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ENDEMIC DEGENERATION.

BY

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IN August, 1860, I was requested to visit and examine, professionally and not officially, a family which shall be described in its entirety, as it had been, as well as it then was.

I. A female; hydrocephalic. Head covered with a crust. A dwarf; an idiot. Suffered from cephalalgia and became blind. Died when twenty-one.

II. A male; a strong, able-bodied, sensible man, who assists his parents as a fisher.

III. A female; a weakly child. Died when two years old.

IV. Donald, æt. 22; height 4 ft. 11½ in. Looks like a boy of twelve years old. Head large; brows beetling; circumference of head above ears, 23 in.; measurement from nose to occipital protuberance, 15½ in.; from ear to ear, 14½ in.; ear to occipital protuberance, 6 in.; nose to ear, 5½ in.; from head of humerus to condyles, 10 in.; from olecranon to carpus, 9½ in.; from head of femur to condyles, 16 in.; from condyles to tarsus, 12½ in. Position of fingers natural; spine straight; teeth regular; palate normal; colour of skin dark, or coppery; eyes dark; hair black and curled; nose flattened; nostrils distended; lips tumid; urine albuminous; fæces clay-coloured. He took a meal in the presence of the reporter without any indication of voracity. It consisted of a very small quantity of fish and milk. He did not use salt, and rarely does. Common sensibility as tested by pinching, pricking, heat, appeared to be natural. He presents a heavy, dogged aspect, but his features are not repulsive. He is timid, shy. He can walk, wash, and dress himself; works a little, but is feeble and slow. Is intrusted with the charge of his brother and sister during the absence of their mother. Accompanies his father in a boat, but cannot row

nor fish. He cannot herd a cow, nor hoe potatoes. He might prepare potatoes, but could not aspire to porridge. Can sweep the floor and kindle fire, and would extinguish it in case of danger. Never wanders. Requires guidance in all his acts. Speaks indistinctly, and almost inaudibly. Was at school, and can read a little. Goes to church, and has some rudimentary notions of religion, but could not be admitted to communion. He had the diseases of childhood.

V. A male. Died in twelve hours after birth.

VI. Roderick, æt. 19; height, 3 ft. 6 in. Head hydrocephalic, irregular in shape; circumference above ears, $22\frac{1}{2}$ in.; measurement, from nose to occipital protuberance, $13\frac{1}{2}$ in.; from ear to ear, 13 in.; from nose to ear $5\frac{1}{2}$ in.; from ear to occipital protuberance, $5\frac{1}{4}$ in.; from head of humerus to condyles, 8 in.; from olecranon to carpus, 7 in.; from head of femur to condyles, 10 in.; from condyles to tarsus, $9\frac{1}{4}$ in. Fingers flexed on palm; slight curvature of spine; teeth irregular, never changed; palate normal; ears small, unchiselled; enormous distance between the eyes; nose rudimentary; features flat, puffy; colour of skin, bluish-brown; abdomen tumid, has the aspect of anasarca and ascites; eyes and hair dark; urine healthy; fæces clay-coloured. He had dinner during the inspection, of which he partook heartily, but seemed to masticate imperfectly and to swallow with difficulty. He has an aversion to potatoes, and seldom takes salt. When pinched, he does not withdraw the part; when pricked with a needle in various parts, he seemed to suffer little pain; but he recoiled from the application of a burning peat. His expression is repulsive—Calmuckian. He walked when four years old, but does so slowly and laboriously. Has never been beyond the door of cottage. Sits constantly upon a block of wood, gazing on fire, or where the fire usually is; would not move if starving, nor if cottage were in flames. It is inferred that he recognises the heat of fire when placed close to it, but not as distinguished from cold. Does not know night from day. It is supposed that he recognises his parents, but this is very doubtful. Knows nothing, can do nothing. Is easily frightened. Is described as "vicious," as refusing food, as screaming, and as being disposed to strike those around. Is not punished except by exciting his fears, and regarded by his parents as insane. Is of dirty habits. He cannot articulate, but his mother is of opinion that sounds or looks are exchanged with his sister Christian, which enable them to understand each other. Except pertussis, had no disease of infancy. The scalp is covered, to the extent of six inches in length, five inches in breadth, and a quarter of an inch in depth, with a dry, hard, dark-coloured, almost black crust, resembling peat or baked earth, which crumbles down when touched. It is never moist, has never exfoliated, and cannot be removed. It appeared when Roderick was seven years old, and has gradually extended.



VII. Christian, æt. 16 ; height, 3 ft. 2 in. Head large ; hydrocephalic ; circumference above ears, 21 in. ; measurement from nose to occipital protuberance, $13\frac{1}{2}$ in. ; from ear to ear, $12\frac{1}{2}$ in. ; from nose to ear, $4\frac{3}{4}$ in. ; from ear to occipital protuberance, 5 in. ; from head of humerus to condyles, 6 in. ; from condyles to carpus, $5\frac{1}{2}$ in. ; from head of femur to condyles, $8\frac{1}{2}$ in. ; from condyles to tarsus, 8 in. Fingers flexed ; slight curvature of spine ; teeth irregular, never shed ; palate conical ; features and proportions pleasing ; skin pallid or bluish ; abdomen tumid ; eyes and hair dark ; urine natural ; fæces contain more colouring matter than those of other members of family. Has never menstruated. Has an aversion to potatoes, and never takes salt. Insensible to pricking, pinching, &c. Does not know heat from cold, but is supposed to distinguish between night and day. Walked when three years old, but does so slowly and laboriously. Stands long in one position. Has never been beyond door. Sits constantly upon a stone near to fire. Is supposed to know her parents. Has no religious impressions. Is believed to articulate a few words, and to understand simple things. Could not be put to school. Does not engage in play, nor notices the gambols of a cat. Can do nothing. Would not extinguish fire. Good natured. Has had none of the diseases of infancy, save pertussis. The vertex of the head is covered, to the extent of eight inches by six, with a crust of less thickness, but in all other respects resembling that noticed in Roderick. No other part of the body is affected.

VIII. A male ; stillborn.

IX. Margaret, æt. 11 ; about 2 ft. 6 in. in height. Hydrocephalic head, irregular in shape ; circumference above ears, $20\frac{1}{2}$ in. : measurement from nose to occipital protuberance, $13\frac{1}{2}$ in. ; from ear to ear, 11 in. ; from nose to ear, $4\frac{3}{4}$ in. ; from ear to occipital protuberance, 5 in. ; from head of humerus to condyles, $5\frac{1}{4}$ in. ; from condyles to carpus, $4\frac{1}{2}$ in. ; from head of femur to condyles, 7 in. ; from condyles to tarsus, 6 in. Spine normal ; teeth irregular, small, never changed ; palate conical ; great width between eyes ; nostrils distended ; aspect batrachian ; skin very dark coloured ; eyes grey ; hair black. Fed by her mother. Dejections involuntary. Sensibility very deficient. Can be made to stand, but not to walk. Is parasitic ; when not in her mother's arms, is on the floor, prone. Does not know heat from cold, day from night. Sucked, but cannot take food unless introduced into her mouth. Is supposed to know her parents. Smiles. Does not engage in play. Is believed to suffer from headache, as she leans her head to a side. Cannot speak. Has had hooping-cough, but no other disease of infancy. The hard crust on the scalp has commenced, and is spreading.

These children are the progeny of parents still alive, and apparently healthy ; except that the mother, otherwise a comely woman, has

opacity of the cornea, which may have succeeded strumous ophthalmia: and thus there may be a key suggested to the disease and decrepitude described. The friends of the family are reported to have belonged to the district which they now inhabit, although the name would indicate a distant part of the Highlands. A grandfather was a man of short stature, and odd in gait and dress. No cause can be assigned for the affliction with which they are visited, nor have the parents ever seen an appearance of the scalp similar to that in their children, either in relatives or others. The father is a fisher and crofter. He has been a tenant of six acres for forty years, but the rent is not paid up. He has three cows and one horse, but no boat. Their house having fallen, or been taken down preparatory to repair, they are now living in the barn, which is more than usually bare and wretched. The cottage is near to the shore, in a low and perhaps marshy hollow. Like many others around, differing neither in situation nor structure, it is surrounded by forests of weeds, tussilago, burdock, and nettles, which overshadow the tenement, block up the window, and are so luxuriant and gigantic as to suggest the notion of cultivation, especially as there are no trees, no ferns, and no bush, except the creeping willow, in the parish. The parents were born and have lived where they now are. They are in great poverty, have received charity from the noble proprietor, and have applied for parochial aid. Potatoes and fish constitute nearly the sole food of the family. Animal food they never taste, except when a badly nourished or diseased cow or sheep may die. As three of the idiots have a dislike to potatoes, the mother states that she gives them biscuits instead. Oatmeal porridge is nominally the breakfast and supper, but the quantity is suspected to be small. Milk will be supplied by the cows. The water used is not drunk by any other person. The well is near the shore, and at high water it is brackish. The idiots consume very little liquid of any kind.

When these facts are generalised there is presented a society of nine persons, descended from an apparently healthy stock; of whom two were not viable, one died in infancy, and one when twenty-one years old; of whom four are hydrocephalic, four are dwarfs, one diminutive; all, save one, of small size, feeble and puny; four are distorted and diseased, five are idiots, four had the head partially covered with a cork-like substance; four cannot speak, two cannot walk, two walk slowly and laboriously, four cannot wash nor dress themselves, four would not escape from fire, and of four the senses are either hebetate or rudimentary, or limited in range; and one is healthy, robust and intelligent, and has arrived at maturity; and all, with this one exception, are so deformed, so hideous in countenance and aspect, as to suggest the last stage of some frightful plague, the type of the lower animals, or that they are the last members of a distinct and degenerated race of mankind. And that

this last is not altogether a fanciful conjecture may be gathered from the impotency, or at least the unproductive unions of beings so constituted, even when they were well formed. "Autrefois les rois de France avaient leurs bouffons et leurs nains. Catherine de Medici en maria plusieurs, mais sans resultat de progéniture."*

This family reside in the 'Wild Tirie,' or land of Iona, an island about eighteen miles from the nearest point of that of Mull, and at a much greater distance from the main land. It contains twenty-seven square miles, much of which is waste land, much used for pasture, and a small portion cultivated for potatoes and black oats. It has a population of 5700 fishers and farm-labourers, "who," says the Rev. N. McLean, "until of late years, when poverty laid its iron hand upon them, were a cheerful, happy, and contented people."† Notwithstanding indigence, the attachment to the flat, sterile, inhospitable soil is such that the inhabitants are redundant. Parish registers cease about 1775; a golden tore, one or more Pictish forts, a coin of Malcolm Canmore's, are the sum of the early chronicles of the island. Of the state of the inhabitants, who wore the ring of the patriot or pirate who built or battered the tower, or the ichthyophage who exchanged seith for the current coin of the realm, these, like more pretentious records, say nothing. A giant's grave, a monolith, a cross without a legend, may be chapters in a prehistoric period, when McNiell massacred McLeod, and when McLeod exacted bloody retribution from his conqueror. These times are shadowed forth by tradition, or are rather sharply sketched out in such suggestive names as the Bay of Battles, the Pit of Havock or destruction. Epochs there have been. The settlement of a large number of disbanded fencibles, through the generosity of a former proprietor, must have brought new blood, and brain, and habits of thought; and the addition of chimneys to their dwellings by the present proprietor, and the prohibition of the importation and sale of spirits, must have operated favorably upon public health. But the probability is, that, the world forgetting by the world forgot, these islanders lived in similarly humble dwellings, upon similarly frugal fare, and married and intermarried, till all men became more than metaphorically brothers; and died, for, although phthisis be rare, there was struma and sibbens, and even typhus fever to destroy them—as they do their present descendants.

The period during which these facts were collected was protracted as long as possible; but was much too brief for the purpose in view, or for exhausting the information, perhaps accessible, had the inquirer spoken the language of the M's, or had his interpreters been familiar with the terms employed. Since that time, a well-

* 'Histoire des Metamorphoses Humaines, &c.,' par A. Debay, Paris, 1845, p. 171.

† 'Statistical Account of Scotland,' Argyllshire, 1843, p. 209.

qualified medical man has gone to practise in the island, who speaks Gaelic; and has verified and extended the original observations. Dr. Buchanan* has promised further and more minute investigation into the bodily condition and structure of the M's, to procure photographs, and to analyse the water used; and to the interruption of postal communication alone is to be attributed the absence of further details from these pages.

The occurrence of diseases which are confined to a particular community or locality, or are attributable to the habits and modes of life of a particular race or district, such as the trismus nascentium, the Forfarshire ague, cretinism, pellagra, is intimately connected with the consideration of those causes which determine the progress or deterioration of the human race, and with an estimate of the amount of control which may be exercised, through external circumstances, upon the development of the highest intelligence and the highest qualities of our nature. It is worthy of remark, that all these affections have a claim to be classed with the neuroses. It is not that mental phenomena enter into the group of symptoms by which the disease is characterised, for every malady has its psychical aspect; but that, either in the relation of cause and effect, or as contemporaneous or co-ordinate conditions, bodily and psychical derangement contribute equally, and go to constitute the disease what it is. It is not that these conditions can be traced with greater or less precision, to an obvious external cause or origin, that they appeal to philosophy; it is because they have a significance in palpable, material processes, by which the mind is broken up, perverted, dwarfed. In the relation between a cereal and the nervous pulp may be detected the genesis of unhealthy thought; and to extend the inquiry to the etiology of mental disease, generally, may involve the whole problem of the destinies of the human race.

It is not necessary in the case of the M's to connect the extraordinary state of the scalp with the mental decrepitude. It is more consistent with experience to regard all the features described as symptoms of a common disease, or degeneration, or signs of a vitiated nutrition. The crusts connect the condition with the ichthyosis cornea, which is invariably the result of filthy habits, or impoverishment of the system, and with the cespitosa calyptræformis in which, according to Alibert, if the excrementitious matter be not thrown out, epilepsy and mania ensue. The cachectic state of three of the sufferers somewhat resembles that

* Among the desiderata to which this gentleman's attention was directed was to determine whether the "meal" upon which the M's chiefly subsist did not consist partly of what is called "Indian meal." This flour is issued to the paupers in an adjacent parish, is made from the Zea Mais, and, if used by this family, would constitute an unexpected, but, perhaps, deceptive link between them and the pellagrins afterwards alluded to.

described by M. Billod* as characterising lunatics who are affected with the modification of pellagra recently discovered in some of the large asylums in France, while the combination of the affection of the skin and the cachexia with the grave lesions of the nervous centres, suggests a strong similarity with the third stage of the pellagra of the north of Italy, which is delineated in Dr. Holland's unrivalled monograph,† as presenting scorbutic cachexia, impairment of voluntary functions, pains in limbs, diarrhœa, dropsical effusions, insanity, &c. The identification of these affections is not proposed. It is more instructive to contrast the points at which they recede from each other, and to discover the differences which may fairly be attributed to climate, special hereditary tendencies of race, and surrounding circumstances, should such exist. It is further a valuable contribution to pathology, to demonstrate another instance in which causes, rather than a cause, lead to similar mental conditions.

That disease which is believed to have been new to Europe in the eighteenth century, which is observed in greatest intensity in Lombardy, Venice, and Piedmont, but which has appeared sporadically, or in a modified form, in other countries, cases having been met with at St. Jean de Maurice, Vienna, and in the Hospital de St Louis, Paris,‡ has been represented as consisting of three years, there being annual exacerbations in spring, or stages.

I. The first is the following succession of symptoms—languor, debility, cachexia, red blotches, which ultimately become dusky or black, appear on hands, feet, and parts exposed to the sun. Tubercles form on the inflamed surface; the skin is dry, rough, rhagadic; desquamation leaves a shining surface. There are vague and irregular pains of the trunk and limbs, cephalalgia, vertigo, depression of spirits.

II. In the following spring, the skin appears callous, furrowed, rhagades take place at articulations, like those in ichthyosis, there are great debility and emaciation, deformity of nails, tendency to cramp, spasmodic affections; the patient is forced precipitately forwards in a straight line, or is fixed to one spot—confirmed melancholia. M. Bonacossa has recorded the frequency of hemeralopia.

III. Scorbutus, cachexia, fætor of halitus and perspiration, diarrhœa, dropsical effusions, pain in limbs, vertigo, vacillation, tinnitus aurium, double vision, epilepsy, insanity marked by mania, melancholia, dementia, and suicide, so frequently by drowning that Strambio gave the malady the cognomen of hydromania, and conceived that the choice of the mode of destruction was induced by the burning sensation to which the patients were subject. This

* 'De la Pellagra,' p. 16.

† 'Med. and Chir. Soc.,' vol. viii.

‡ 'Ann. Medico-Psyc.,' vi, 318.

notion is not borne out by subsequent observation. The celebrated M. Lovat, who attempted to destroy himself by crucifixion, was a pellagrin; and M. Billod* mentions that of 200 individuals affected with the disease at Mugello, only two attempted suicide, and one of these was by precipitation. The affection is confined almost exclusively to classes engaged in agriculture, attacking preferably those who work laboriously in the sun, who inhabit wretched houses located in flat, flooded plains, are plunged in great misery, are insufficiently clothed, and depend for nourishment almost exclusively upon maize, millet, rice, vegetables, and bad, unfermented bread without salt, who have no wine, and drink stagnant water. It attacks infants at the breast, and is hereditary. The ravages and progress of pellagra may be estimated from the fact, that of 500 patients in the lunatic asylum at Milan, one third were pellagrins; that when Strambio wrote one of every twenty, when Holland one of every five or six of the population presented symptoms of the disease. How little the nosological character of the eruption is pathognomic may be inferred from the statement that the skin sometimes presented the appearance of erysipelas, of lepra, of elephantiasis, of ichthyosis. Although it be probable that some injurious effect may be communicated to the mind in every case where the disease is established, it is not invariably accompanied by, nor does it terminate in, alienation; the complications being as often dropsies, chorea, epilepsy; and these constitute the foundation for the classification which obtains in the Milanese hospitals, and contains the affections designated *phthisis pellagrina* and *atrophia pellagrina*. Amongst these co-ordinate states Baillarger detected, or supposed that he detected, general paralysis, and recorded his experience. A most animated and protracted controversy ensued, in which Verga affirmed that he had never seen the complication, and that general paralysis was not met with in Italy, either alone or associated with pellagra. His antagonist quotes Italian physicians, to show that general paralysis existed at Turin; and the case-books of the hospitals recording, but not naming, general paralysis free from pellagra; and apparently establishes the propositions that ambitious ideas and optimism may spring from maize poisoning as well as alcohol poisoning, from indigence as well as from luxury, and that they may supplant the depression, despair, and pessimism of this cachexia. In the *spiloplaxia scorbutica*, the *mal de rosa* of the Asturias, which has been regarded by a nosologist as a species of pellagra—red, livid spots appear round the neck and wrists; these are succeeded by dry, circular, yellow or ash-coloured crusts, surrounded by enormous pustules, which become black, and after some months fall off; these crusts are symmetrical. Associated with this condition of the skin are a sensation of burning heat, a loss of equilibrium, staggering, incessant

* 'De la Pellagra,' p. 18.

motion, profound melancholy, and fear. (Alibert 'Monographie des Dermatoses,' p. 502.)

In the pellagra of the Landes, a red, papular blush, resembling scarlatina, attended with heat and itching, affects the feet and hands, which is increased on exposure to the sun. The cracked and crustaceous epidermis falls off, leaving a rough, ragged surface. In three or four years the intestinal mucous membrane becomes implicated, the lips are red and sanguinolent; there is pain, heat, vomiting, ptyalism, fœtor of breath, difficulty in deglutition, a sense of strangulation, and diarrhœa. In some cases the hair is easily broken and falls off. Towards the termination of the attack, which is generally fatal, there supervene vigilance, tremors, staggering, tendency to fall, loss of equilibrium, fatuity, fury, profound melancholy, and "une sorte d'idiotisme."* It attacks adults of both sexes, many of whom present a copper colour, inhabiting the littoral, low-lying, and sandy districts of the Gironde; and the poor, of dirty habits, subsisting upon inferior, coarse, and insufficient food, such as salt-fish, shell-fish, paste made of millet or maize, and who drink water of bad quality, which cannot be used until it is boiled, and many of whom wear untanned and unwashed skins as clothes. Persons drinking wine are said to be exempt.

The variety of pellagra described by M. Billod as peculiar to the insane, or as a special cachexia and peculiar to the insane,† is marked by emaciation, debility, tendency to diarrhœa, dryness of tongue, cardialgia, and subsequently and on exposure an erythema of different hues, varying from red to blackish, appears on the back of the hands, arms, and ultimately on the feet and neck, and exfoliates; concomitantly there is an earthy or bronzed appearance of the skin, which is dry and rough, and hypertrophy and distortion of the nails. Sometimes the eruptions are vesicular, papular, squamous, or furunculoid. Scorbutic patches and œdema of the extremities are observed. Curvature of the spine existed in certain individuals. Remissions take place during winter. Of sixty patients in which this combination of symptoms was seen, eighteen laboured under melancholia with stupor, thirty-two under melancholia and fatuity, five under chronic mania, and seven under idiocy.‡ Cases have occurred in the asylums of Mareville, Fains, Auxerre, Angers, &c. The use of wine is supposed to be instrumental in arresting the course of the malady.

Alibert compares the callosities in the ichthyosis cornea to the skin of the elephant, to the legs of the rhinoceros, to

* 'Hameau,' p. 12.—'Lalesque,' p. 56.—'Documents pour servir à l'Etude de la Pellagra des Landes, &c.,' Paris et Londres.

† Tom. v, 'Ann. Medico-Psych.,' April, 1859.—'Archives Générales de Médecine,' 1860.—M. Teilleux, D'Auch 'Ann. Med.-Psych.,' April, 1860.

‡ Billod, op. cit., p. 14.

warts, to the bark of an old tree. He had never met with it excepting in beggars who had long suffered from insufficient and improper nourishment. When occurring in infants a few weeks old, they were the offspring of the poor and wretched. He adds that people inhabiting the sea-shore, subsisting upon putrid food, and who drink stagnant water, are especially subject to ichthyosis.* Good defines the affection: "Incrustation forming a rigid, horny, imbricated rind, hue brown or yellow, subjacent muscles inflexible, sometimes covering the whole body, including the face and tongue;"† and, in illustration, adduces a case from the 'Philosophical Transactions,' No 424, where the whole body, with the exception of the head, face, palms of hands, and soles of feet, was affected. "The entire skin formed a dusky, ragged, thick case, which did not bleed when cut or scarified, was callous and insensible, and was shed annually, like the crust of a lobster, in autumn, and acquired the thickness of three fourths of an inch. This man married and had a family of six children, all of whom possessed the same ragged covering as himself."

In cretinism the thyroid gland is generally of large size, or the neck, head, and hands are gross, or swollen at birth. The victims are hydrocephalic, or the head is of small size and irregular shape, the occipital protuberance being very salient. The first act of respiration is excited with difficulty; they do not suck well, and sleep constantly; when other children articulate words, they emit vowels. At ten or twelve years old, the food must still be placed within the mouth. They are stupid, mute, and never smile nor play. Their legs are of large size, but they walk badly and stagger. Their movements are slow; they go straight forward, avoid no obstacles, reel and tremble. They are from four to five feet in height. The hands and arms are long, deformed, pendant, or carried towards the head. The visage is flat and square; the eyes small and deep-set, or projecting, the gaze fixed or wandering. The hue of the skin varies from a dead-white or olive to chesnut-brown. They are said to frequent the fire, the rays of the sun, or the spot where they receive food, yet to labour under anæsthesia, to disregard cold, heat, vermin, even blows; to see and not to perceive, to have obtuse senses of taste and smell. There is great development of the organs of generation. They are indifferent to their parents, are inattentive to the calls of nature, not subject to ordinary diseases, and may die of hunger, if not attended to. They are very subject to lepra and other diseases of the skin. "Quant aux maladies de la peau elles accompagnent dans beacoup de vallées le goître et le cretinisme parceque elles sont nourries et entretenues par la même cause."‡

* 'Monographie des Dermatoses,' 1832, pp. 724—773.

† 'Study of Medicine,' vol. v, p. 608.

‡ 'Fodere,' p. 121, § 60, 61, 62, 63, 64, 65, 66, 67.

It is not the object in view to determine whether these manifestations of morbid action are identical, or even allied; nor whether the pellagra of Lombardy be the result of the exclusive use of maize and corrigible by a proper preparation or torrification of the grain, or the cultivation of different and unvitiated species, which mature early; and preventible by an edict against intermarriage; nor whether the pellagra of the Gironde depends upon dirty sheep's clothing; nor whether that of the French asylums be special or attributable to semi-starvation, to alimentation disproportioned to the wants of the system under depressing emotions, or to simple innervation, or be the last of that series of blood changes which eventuate in lypemania and dementia. The grouping together of such conditions as were connected by analogy, or by the contemporaneous appearance of marked morbid appearances on the surface, and grave impairment of reason, has answered the purpose proposed.

It may be necessary to direct attention to the circumstance that, in the affections described by Holland and Hameau, the alienation succeeds the constitutional changes—cachexia and disease of the skin; whereas in that discovered by Billod, the affection of the skin and cachexia follow, and generally at an interval of considerable duration, the invasion of derangement. The condition of the M's was obviously congenital. In none of the other forms does there appear to have been an approach to this, except where infants are said to have been attacked with pellagra during nursing. This proclivity to the skin disease may have been born with them; but, in general, the hereditary taint amounts to nothing more than a susceptibility to become affected at a certain age and under certain circumstances. There can be no doubt as to the transmission of the ichthyosis cornea. While one author, Lalensque, reports fragility of bone in the pellagra of the Landes, and another, Billod, spinal distortion in the species peculiar to lunatics; there is here a most striking departure from the normal amount, proportion, and symmetry of the bony deposit. The muscular system in the M's is incapable of being roused to activity or trained to co-ordination; and the dwarfs are rooted to their stone, or stagger along the floor, or creep, quadrupedally, to the door, but can scarcely perform a single spontaneous act; the pellagrins, on the other hand, acquire vigour and precision of movement, and are, for years, useful, self-supporting husbandmen; but lose these powers, roll like drunkards, or rush recklessly forwards like locomotives, in the last stage of their progress. In all the descriptions given, whether the morbid state of the skin be defined impetiginous, furnunculoid, or even coriaceous, it affects chiefly the hands and feet, but ultimately all parts of the body, except the head; it is periodic, it is fugacious. A peculiar condition of the hair was seen in one case of the pellagra of the Landes; but in these idiots the hair is healthy; nor is there any

similarity to the *Trichosis plica*, with which insanity is sometimes associated, and the crust or bark on the head, which is dry, something like hard peat, sounds like wood when struck, is permanent. Although cachectic in aspect, this family is not, like the majority of the pellagrins, suffering under gastro-enteritis, nor any other degeneration of the mucous membrane. Their indifference to food is rather the absence of the psychical appetite than the aversion of dyspepsia; and they have neither alteration in the structure of the mouth nor tongue, nor hæmorrhage from the intestinal surface. In the indigenous group non-development, in the foreign nations perversion and extinction of the mental powers, is the most striking pathognomic indication.

There are, however, some common features in the history and condition of the various parties involved. There is anæsthesia even of the special senses; there is a dark, or blue, or bronzed discoloration of the unaffected skin; there is a composite morbid state, comprehending phenomena, differing, it is true, in their relations, of disease of the skin, organs of assimilation, bones, muscular and nervous systems. The pellagrins of Milan do not get, these idiots refuse, salt. The M's live in a sandy hollow, almost below the level of the sea; their dwelling is a hovel, in which the great object of Celtic architecture—warmth—is scarcely attainable; their nourishment is meagre and monotonous; their drink brackish water. These circumstances, however, do not differ materially from those in which a considerable number of their fellow-islanders are placed. They are rich in having three cows; they are poor from having in their bosom four consumers who are not producers; they tremble upon the verge of pauperism, but hundreds have crossed the boundary; and yet, although there are many, a disproportionate number of cases of mental disease in the island; the lunatics, if deformed, are not of diminutive stature; and though there is another family of dwarfs, they are not idiots.

To the question, are these creatures pellagrins, idiots, or cretins? it may be answered, that many of the indications connect them with the latter. Cretinism may exist without bronchocele, but never without deformity; and the aspect, the figure, the gait, the defective taste, the mutism the mental phenomena, recall very vividly the lowest type of cretins met with in the Valais. As yet, however, cretinism has never been met with upon the sea-shore. Individuals suffering from rachitis, an element in cretinism, are often seen closely resembling the M's in personal appearance, even to the altered tint, the "sulphur-blue" of the skin. Precocity is, however, generally, but not so frequently as is popularly believed, the attribute of the ricketty dwarf. It bears upon one side of the question now discussed, that cretinism, as well as pellagra, are conceived to be of comparatively modern origin; whether the result of new modes of

life, of departure from the simplicity of primitive usages, or of the cumulative effect of ages of barbarism, oppression, toil, poverty, etiolation, it may be, were difficult to say.

Many stunted and grotesque individuals have been recently seen and examined in relation to this subject. The majority were positively idiotic, or of dull, weak intellect and blunted sensibility. In several, even when they were not of bilious temperament, the colour differed much from that of health. Yellow was the predominating tinge; but in one, four feet three inches and a half in height, with square, flat face, batrachian features, and who vacillated, spoke with great difficulty, but who was not imbecile, it was dusky, and in some spots so dark that she is generally supposed to be a mulatto.* She is a cretin in all but mind. The stationary population of poor-houses afford many examples of this class.

These cases, and others of which I possess the history, appear to justify the supposition that the morbid conditions, of which brief sketches have been introduced, may run into, or be connected with each other, by intermediate modifications, partaking of the characteristics of the different species. For example, in the M's there are the large, irregular head, the tumid belly, the feebleness of the extremities, the livid visage, and many of the mental manifestations of cretinism, but no enlargement of the thyroid gland; there is great distortion, as in rickets, but conjoined with idiocy; there is disease of the skin, as in pellagra and ichthyosis, but it is permanent and congenital; and there is cachexia, but unattended by gastro-enteritis.

There are some interesting psychical phenomena manifested by the group. There is the entire isolation of two, the mute, motionless, passive solitude, which has no relations, no past, no future; yet, as I have repeatedly observed in similar groups, and especially in a family of seven imbeciles, five brothers and two sisters, recently examined, while they have little or no articulate language, and use no signs, or rarely attempt intercourse with the other members of the household, they are believed to have occasional, though rare, communion with each other. In general the mode is a jargon, here it must be by looks. Mentally they must live in the perpetual monotony of two or three impressions; the range of their "*not me*" must, at all events, be very limited. They do not know light from darkness, heat from cold; whether a psychical peculiarity, or connected with the supply of chlorides from the air or their food, they either do not take salt, or take it in small quantities, and only, it would appear, because it is presented to them; like certain classes of idiots, they appear to be exempt from the majority of the exanthe-

* Vide a very interesting communication, by my friend Dr. Laycock, on Cutaneous Discoloration, in the 'Brit. and For. Medico-Chirurgical Review,' No. 53, January, 1861.

mata and of the diseases of childhood ; as in others, the teeth have never been shed ; they are grave, heavy, stolid, stationary ; they never engage in play ; their muscular sense is scarcely exercised, and they must depend upon the cognitions of animal life for the pains or pleasures of living ; but, as in some instances of mental concentration, the cœnæsthesia may be developed in an inverse proportion to the non-development of intelligence and emotion. They have no affections nor dislikes. They are said to recognise their parents ; and Margaret hangs upon her mother, but she hangs as an apple hangs from its parent branch ; the insensibility or impenetrability of the surface, the hebetude of the senses, lead to or correspond with torpor of the instincts ; they are not disturbed by strangers, or they do not notice them ; they pursue their automatic course, or rather they remain unimpressed, and perhaps unimpressible, as the blocks upon which they sit. The senses are said to be normal ; but they elicit no desire, no thought ; the only indication of mentalisation is a smile and a depression of the head ; but these are persistent and non-significant. Yet on such contracted and impotent miniature minds, such dwarfed and deformed natures, there may be traced out difference of disposition, shadowing forth the docility of woman, the passions of the man, ~~for~~ a fury so blind and causeless, as to justify the suspicion that madness has been engrafted upon idiocy, or that all is due to demoniacal possession ; but though burdened and bowed down by their childlike race, and feeling alive to the separate world in which they live, the parents do not realise the nature of their affliction.

Wordsworth is said to have been without the sense of smell, or knowing only one doubtful afflatus from a bed of gillyflowers during a whole lifetime of glorious imaginings ; and Miss Martineau is ignorant of the pleasures of roast mutton. Nay, it is averred that every seventeenth man lacks what may be called the eighth part of a sensation, or a capability of seeing green ; and yet these shorn and mutilated intelligences are regarded as perfect, or entire and trustworthy ; and not in the ordinary concerns of life as differing from their fellow men, who have the full complement of smells, and tastes, and vision. It may be questioned, is a mind impaired by limitation ; is a deaf man less capable of judgment, not of sounds, but of other connate matters ; or is a man less responsible who has lost his right hand and its cunning, or whose leg is paralysed, because he is deprived of a vast series of tactile sensations by the one accident, or less assured of his equilibrium by the other ? When does a man in any sense, not by the laws of a realm, but by those of logic, become a cretin or cretinoid ? When Sir W. Hamilton calls upon us to analyse the phenomena of consciousness, and we examine whether the perception of a forest, where the leaves are thick as in Vallambrosa, be one generic perception, or a composite

of multitudinous perceptions, of which, as single perceptions, we had no knowledge, the imagination may well pause in wonder at the myriad states, and stages, and intensities of cognition which go to the entirety of one mind. Or, if we sweep over the impressions of a life, all the conceptions and memories into which they are resolved within us, and all the hopes and desires and volitions by which they react upon the world; or, if we analyse the acquisitions which constitute the working materials and polish of one lofty intellect, we might be enabled to measure the psychical distance between the extremities of the mental scale, between "the world of thought" of an ordinary capacity, and the experience of the human polypes which have been described.

It is a fair matter for inquiry, both whether a man's moral status would be affected by surplusage; if he hears a voice we cannot hear, if he is endowed with an additional sense, or with the modification of a sense, like that of the bloodhound or the pointer; or with the idiosyncrasies of the mediums of the spiritualists; and likewise as to what substratum remains subsequent to the subtraction, the annihilation, of given faculties or receptivities. Copious evidence exists as to the degenerations consequent upon brain changes, and as to the non-development of certain senses and capacities; but there is still wanting a philosophy of the constituents and of the laws, for such there appear to be, which regulate the morbid and idiotic mind.

This inquiry would be of some importance practically. It would be useful to determine in what cretinism consists; as it appears that while the impairment of mind is greater than in the majority of idiots, there is left a healthier residuum, or one more amenable to physical treatment and moral training. It would be well to determine whether these and similar cases, met with in Scotland, belong to this category, and are capable of being raised and received into the human family from the painful though picturesque degradation in which they are found; from their pit-like home in the sunshine world which they never saw, with a horizon of a few yards, far out among the surges of the Atlantic which they never heard, gazing eternally into the embers of a fire from which they could not escape; absorbed in the contemplation of their monoideism, scarcely touching the external; and where, should their parents leave them or die, they would sit and gaze and perish in the smoky twilight, beyond which they have scarcely ever ventured.

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