the existence of a special form of disease having its primary anatomical seat in the sweat-follicles.

Secondly: to Dr. Robinson's paper I have replied at length in a communication which is now in the hands of the editor of the *American Archives of Dermatology*; and I will, therefore, only say here that I am not prepared to recognise Dr. Robinson's case, upon which so much reliance is placed, as one of dysidrosis—at all events, as a typical instance of the disease; nor that recorded by Dr. Thin last week in the least degree as typical of the early phases of the affection. Neither gentleman seems inclined to make the least allowance for the fact that there are several instances of vesicular conditions (*ex.* sudaminous, pemphigoid, etc.) of the hand which are quite distinct from dysidrosis, but which are very liable to be mistaken for it.

Thirdly: that there is such a disease as I have described, and which can be proved to begin in the sweat-follicles, the fluid present having the characters and reaction of sweat at the outset of the disease, but subsequently becoming altered by the admixture of serosity, is unquestionable. Only a couple of weeks since, in the cold weather, a case presented itself at University College Hospital of dysidrosis in its earlier stages, in which to a score of persons present the origin of the disease in the sweat-follicles was conclusively evident. Just at the tips of the fingers, on their palmar surface, the skin was somewhat swollen and reddened; the ridges of papillæ and the openings of the sweat-follicles much more distinct than usual; and from the latter, fluid oozed out, which had a distinctly *acid* reaction. When the fluid was wiped off, a fresh supply oozed out, and was *acid* in reaction. With a lens, the fluid was actually observed to come from the distended sweat-follicles, and not the papillary layer, which was not vesiculated at all, and had its cuticle intact upon it. Lower down on the fingers and about the palm of the same hand, the parts were more inflamed and swollen, and the secretion was *alkaline*. Yes, it is a fact that there were two distinct reactions in adjoining parts of the same hand. A number of us carefully examined the case with good lenses, and satisfied ourselves that the disease began as a sweat-flux; that the parts around the sweat-glands and the papillary layer soon became secondarily involved in inflammatory action, which spread farther and wider from the original essential anatomical seat of the disease, the sweat-glands; and that the fluid originally effused was sweat, which became mixed with serum derived from other parts to which the inflammation had spread. This is the account I have consistently held about the disease from the first: that it is a disease of the sweat-apparatus, with secondary results. A condition analogous to ordinary vesiculation does *necessarily* occur *secondarily* in dysidrosis; but this is not the *primary* and *essential* condition. Both Dr. Thin and Dr. Robinson have signally transgressed one of the elementary rules of dermatology; *viz.*, not to confound secondary with primary phenomena.

Dr. Thin makes the strange statement, that "Dr. Fox has produced no evidence which could affect our judgment one way or the other" as to the seat of the original vesicles. My account of the disease was based upon nothing short of the actual observation of a large number of cases; and in my *Atlas*, Plate 51, I have actually figured the ducts of the sweat-apparatus distended with sweat. Dr. Thin's remarks would lead the reader to suppose that I made a "guess" about the disease, and did not pursue a long series of observations before I wrote upon it.

Fourthly: Dr. Robinson's argument that, because the fluid in dysidrosis is usually found to be alkaline, therefore the disease can have no connection with the sweat-glands, or that the fluid secreted does not come in any part from the latter, is a most fallacious and valueless one. For how long a time has it not been well known that altered sweat is alkaline? Are Dr. Thin and Dr. Robinson really ignorant of this fact? and, if not, why ignore it? Besides, I have shown that the secretion at the outset of the disease is really acid and nothing less than sweat, though it speedily becomes alkaline. At a later stage, the fluid is *necessarily serous* in chief part. In the face of all that has been said, and upon very incorrect observation, I can only reassert that there is such a disease as I have described under the term dysidrosis, and that time will show that I am quite correct.

Fifthly: There are many others besides myself who can offer abundant testimony to the fact of the commencement of the disease in the sweat-apparatus; and I commend to notice the statements made by one of the most careful observers in America, Dr. Dühring, who in his recent work, p. 237, says: "In the several instances in which I have observed this affection, these symptoms (referring to Dr. Fox's description) were all present in a striking degree. The disorder manifestly has its seat about the sweat-glands, and consists in an undue distension of the sweat-duct throughout its entire course, followed by a collection of fluid within the skin," etc.

THE PATHOLOGY OF CHOREA.

(Being an Abstract of an Address delivered at the Annual Meeting of the Staffordshire Branch.)

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Physician to the North Staffordshire Infirmary; President of the Branch; etc.

CHOREA is very prevalent among the patients of the North Staffordshire Infirmary, and would appear to be more so among persons engaged in the pottery manufacture than among other inhabitants of the district.

Under the term chorea, many different nervous disorders and lesions have been comprehended; and it remains to be determined what group of symptoms shall be represented by that term.

Notes of one hundred and fifty-six cases, the majority of them occurring in the practice of the North Staffordshire Infirmary, were analysed. The results, as to age and sex, were confirmatory of the general statements that chorea is especially a disease of girls under puberty. There is a rapid rise in the numbers affected after the eighth year is attained, and this reaches its maximum in the course of the tenth year; it then falls as rapidly until the sixteenth, when an increase again, of smaller amount, is met with, and is maintained almost to the same extent in the following year; after which, cases are few.

In connection with these facts, it is noteworthy that the cases among girls of fourteen and upwards comprise a very considerable proportion of relapses, and not a few of them are examples of evident nerve-lesions, accompanied with heart-disease; or else are of reflex origin, from uterine disorders or pregnancy.

The tendency to relapse is a special feature of the disease, and obtains in about one-fourth of the number of cases. The malady, in half the number under observation, affected both sides of the body; of the remainder, one side was affected more seriously than the other in two-thirds; and in the rest was sufficiently one-sided to be called hemichorea. In more than one-half of the cases, the muscles of the face were involved. In one-sixth, the speech was affected. The ophthalmoscope was used in a few instances, but revealed nothing save some pallor of the disc.

No positively general rule exists regarding the urine. It is of higher specific gravity usually when the movements are most energetic; but the variations in this respect are great in different patients, and at different times in the same patient.

Choreic patients are nearly always in low health, very often anæmic, and generally of emotional or excitable nervous temperament, with feeble nerve-power. Hereditary predisposition is very rare. In about one-seventh of the number examined, rheumatism or rheumatic pains, or heart-disease, has been found to have affected one or both parents; consumption also appears to have been as frequently a family inheritance; and the same may be said of nervous disorders among immediate relatives.

Of the number of patients in whose cases the fact was ascertained, rheumatism had occurred previously to the chorea in about one-fifth; but it would seem, as far as inquiry was made, that scarlatina was about as frequent an antecedent.

Distinct evidence of cardiac lesion was found in rather more than one-fourth of ninety-two cases in which it was sought for and noted. In thirty-seven of these, which were the most recently collected, it was discovered only in one-fifth.

As to assigned causes, fright stands as causing one-fifth of the number of cases; and previous rheumatic and choreic attacks, severally, as productive of a like proportion. Of the remaining two-fifths, reflex irritation, antecedent epileptic fits, and injuries to the head, were made accountable for a considerable proportion; the cause being unknown or unassigned in the rest.

A first group of cases comprises such as are met with in children up to the age of puberty, and in most of which the disorder exhibits itself in its simplest and highly curable form. In this simple form, rheumatism, cardiac and cerebral lesion, do not constitute an element; but there are exhaustion, anæmia, a disturbed nervous condition, and defective nutrition. This form best deserves the special name: chorea.

A second group is connected with the occurrence of rheumatism, and with cardiac lesions traceable thereto: not that the chorea is due directly to embola in the great ganglionic centres in the cranium, although it is probably due indirectly to them, and to their paralyzing and inhibitory action upon the controlling power of the cerebral lobes.

Although further investigation be first necessary to establish the relation and its frequency, there appear grounds for believing that there may be a group of scarlatinal cases of chorea, parallel with the rheu-

matic, and probably nearly as often having concomitant cardiac lesion. It is not allowed that chorea is peculiarly of cerebral origin, as some assert; for the arguments in support of such hypothesis are faulty; and experience certainly indicates a not uncommon spinal origin of the disease. To this latter source is attributable a considerable proportion of the fourth group of cases—the reflex, which are best illustrated by the chorea of pregnancy.

In the matter of treatment, experience shows that, in most simple cases, any special treatment by drugs may be dispensed with; and that the chief matter to attend to is the general health and nutrition of the patients, which may be sufficiently dealt with by good diet, the withdrawal from causes of excitement and annoyance, and by discipline and sensible management. Not but that various drugs may prove valuable auxiliaries: as, for instance, the salts of iron when there is anæmia, and in all cases the writer uses the cold douche to the spine, or the shower-bath. In the rheumatic group of cases, much the same course of tonic treatment is generally applicable; any special cardiac symptoms calling for appropriate remedies. In the reflex group, the rule of action is to remove the cause of reflex irritation.

Cases with high temperature and a febrile condition indicate the presence of collateral disease, only indirectly associated with choreic movements, and call for treatment directed to the removal of the organic mischief. In several cases of very severe chorea, tartar-emetica has been found of great service; and in many, of moderate severity, bromide of potassium was apparently useful.

CLINICAL REMARKS ON TUMOURS OF THE ORBIT: WITH CASES.*

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As is well known, almost any kind of new growth may be found affecting the structures within and immediately around the orbit. The tumours most commonly met with belong to the class of sarcomata. These, as a rule, commence within the eyeball, affecting primarily the choroid; they subsequently filter through—if such an expression may be used—or burst open the sclerotic, and involve the soft tissues of the orbit. Instances of other tumours, as exostoses, sarcomata commencing in other structures than those of the eyeball, simple and hydatid cysts, all occasionally occur. The last named, however, is of such rarity that, so far as I know, only three cases have been placed on record.

The following cases, examples of all the above mentioned varieties of tumours, have occurred in my practice at Guy's Hospital during the last four years.

CASE I. *Cyst in Orbit Tapped; Disappeared, but subsequently Re-filled.*—R. G., aged 19, a lighterman, was admitted January 22nd, 1875. Four months previously, a finger was thrust into the left orbit between the globe and eyebrow. Considerable swelling of the lids quickly followed. The next day, he could not open the eye on account of the swelling; there was no bruising, but the swelling was of the same colour as the surrounding skin. He was blistered; and in about a week, the swelling subsided a good deal, but never entirely disappeared.

On admission, there was partial ptosis, with paresis of the superior rectus. An ill-defined tumour could be felt in the position of the lacrymal gland (enlargement of gland?). He was ordered 5 grains of iodide of potassium and 15 minims of tincture of cinchona, in water three times a day; and ammonia liniment to be rubbed into the temple at night.

April 1st. There was now a distinctly fluctuating swelling situated below the outer extremity of the upper margin of the left orbit (connected with the lacrymal gland?). The ptosis had disappeared; the eyeball was somewhat displaced downwards; its movements were, however, unimpaired; there was no diplopia. The ophthalmoscope showed engorgement of the retinal veins and hyperæmia of the optic disc; no pulsation of the retinal vessels. No pulsation could be detected in or about the tumour.

April 5th. The tumour was punctured with a small trocar; two drachms of semi-transparent straw-coloured albuminous fluid were drawn off. The tumour disappeared, and the eyeball regained nearly its natural position. In three days, the engorgement of the retinal vessels and disc had subsided. Three weeks later, the tumour was as large as

ever, and its entire removal was advised; the patient, however, did not attend again.

CASE II. *Cysticercus in Right Orbit: Removal.*—Alice T., aged 14, was admitted February 1st, 1876. She had always been delicate; she had scars of abscesses in the neck, some of which dated back five years. A month before admission, she began to suffer some pain in the right eyeball; and the globe had since begun to protrude.

On admission, the right eyeball was pushed downwards and somewhat protruded; movement upwards was entirely wanting; other movements were perfect. She had diplopia when looking upwards only. The right eye read Snellen x. The ophthalmoscope showed the optic disc to be red and greatly swollen, so as to bulge considerably into the vitreous chamber. The retinal veins were engorged and tortuous; the arteries were of normal calibre. There was no pulsation of the retinal vessels; no pulsation in or about the orbit; no pain. A growth, situated between the globe and superior rectus, extending backwards and pressing on the optic nerve, was diagnosed. The case was advised to be watched, and no treatment adopted.

February 14th. Two days previously, the right eye became suddenly inflamed and painful; there was no shivering. There was much swelling of the upper lid, together with oedema of the conjunctiva, and increased impairment of mobility of the eyeball; no constitutional disturbance. It was thought probable that suppuration had occurred within the orbit. An incision was made through the conjunctiva beneath the upper lid. A director passed into the orbit came into contact with a firm resisting substance. A narrow knife was passed along the groove of the director, and an incision made in the tumour; only blood escaped.

February 28th. The protrusion of the eyeball having increased, it was decided to cut down on the tumour, and, if possible, remove it. An anæsthetic having been administered, an incision was made through the soft parts from near the inner angle of the orbit to beyond the outer angle. The lacrymal gland, pushed forward, was exposed and removed; next came a firm resisting growth, which was separated from its attachments, partly by the knife and partly by tearing away with the finger and the handle of the scalpel. The tumour appeared to be intimately connected with one of the ocular muscles, apparently the superior rectus; the muscle required division. On making a rather strong effort to detach the tumour, it collapsed, but no escape of fluid was noticed; there was, however, free hæmorrhage going on at the time. The collapsed remains of the growth were removed by carefully separating it from the parts around with the finger-nails; it was found to extend quite back to the apex of the orbit, and was closely in contact with the optic nerve. After removal, the growth was found to be an extremely thick walled cyst, which had ruptured at a point wounded by the knife. The wound in the soft parts was closed by a few fine sutures, and the margin of the lids pared and united by sutures, so as to preserve the eyeball (which had escaped uninjured) from any subsequent damage consequent on exposure.

February 29th. The lids were a good deal swollen; the incision was healing by primary union; a suture was removed from near its outer extremity. Some blood and pus escaped. There was a good deal of constitutional disturbance. The wound was poulticed.

March 6th. The incision had firmly healed, except at the outer extremity. The eyeball could be seen through a gap in the union of the lids at the inner canthus; it appeared to be quite sound. She could count fingers.

August 4th. The union between the lids was divided; the upper lid drooped; there appeared to be no power of raising it. When the lids were held open, the eye read Snellen 1½. The ophthalmoscope showed the fundus to be quite healthy, the swelling and engorgement of the optic disc having quite subsided. The eye deviated downwards and slightly outwards.

October 2nd. A portion of skin of the orbicularis muscle was removed from the upper lid, and the inferior rectus was divided.

October 16th. The lid could be raised so as to expose the greater part of the cornea; the eye still squinted downwards and outwards. A further examination of the tumour, shortly after its removal, showed it to be made up of an external extremely thick cyst-ball, composed of inflammatory tissue. A portion of muscle adhered intimately to the cyst, and appeared to be incorporated with it. Within the external envelope was a thin pellucid cyst, which separated easily, and, like the outer wall, had been ruptured during removal. This cyst was found to be formed of a membrane, composed of the peculiar serrated fibres which are said to be characteristic of hydatids; there were no hooklets. The whole cyst was nearly as large as the eyeball, but, owing to the thickness of its external envelope, its cavity was extremely small.

CASE III. *Melanotic Sarcoma: Removal; Return; Subsequent Removal and Return.*—Mary S., aged 41, was admitted July 19th, 1875.

* Read in the Section of Surgery at the Annual Meeting of the British Medical Association in Manchester, August 1877.