gone and that there was apparently little difference between the two eyes, but along the lower border of the orbit the edge of the tumour could be just felt much reduced in size but still a trifle tender to the touch. Starting with a dose of five grains of the iodide she had for some time been taking sixty grains daily. On Feb. 11th, 1896, she paid me another visit. At this time there was nothing to notice in the appearance of the eye as different from the other. The finger passed along the lower and inner wall of the orbit could no longer detect any tumour.

About the same time that the previous patient first came under observation, another woman, somewhat older, appeared among my patients at the infirmary. She had a tumour in the right orbit, displacing the eyeball forwards, but it was not more extensive than that in Case 2. It involved the inner and lower part of the orbit. The onset had been more gradual and it was of longer duration than in Case 2 and was associated with some pain. It would be about as correct to assume a specific taint in one as in the other, and yet in this patient the iodide, tried for a time, exerted no influence, and it was deemed necessary to remove the growth, a proceeding to do which effectually involved the sacrifice of the globe. The tumour proved to be a sarcoma growing from the inner and lower part of the orbital wall.

CASE 3.—In October, 1894, I had under treatment at the infirmary a man, aged forty-two years, who for several weeks before coming to me had noticed that the left upper lid was slightly swollen, and latterly he had suffered somewhat from aching pain. He had a good family and personal history and denied any venereal taint. In addition to the somewhat swollen condition of the eyelid already mentioned the left eyeball was more prominent than its fellow. The finger carried between the globe and the upper wall of the orbit taught that the space was filled up by some large growth which was firm feeling and somewhat nodular. The movement of the globe upwards was also interfered with and the eyelid drooped, and he was able to raise it very imperfectly. During the short time he attended among my out-patients his condition became rather aggravated. At this period he was shown at the Sheffield Medical Society. The presence of a tumour was recognised and its possibly malignant character was discussed by several members who saw the patient. He was admitted into the infirmary and at once placed upon iodide of potassium. A steady improvement commenced which continued until the tumour had become completely absorbed, the appearance of the two eyes being similar and evidence of the former trouble being altogether removed.

The cases mentioned bear a very close clinical resemblance to tumours regarded as sarcomatous and in which the diagnosis has been confirmed by the microscope after the growth has been removed. There was the same evidence to the touch of a somewhat hard, elastic tumour, not fluctuating or pulsating, and somewhat nodular on the surface as an organic tumour would present. Treatment proved that they could be dispersed without operation, and therefore it appears to me that the lesson to learn is one that Panas enforced in the paper to which I have already directed attention—viz., that before resorting to surgical measures for orbital tumours the effects of internal treatment should be tried. It is not necessary that iodide of potassium with or without mercurial inunction should be employed, for Panas mentions the benefit derived from arsenic and other remedies. Panas also suggests that serum, according to the nature of the infection which has been at work, should be used.

The simplest way of accounting for the presence of such tumours as I have referred to is, of course, to presume that they are syphilomas and very naturally to discount the absence of specific histories. If we are to believe that, as a consequence of dispersion following the administration of the iodide, the nature of the tumour has been proved nothing more, of course, can be said. I confess, however, that my feeling is that such tumours as have been referred to in this short communication are not necessarily syphilitic, and the observations of Panas as to unilateral and bilateral orbital growths afford strong support to such a contention.

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³ International Clinics, vol. i., p. 236, 1894.