beneath this, perhaps to the extent of an inch deep. This variety of pustule, when situated on the forehead, is very formidable; the ulceration to which it gives rise commonly extends to the bones of the head, the upper laminæ of which become carious in consequence. The pustule, the crust, and the ulcer are, then, three stages of pustular secondary syphilis. When the ulcer heals under the crust, the crust falls off, if you adopt a proper plan of treatment; and you will find that the cicatrix which marks the healing of the ulcer underneath the crust is always depressed to a greater or less extent in the skin, sometimes very much so, and is vividly red. If you put the patient into a hot or vapour bath after the healing of the ulcer, you will find that this redness will be very apparent; and it will continue until the whole of the syphilitic virus is eradicated.

The treatment resolves itself into three modes: a treatment by diet; a local treatment in certain stages; and a constitutional treatment. The diet depends very much upon the age of the patient and his constitution. If you have a young strong man of 22, put him on low diet, on broth and milk. You rarely have, however, pustular secondary syphilis at all, or certainly not to any formidable extent in persons otherwise of good health; it is a disease of a feeble habit of body, and marks essentially that condition described as the syphilitic temperament.

If, on the other hand, you have a patient where the skin is white, pulse frequent, and pustules large, he must be put on good diet, plenty of animal food, and porter or ale. The treatment by sweating, starving, and purging, is generally an unsatisfactory plan, although recommended by some persons. Under a low diet, I have seen the sores of pustular syphilis rapidly spread.

At the head of all remedies in the treatment of pustular secondary syphilis must stand the mercurial vapour bath, prepared and used as I have frequently shown you, according to the printed directions* I have more than once had occasion to allude to. The bath should be used to the extent of gentle diaphoresis three times a week. A generous diet should be associated with it. The next best remedies are the iodides of mercury, with the iodide of iron, and the iodide of potassium, with sarsaparilla and bark, according to circumstances and particular indications. There are two iodides of mercury, a proto-iodide or ioduret, a yellow salt, and the biniodide, of a beautiful red colour. The former may be given in doses of half-a-grain to two grains, the latter in doses of one-sixteenth to one-eighth of a grain. Their properties are said by Cazenave to be injured by their union with opium. As far as my experience goes, patients in this country rarely bear the iodide of mercury well. They always complain of the griping pain and nausea it produces. They may then be treated with the biniodide of mercury, which is generally borne better; but that requires to be given in small doses, the twentieth or twelfth of a grain; and you may give it two or three times a day in a solution of iodide of potassium. Patients generally bear this better than the iodide. This form would answer very well.

℞ Hyd. biniodidi gr. i.
Potass. iodidi ℈ii.— ʒ i.
Aquæ distillatæ ʒi. M.

A teaspoonful to be given twice or three times a day in some decoction of the woods, such as saponaria, guiacum, or sarsaparilla.

I generally prefer, however, giving from five to ten grains of Plummer's pill at night, with the iodide of potassium in the daytime. The iodide of potassium I believe rarely cures without the assistance of some preparation of mercury. One of the patients now in the hospital has been treated in this way, and the result has been most satisfactory. The other patient has been treated rather differently, by five grains only of Plummer's pill at night, and the iodide of potassium in fifteen grain doses twice in the day. He has a deep secondary ulcer secreting a great quantity of pus; and in such cases the iodide acts well in large doses, it must not be given in small doses. You may give it in five or ten grain or scruple doses. I have seen forty or fifty patients who have had these large secondary syphilitic ulcers, which have all healed well with the large doses of the iodide of potassium. This salt, in the doses I have just mentioned, is particularly indicated in those secondary ulcers which succeed to the rupture of the pustules of ecthyma, or the softening of syphilitic tubercles; in small doses it has failed, whilst in larger, in the same case, it has been equally successful. I have repeatedly had occasion to verify this remark. It must not, however, be continued long; not beyond two or three weeks in such doses. I have known cases in which it was taken in small doses from three to five years, and without any influence whatever on the disease, beyond keeping it, as it were, in abeyance or suspense, while in such cases a mild treatment by mercurial vapour has caused the disappearance of all the symptoms in a few weeks.

The pustule, before its rupture, requires no local treatment; that is, it requires no dressing. But when the crust falls off, the local treatment must begin. We have in the case of the patients under observation adopted a local treatment, which has been very beneficial. The pustules have been dressed with a preparation consisting of equal parts of the precipitate of sulphur and the white precipitate of mercury, made into a paste with glycerine. If you dress secondary syphilitic sores with greasy substances, they almost always disagree; and the sore spreads from the error in the local treatment, and not from a fault in the constitutional one; but with this mixture the ulcers heal better than with any other I have lately tried. One patient has only been under treatment for three weeks, and all the ulcers are well. He had five or six large rupial crusts on the leg; these were detached, and the foul ulcers thus exposed were dressed with this mixture, which gives no pain, and is a cleanly and elegant prescription.

Local applications are of vast importance in the treatment of secondary as well as primary syphilitic ulcers; and I cannot too strongly impress upon you the importance of a remark made by a late French writer, that frequently the best antisyphilitic is a proper dressing, methodically applied

Birmingham, June 1855.

* The Modern Treatment of Syphilitic Diseases. Third edition, p. 266.

TWO FATAL CASES, ONE OF APOPLEXY, AND THE OTHER OF EPILEPSY, OCCURRING IN THE SAME FAMILY: WITH REMARKS.

By ROBERT DUNN, Esq., F.R.C.S.Eng.

[*An Abstract was read before the Medical Society of London May 19th*, 1855.]

HAVING, in a former communication on Tubercle of the Brain,* advocated the importance and the duty of placing upon record cases of interest which occur in the daily walks of private practice, I am only carrying out the suggestions which I have recommended to others, by publishing in the pages of the ASSOCIATION JOURNAL the following detail of two fatal cases, occurring in the same family, which have recently come under my observation; and which, I think, are not devoid of practical interest, however much they may be wanting in novelty to the experienced practitioner. The cases are those of a father and daughter. The former died of an attack of hemiplegia twenty hours after the seizure; the latter sank from exhaustion after a succession of epileptic fits, having been the subject of epilepsy for ten years. In both cases, I had the advantage of a *post mortem* inspection. It may not be unprofitable to narrate them together. We shall thus be the better enabled to judge whether there be anything in the antecedents of the father which can throw light upon the origin of the dire malady, of which the daughter was the victim. For, in the emphatic language of Dr.

* ASSOCIATION JOURNAL, 1854, p. 712.

Latham,—"Prior to diseases, to their diagnosis, their history, and their treatment, prior to them and beyond them, there lies a large field for medical observation. It is not enough to begin with the beginning. There are things earlier than their beginning which deserve to be known. The habits, the necessities, the misfortunes, the vices of men in society, contain materials for the inquiry, and for the statistical systematizing study of physicians, fuller, far fuller, of promise for good to mankind than pathology itself."*

THE FATHER'S CASE. *History.* The father died at the age of 50. He was of a mixed temperament, the sanguineous with the nervous; and, in the heyday of his life, he was a fine, athletic, handsome man. Though his trade was that of a butcher, he was a sensible, intelligent, and well educated man, of good intellectual abilities, kind-hearted, and was much respected. He was of a very convivial turn of mind, fond of society, of good living, and of dining out; but under the excitement of intoxicating potions, he lost all power of self-control, and ran into great excesses. After such outbreaks, his subsequent depression of spirits was commensurately great, and his sense of delinquency oppressed him. He inherited the gouty diathesis from his father, and about twelve years ago had a severe attack of rheumatic gout, which lasted for three months, and confined him to the house. His head was seriously implicated.

During the last six years of his life, he had been under my observation, and I had had frequent opportunities for observing his character and conduct. He had been more steady, regular, and temperate in all his habits. But he was subject to disturbance in the cerebral circulation, to a sense of giddiness at times, and to flecting pains in the head, attended with depression of mind. Any emotional excitement, and especially of a painful character, was usually accompanied with a feeling of uneasiness in some part of the head, and sexual intercourse was generally followed, the next day, by pain in the occipital region. He had had frequent threatenings of rheumatic gout, but the remembrance of his former sufferings led him to have recourse to remedial measures without delay.

About a month before his death, he had a peculiarity with respect to vision, which he thus described to me. In attempting to read he could only see distinctly and clearly at first one half of the word, but by adjusting the eye, by a change of position, he could then see the other. He could not, in consequence, sign his cheques satisfactorily, and it was on this account that I was requested to see him. Under a strictly regulated system of diet, perfect quietude, and a little mild mercurial alterative medicine, he greatly improved, and in less than a fortnight was able to sign his cheques as usual, and was cheerful and hopeful. On the evening previous to his fatal attack, his mind was more than usually buoyant, to the great delight of his friends, who congratulated him on the occasion of his apparently marked improvement in health and spirits.

Seizure. The very next day, however, February 21st, about one o'clock P.M., while sitting quietly by the fireside in his parlour, he felt suddenly that he had lost the use of his right side. He attempted, by means of the left hand, to raise himself up, and would, in consequence, have fallen upon the floor, but for the timely interference and prompt assistance of his wife, who, fortunately, happened at the moment to notice the effort he was making to rise. I was immediately sent for. I found him hemiplegic on the right side; there was total loss of voluntary motion, and diminished, but not abolished sensibility; the reflex actions were persistent. He was quite sensible and collected; he did not complain of any pain, and was not conscious of having had any fit; there was no drawing of the mouth, nor had there been any convulsive action, or twitchings; but the pulse was extremely week and feeble. Ammonia was freely administered; he was carried up stairs, and put to bed. A mustard poultice was applied to the nape of the neck, hot water to the feet, but he never rallied. After the first two hours, there seemed to be indications of a little improvement; the pulse was stronger, and there was more warmth upon the surface of the body. He was so sensible and collected, that he asked his son to read the *Times* newspaper to him. Soon after this, however, he was sick, and vomited; his respiration became more and more oppressed, and the pulse more feeble. But he lay perfectly passive; there was no convulsive action whatever, nor rigidity of arm or leg. About twenty hours from the time of the seizure, he quietly expired; the breathing becoming sensibly more and more laborious and oppressed.

Examination thirty-six hours after death. On removing the brain, and placing it with its base upwards, the attention was at once arrested by the state of the cerebral arteries. The circle of Willis was studded with atheromatous deposits in all directions, and the same condition was found to prevail generally in all the arteries of the brain, more especially in the branches about the fissura Sylvii; even on their minute ramifications atheromatous spots were detected by the microscope. There was also a very perceptible swelling or bulging out on the left crus cerebri from a large clot of extravasated blood, with parietes so thin, that the blood seemed ready to burst forth. This bulging was found, upon further examination, to form part of a large extravasation, which had taken place from one of the arteries in the fissura Sylvii. The effusion extended backwards into the posterior lobe of the brain; it had broken up the crus cerebri, and encroached upon the vicinity of the pons Varolii. The crus cerebri and surrounding cerebral substance, the tractus opticus, and corpora quadrigemina, on the left side, were in a state of white softening. The corpus striatum, and thalamus opticus, on the same side, were implicated in a like degeneration on their outer surface. In the right hemisphere, in the white substance of the middle lobe, on a level, and beyond the outer side of the corpus striatum, an apoplectic cyst, the remnant of a former clot, was found. The hemispheres were healthy, the convolutions well developed, and the cerebellum was large, and in a normal state. The sinuses and veins were gorged with livid blood. The brain was the only viscus examined.

REMARKS. The *post mortem* appearances satisfactorily explain the hemiplegia, and the phenomena attendant on his death. From the character of the seizure, the mode of death from apnœa, and my knowledge of his previous history, I ventured to form a diagnosis as to the pathological condition of the brain, and committed it to writing before making the inspection. I felt assured there existed disease of the vessels, and that the hemiplegia was due to rupture and extravasation of blood at the base of the brain in consequence. The left motor tract of the medulla oblongata I inferred to be the seat of the lesion, and its locale, though involving the corpus striatum, to be most probably in the vicinity of the pons Varolii, from the manner of his death. I was not prepared to meet with white softening to the extent which we found, though I thought the tractus opticus, or corpora quadrigemina on the left side, were probably so affected. It was gratifying to find my diagnosis essentially verified. But in this, and in cases like this, the point of practical interest to which I am anxious to direct the attention of others, is the atheromatous condition of the vessels of the brain. I have a strong conviction in my own mind, the result of personal observation, that these atheromatous deposits, or, as some pathologists would style them, steatomatous, are associated generally, if not constantly, with the gouty diathesis. It is true, that, in the present instance, there had been but one regular attack of rheumatic gout, twelve years ago; but it must be borne in remembrance that the attack was a very severe one, and that the head was seriously involved. Under my own observations, there had since been several threatenings, but which, with proper care, and remedial treatment, were warded off. Some years ago, I was forcibly impressed with this view of the subject, from the following case of a Chancery solicitor, 49 years of age. I had attended him, for some months previous to his death, in an attack of rheumatic gout,

* Latham on Diseases of the Heart.

affecting the feet and knees. He was a man of considerable mental endowments, and had, at one time, been in extensive Chancery practice; but he was a *bon vivant*, the victim of gout, and had met with great reverses of fortune. When I was called to him, he filled the office of managing Chancery clerk to a house in the Temple. The attack of rheumatic gout, supervening upon a shattered and broken-down constitution, was rather a severe one, though it gradually yielded to ordinary treatment, but every subsequent excess or debauch was sure to be followed by premonitory symptoms.

About four months before his death, he was threatened with apoplexy. He was seized with giddiness of the head, confusion of thought, difficulty and thickness of speech, with partial loss of power on the right side. But by prompt remedial measures, the observance of perfect quietude, and total abstinence from business, the symptoms disappeared, leaving a sense of weakness on the right side, and rather a dragging of the leg and foot. His mind, too, appeared to have received a shock, from which it never recovered. He had not the same aptitude for business as formerly, was more lethargic, and gave indications of a loss of mental as well as physical power, impressing me with the conviction that there was *ramollissement* of the cerebral substance. On the morning of the fatal attack, he was found out of bed, on the floor, in a state of coma, with stertorous breathing, right side, arm, and leg paralyzed, with an extremely feeble pulse, and cold extremities. He was not altogether insensible, as he could be roused for a minute or two by speaking loudly to him, when he seemed to recognize those about him, but he was unable to speak, and quite hemiplegic. He had occasional convulsive shudderings, and died on the second night of the attack.

At the autopsy, the vessels on the superficies of the brain were found to be gorged with dark blood; at the basis, the vertebral arteries, the circle of Willis, and the ramifying branches about the fissura Sylvii, were studded with patches of yellow atheromatous deposit on their coats, which arrested my attention. The convolutions of the brain were well developed, and there was a greater abundance of grey matter than is generally observed; the white had rather a dingy look. On opening the lateral ventricles, the right presented nothing abnormal, but in the left, the upper surface of the corpus striatum was greatly distended, and partially ruptured by a clot of blood passing upwards. The ventricle was filled with black blood, which extended into the cerebral substance beyond it, in the direction of the fissura Sylvii. About one third of the thalamus opticus was softened down, and mixed with the bloody degeneration of its substance. In this case, the fatal rupture had evidently its seat in one of the diseased arteries in the vicinity of the fissura Sylvii. My own experience as a matter of actual observation, quite agrees with that of Dr. Bright, "that effusions take place more frequently than in any other situation, at a little to the outside of the corpus striatum in either hemisphere, just at the point where many large vessels may be traced coming off from the trunk in the fossa Sylvii, and pervading the brain."*

I could cite numerous instances, which have come under my notice, of atheromatous deposits in the vessels of the brain, as the concomitants of rheumatic gout, but content myself with this well marked illustration, more especially as it was this case which first directed my attention to the subject, and by observing that the case of the great John Hunter presents an apposite and an illustrious example. The connexion between gout and apoplexy has long been known; but so far as my own observations have extended (and I have had the means of pathological investigation), the connexion has been with that second form of apoplexy involving diseases of the vessels, which Abercrombie has so graphically pourtrayed. Dr. Todd, in his valuable *Croonian Lectures on Gout and Rheumatism*, asks the question, "May not the deposits which take place in the arteries be of the gouty kind?" There can be no doubt that they are the consequence of an abnormal state of nutrition, but it is only by a careful induction from facts, furnished by multiplied observations, that a correct opinion can be formed of the nature of the materies morbi, and of the peculiar diathesis from which such deposits are eliminated. In my own limited experience, and field of observation, I have found them the associates of rheumatic gout, and the precursors of apoplexy. But whether they are as necessarily the consequence of the rheumatic gouty diathesis as they are the seat of the rupture in apoplexy, is a problem which remains to be solved, and for the solution of which a far more extended field of observation is required than falls to the lot of any private practitioner. It is on this account that I am anxious to solicit the attention of others to a point of such great practical importance. The site, the nature and character, and modes of development of these atheromatous and steatomatous deposits on the coats of the arteries have all been ascertained with great exactitude by the microscopic investigations of Gulliver and others. Now as to their origin; are they not, in reality, "retrograde metamorphoses" of the fibrous tissues of the coats of the arteries, and, in consequence of a depravation of healthy assimilation, such as is well known to obtain in the gouty diathesis?

In rheumatic gout, we have both defective assimilation and imperfect excretion; nay, more, for where the gouty habit is perpetuated by excesses and errors of diet, both the sources, the chyle and the effete particles, from whence the blood is fed, are contaminated. It is, therefore, a matter of small surprise that the fibrous tissues of the arteries should undergo disintegration and transformation into products low in the scale of organisation, into steatomatous, atheromatous, and calcareous degenerations. But whatever may be the peculiar diathesis from which steatomatous and atheromatous deposits are eliminated, they are the associates of rheumatic gout, and harbingers of apoplexy. It must be admitted that such a condition of the vessels of the brain is a grave affection, and, in proportion as their vital endowments are impaired, pregnant with the most serious consequences. When the arteries are no longer resilient elastic tubes, but are inelastic, here dilated and there contracted, the regular distribution of the blood is deranged, and the cerebral functions disordered. Rupture, and the extravasation of blood, as an apoplectic seizure, may follow; or occlusion and its consequences, an arrest of nutrition, atrophy, white softening, and the total abolition of the functional powers.

It behoves us, then, in cases of rheumatic gout, carefully to watch the cerebral symptoms, the psychological manifestations, and to warn our patients of their doom, if they will persist in excesses, and by errors of diet, in perpetuating the gouty habit.

Daughter's Case. *History.* In little more than a month from the death of her father she sank from exhaustion, after a succession of epileptic fits, rapidly following each other, in the nineteenth year of her age. She had been subject to epilepsy for ten years. She was the fourth of a family of seven children, five of whom are still living. They are not remarkably strong and robust, but of pallid complexions, and giving the impression of being of delicate constitutions, though they are all healthy. The brother, who died at the age of 13 years, was of a strumous habit, and fell the victim of hip disease. The mother is a fine healthy woman, with a well regulated mind, of active business habits, and has never suffered from serious disease of any kind whatever.

The daughter herself was a tolerably robust and healthy child up to the age of 7 years, the period of her second dentition: physically and intellectually, she was a child of good promise, of an amiable disposition, kind and affectionate, but unduly sensitive. At this period she had a slight attack of chorea, which readily yielded to appropriate treatment of the tonic kind. But scarcely had the nervous system recovered its tone, when she caught scarlatina, and this was followed by rheumatic fever. The attack of scarlatina was not of a severe or malignant type, nor was that

* Dr. Bright's Hospital Reports—"Diseases of the Brain and Nervous System", vol. ii, p. 351.

of the rheumatic fever which succeeded it; but following, as they did, in such quick succession after chorea, her whole nervous system received a shock from which it never thoroughly recovered. In the midst of the excitement of preparing for a juvenile party, the first fit took place, and was the occasion of great alarm. Six months elapsed before she had another fit, but afterwards, they became frequent at varying intervals, and without any premonitory symptoms; eventually, after the lapse of two or three years, they were so frequent and so severe that it was found necessary to remove her from the school which she attended. After this, she had private instructions at home, but it was soon discovered that her aptitude for learning was greatly impaired; she could not keep her attention fixed upon any subject, and, in consequence, what she learned one day, she had forgotten by the next. It was attempted to teach her music. She mastered the notes, and some of the early lessons on the pianoforte, but could get no further, so music was abandoned, and eventually all attempts to teach her anything new. She was fond of assisting in the domestic duties of the house; but as the fits came on without the slightest warning, her mother was kept in a state of continual dread and alarm about her. As the period of puberty approached, the fits became more severe and frequent. The first flow of the catamenia came on about her fifteenth year, and continued to be regular afterwards. Its appearance was looked forward to in the hope of its being sanitary, and for a time the paroxysms were not so frequent, and were less violent; but ultimately, and for the last two or three years of her life, scarcely a day passed without an attack of the *petit mal* of Esquirol. At times, the attacks were attended with violent convulsions, when she perspired profusely: the perspiration had the acid odour characteristic in rheumatic fever; the urine was loaded with lithates and purpurates, and sometimes with bile. I may here remark as to the medical treatment generally, that I had several consultations on her case, and all the usual remedies were tried, without any permanent benefit. The cold shower bath was used. Purgatives and tonic medicines in varied forms were given. Great attention was paid to the state of the secretions and excretions, and the elimination of morbid elements from the blood. But, in despite of all these, the fits became more frequent, and she appeared to be evidently but gradually passing into a state of fatuity. The sudden death of her father aggravated her attacks, and she sank from exhaustion, after a succession of paroxysms, rapidly following each other.

After puberty, her organic frame and muscular system became well developed, and she was, with the exception of a pallid countenance and rather a vacant gaze, a stout and fine looking and well formed young woman. But her head was small, and there was an evident deficiency in the anterior development of the cranium. Her appetite was excellent, and the animal functions were vigorously performed. She had a strange propensity for hoarding, and was very fond of money. However defective her memory on other matters, it never failed her in respect to any monies which belonged to her; and when in any trouble or grief, from whatever cause, a small gift of money from her mother had a magic influence; all grief was instantly banished from her mind, she was pleased and happy. On the occasion of her father's sudden death, I thought it most prudent for her not to see the dead body; at first, she seemed much distressed, but a few words in explanation and comfort from her mother, and a small present of money, quite satisfied her, and she grieved no more on the occasion.

Inspection of the body thirty hours after death. The viscera of the abdomen and chest were all healthy, and there was no disease of the valves of the heart. On removing the brain for inspection, the narrowness of the anterior lobes, and their want of breadth and height in front, and the deficiency of anterior development generally, were remarkably conspicuous. Altogether, the brain was small, but from the fissura Sylvii backwards, the parts about the base of the middle and posterior lobes were more full and voluminous, and presented a marked contrast with the temporal and anterior regions. The latter impressed me with the idea of arrested development. The insula of Reil, and the convolutions about the fissura Sylvii, were full and well developed. The vessels on the superficies, but especially at the base of the brain, were gorged with livid blood. On carefully slicing down the hemispheres, which were very firm in consistency, the white substance, and more particularly in the anterior lobes, was found to be studded with innumerable small foramina, out of which the blood vessels were here and there seen issuing; but these channels were much larger than the vessels. I was struck with this peculiar appearance of the medullary substance, and it brought fresh to my recollection a case of epileptic convulsions which had come under my notice last summer with Dr. Todd, in which the brain presented a worm-eaten appearance. The vessels under the microscope were found to be in the highest degree fatty. Dr. Todd had never seen a more perfect example of such degeneration; there were also numerous compound cells, full of fatty particles, which he has described as characteristic of white softening. The liver, heart, and kidneys, all presented evidence of fatty degeneration. In the pelvis of one of the kidneys was a calculus of oxalate of lime blocking it up; there were more in the bladder, and the urine taken from it after death was albuminous. In the present case, immediately after the morbid inspection by my friend, Dr. L. Beale was so kind as to examine, under the microscope, portions both of the white and grey cerebral substances, but without being able detect anything very abnormal in the ultimate structure of either. To the eye, the grey matter was to appearance rather of a lighter colour than usual, and the anterior convolutions were shrunken.

Remarks. It may not be uninteresting to inquire whether anything in the antecedents of the father may have exerted a baneful influence upon the destiny of the daughter. Physiologically considered, I think, the truth of the denunciation cannot be disputed, that "the sins of the father are visited upon the children". I need only point to the blighted ovum, where a syphilitic taint exists; and to those cases of hydrocephalus and convulsive diseases in children which come under the notice of every observant practitioner, where the parents have been the victims of intemperance and delirium tremens, or of general cachexia, from debauchery and dissolute habits. When we reflect, indeed, that the ovum is the joint product of both parents, the induction is perfectly legitimate that it may inherit the staminal elements of each in varying degrees; and in this way we see how hereditary diseases may be, nay, in reality are, perpetuated. "The generative act is, in its essence, one of secretion; the embryos being the result of the combination of two secretions, the one formed by the mother, and the other by the father. These secretions are composed of matter separated from the blood of each parent respectively; and it is obvious that the body which results from the union of both must partake of the properties and characters of both. And thus it is that we meet with children combining in equal proportions the qualities of both parents, while in others those of the father or of the mother predominate, as if the peculiar properties of the matter derived from one parent were such as to neutralise those of the other."*

Now, in the *primitive cell-germ* of an human organism, the joint product of both parents, are there not *potentially* contained the *vital, nervous,* and *mental forces;* and may they not be variously modified in their development and action by an hereditary taint? The genesis and development of these forces in the human organism, and their correlations with each other, is a most interesting and absorbing inquiry.

From the moment the human cell-germ comes into being, and is launched upon the ocean of time and space, *an organised entity exists,* fitted for a human destiny, and beginning a history in this world of reality—a doomed destiny, it may be, *ab initio;* and a history chequered with the va-

* Dr. Todd's Croonian Lectures on Gout and Rheumatism.

rying phenomena which characterise and attend an hereditary diathesis to disease, whether mental or bodily. From the first moment of its existence, matter and mind, body and soul, are never for an instant separated; their union constitutes the essential mode of our present existence: and both are subject to the laws of development and growth. The mind, like the body, passes through its phases of development, and may be arrested in its course. Not only, under the due supply of the nutrient pabulum, is the framework and the different organs of the human body evolved and perfected, one after the other, in accordance with all the subsequent wants of the future man, but, among the rest, from the same germ-cell is gradually developed the nervous apparatus and the encephalic ganglia, upon the vascular matter of which the mind is dependent for the manifestation of all its activities throughout the totality of life, in health, and disease.

Now, in the present instance, the father inherited the gouty diathesis; and it must be confessed that his habits of life were such as were not calculated to eradicate, but, on the contrary, to perpetuate, the hereditary taint. Chorea was the first disease from which the daughter suffered, and is essentially an affection of the nervous system. Coming on as it did about the period of the second dentition, and at a time, as it usually does, when the nutrition of the brain is in a transitional state, it may be fairly inferred, as her brother died of struma and her father was gouty, that in her case there was not only a weakened, but a depraved and abnormal state of nutrition, under which the generation of the nervous force was impaired, and chorea the consequence. The fact of her having suffered from rheumatic fever after scarlatina points to this conclusion; for rheumatism is a blood-disease, and the connexion between it and chorea is generally known and admitted.

There can be as little doubt, in my opinion, that scarlatina and rheumatic fever, following each other, as they did, in such quick succession, after chorea, in a constitution like hers, laid the foundation for that state of abnormal nutrition in the brain which ended in the development of epilepsy. The pathology of epilepsy is involved in obscurity. A patient dies from exhaustion, after a succession of epileptic fits; and the morbid inspection reveals to the senses, by the scalpel and the microscope, no appreciable alteration whatever, either in the brain or the cord, except, as in the present case, that the membranes, the cerebrum, and cerebellum, are gorged with livid blood. But, then, this condition is not pathognomic of epilepsy; it is frequently wanting; and as Foville, who had so large a field of observation, has justly observed, it is found in other cases where no epilepsy has existed, and is due, in fact, and entirely, to the mode of death, occurring in every form of death from apnœa. The case of the father presents us with an apt illustration. In another instance, it may happen that a spiculum of bone, or a tumour, is found pressing upon some part of the brain, and which had been the predisposing cause of that cerebral disturbance of the nervous force, which had, from time to time, exploded in the disruptive discharge of an epileptic paroxysm.

But in cases like the present, where the disease has been of long duration, and the paroxysms have been both severe and frequent, structural lesions are constantly met with; and, more especially, where the *petit mal* of Esquirol has become of very frequent occurrence. Here the state of atrophy, in which the anterior lobes of the brain were found at the *post mortem* inspection, not only satisfactorily accounts for her impaired perceptive powers, loss of memory, and weakened intellect, but leads to the belief that had her life been prolonged, with the extended degeneration, imbecility would have been followed, in all probability, by hopeless fatuity. I am inclined to the opinion of Foville that the intellectual degeneration is more constant, comes on more early, and is more highly destructive to the mental powers, under the *petit mal*, when the attacks succeed each other at very short intervals, than under the severer paroxysms attended with convulsions, but only occurring at remote intervals. This appears to me to be a legitimate induction, when we reflect that the cerebrum is the seat of intellectual action and volitional power, and that in every attack of the *petit mal*, though the convulsive agitation is absent, there is a sudden and total, though it may be but a momentary, abolition of intellectual consciousness and volitional power. The whole history of her life leads to the belief of the existence of an hereditary taint in her constitution, a contaminated condition of the blood, affecting more especially the nutrition of the brain, first developing the phenomena of chorea, and ultimately those of epilepsy.

I quite agree with Dr. Todd in his views of the humoural pathology of epilepsy, and that the fit is in reality a disruptive discharge of the nervous force. "Epilepsy", says he, "denotes a state of abnormal nutrition in the brain, and the fit is the consequence of a morbidly excited polarity."

When a highly charged or polarized body reaches a certain point of tension, it may instantaneously, and with violence, discharge itself. Now we have a familiar illustration of this in hysterical as well as in epileptic attacks; and when we bear in remembrance that the sensory ganglia not only receive the sensory nerves, but are themselves in such intimate connexion with the fibrous strands of the medulla oblongata, we can be at no loss to comprehend, what we are so frequently called upon to witness, highly excited emotional feelings finding vent and discharging themselves in violent and uncontrollable convulsive movements.

Some years ago, a case came under my notice of extensive abnormal innervation of the brain, unique in its kind, and as interesting and instructive, perhaps, as any case upon record. I merely allude to it now, in illustration of the morbidly excited polarity of the nervous force, which it displayed in the production of fits of convulsive agitation, rigidity, and insensibility.

It was the case of a young woman, 19 years of age, who accidently fell into a river, and was taken out in a state of suspended animation. Six hours elapsed before she recovered her senses, and she was unwell for several days afterwards. On the tenth day from the accident, she had a hysterical paroxysm, and lay for four hours in a state of stupor, out of which she came deprived of the power of speech and of hearing, as well as of taste and smell, and her mental faculties quite benumbed or paralysed, as she gave no indication that she recognised any of her friends about her. When I first saw her, about three weeks after the accident, her only medium of communication with the external world was through the special senses of sight and touch, for she could neither hear nor speak, smell nor taste. Her mental faculties appeared to be entirely suspended, there being, for some time, no evidence that any ideas were aroused by the sensations which she received, though consensual and respondent movements of various kinds were excited through them. This state of abnormal innervation continued for many months, though she ultimately recovered perfectly, and is now in the enjoyment of health. But during the whole period of its continuance, the fæces were never passed without the induction of a convulsive fit of rigidity and insensibility; the legs and arms becoming spasmodically convulsed and rigid, the head thrown backwards, and the eyelids closed. The same motor-phenomena, with insensibility, were manifested on other occasions. First, every night before she went to sleep, on the evidence of her mother, during the whole period that her mental faculties were in abeyance; secondly, three or four times in the course of every day, quite unconnected with any excitement; and, thirdly, under the influence of sudden emotional feelings, and especially of those arising from fear or alarm in association with water; the mere sight of water in motion, its being poured from one vessel to another, made her shudder and tremble; terror and fright being immediately followed by a fit of spasmodic agitation, rigidity, and insensibility.

I published a detailed account of this curious and interesting case in the *Lancet* for November 15th and 29th,

1846;* and in conclusion, I beg to recommend it to the thoughtful consideration of all who are interested in psychological inquiries. It is characterized by Dr. Carpenter in the last edition, just published, of his *Principles of Human Physiology*, "as the most remarkable example upon record, in illustration of the nature of a purely sensorial and instinctive, as distinguished from an intelligent existence, and the gradual nature of the transition from one to the other."† It attracted the notice of some of the most distinguished physiologists of the day when it was published, and was commented upon with great ability in the *British and Foreign Medical Review*, vol. xxiii, p. 229, *et seq.*, and there its psychological importance and bearings are well pointed out.

31, Norfolk Street, May 20th, 1855.

[At a time like the present, when the physiology of the nervous system is engrossing so much of the attention of the medical philosopher, the republication of Mr. Dunn's unique and highly interesting and instructive case in our columns will be a boon to our readers. It will appear in an early number of the JOURNAL.—EDITOR.]

CASE OF EXCISION OF THE ANKLE.

By CHARLES COTTON, M.D., F.R.C.S., Surgeon to the West Norfolk and Lynn Hospital.

SAMUEL GOLDSMITH, aged 26 years, by trade a shoemaker, was admitted an in-patient, with diseased ankle, on March 4th, 1854. He had enjoyed good health up to about two years ago, when, after a long walk, he felt pain in the right foot and ankle, which in four months assumed a constant gnawing character, especially at night, and altogether disabled him from using the limb. This was soon followed by swelling, and ultimately by abscess, which continued to discharge in spite of judicious surgical treatment.

On examination, the patient was observed to be of a spare habit; he had a pallid strumous aspect, and appeared to have had much suffering. The whole right limb was considerably wasted; and the ankle was much swollen, having an opening on the outer side, through which a probe easily entered the cavity of the joint. He proposed to submit himself to any kind of treatment, but on no account would he suffer amputation. He was at once ordered generous diet with porter, blue pill and opium at night, and mixture of iodide of potassium twice a day. The foot, after being secured in a quiet position, was directed to be frequently surrounded with hot moist flannels, encased in oil silk.

April 18th. His health was much restored; the swelling of the joint was greatly reduced; and the opening on the outer side was healed. The foot and ankle were bandaged after Scott's plan, leaving an outlet on the inner side for the discharge of matter from a lately formed opening; and the patient left the hospital "relieved".

Jan. 8th, 1855. He was this day readmitted. His health had much declined; he complained of sleeplessness and loss of appetite; and presented extreme pallor and emaciation. The ankle was greatly swollen, and puffy and deformed, having several large openings, particularly on the inner side, communicating with the tibio-tarsal joint, and giving vent to a profuse sanio-purulent secretion.

Jan. 10th. The patient threatening to leave the hospital rather than submit to amputation, sanction was given in consultation to the chance of excision.

OPERATION. On Jan. 17th, he was placed on the table, under the complete influence of chloroform. Dr. Cotton then proceeded with a strong bistoury to form a semilunar flap on the antero-lateral aspect of the inner ankle, embracing the malleolus, and terminating below and just behind it. This, on being dissected upwards, allowed of an easy examination of the open joint, when the extent of the disease of the osseous and other structures was found so formidable that amputation was suggested and urged as being the more judicious procedure. The operator, however, pledged to the patient, at once sawed off the internal malleolus, and proceeded, by means of the gouge and strong forceps, to remove in fragments the whole of the softened astragalus and calcaneum; and completed the operation by boldly gouging out the articular end of the tibia, together with the softened and carious surfaces of the tarsal bones, leaving the fibular malleolus after treating it in a similar manner. The cavity —a frightful one—was then partially filled with lint; and the flap was replaced and connected, except at its most depending part, by sutures. An unimportant hæmorrhage only attended the operation. On removing the patient to bed, the limb was secured to a wooden foot splint, and placed on its outer side; and thirty drops of sedative tincture were given.

Jan. 18th. He had passed a good night, and had no pain. The flap, formed of ulcerated integument, was cold and blue-looking, and threatened to slough. Full diet and porter, and an anodyne at night, were ordered.

Jan. 20th. Free suppuration had commenced, permitting of an easy removal of the lint. The flap had partially sloughed, exposing the joint cavity, which contained healthy looking pus, with several loose portions of bony *débris*. A M'Intyre splint was substituted, and the whole limb was inclined inwards, to facilitate the escape of matter.

Jan. 26th. He was ordered to take an acidulated quinine mixture. The wound was healthy, and had numerous granulations sprouting from the bottom. The foot was adjusted to the splint, and a bandage applied, leaving an outlet to be dressed daily with water dressing.

Feb. 2nd. The patient was looking better, and gaining flesh; the wound had closed up considerably by granulations; and the discharge was less abundant. The case on the whole progressed very favourably.

Feb. 15th. The foot was placed on another splint; the patient raised the limb himself, without any support to the foot.

Feb. 28th. The contour of the foot and ankle were in every way improved. The wound was filled up with granulations; and there existed a considerable amount of firmness between the foot and leg; so that the patient was enabled to move the limb freely without support.

March 15th. The patient had sat up frequently in bed. Sand bags had been employed several days to steady the joint, in lieu of the splint. He was allowed, at his request, to leave his bed.

April 28th. He was much benefited in health, and had regained flesh. A strumous, ulcerating, discharging sore remained at the seat of operation. The patient was much pleased with the altered appearance of the foot, which he could flex and place on the ground. He was made an out-patient.

May 22nd. He presented himself at the hospital, when he was reported by Mr. Coulcher, the house-surgeon, as able to plant the foot on the ground, and to flex considerably the ankle. The health had much improved, and he was in confident hope of one day regaining the use of his limb. An open ulcer continued to discharge at the inner ankle.

REMARKS. The operation of excision in this instance was not undertaken at the entreaty of the patient, or out of condescension on the part of the surgeon, and was not, therefore, one *de complaisance;* but was rendered imperative by the desperate condition of the patient, who having determinedly settled the question of amputation, was at length, under the assurance that the foot should be, if possible, spared, prevailed upon to submit to the cutting out of the diseased bones, as his only chance of life. The particulars of the case report no surgical novelty; but *the result*—restored health, and at least a painless well-shapen

* Case of Suspension of the Mental Faculties, Powers of Speech, and Special Senses, with the exception of Sight and Touch, occurring in a young woman, and continuing for many months, in consequence of her having fallen into a river, and been nearly drowned. By Robert Dunn, Esq., Surgeon. (Vide Lancet for 1845, vol. ii, pp. 536-588.)

† Vide Principles of Human Physiology, p. 668. By Dr. W. B. Carpenter, M.D., F.R.S., F.C.S. Fifth edition. Churchill: 1855,