

especially the chin of the infant as it is being expelled into the world. There is often a difficulty and danger to the perinæum in certain cases, and far more so in my mind when unaided, in getting it safely clear of the chin when towards the sacrum; and no better method have I found than the above so as to prevent laceration from occurring. In the married and unmarried country females and out-of-door workers, consisting of those of stout make, and also of little stature, who bear children very frequently, this mode of giving support is undeniably of great advantage; but I make no exception, as I apply it in all my cases of head presentation. And I do think in regard to supporting the perinæum, that its advantages ought to be more generally appreciated, as in the rapid and violent expulsive pains, accompanied with large and hard or ossified head and rigid perinæum, vagina, and vulva, I am confident by keeping with the hand well applied the head of the foetus as often as possible back a little, instead of hastily delivering when pressing strongly on the perinæum, that I have saved several lying-in women from inevitable laceration; and such a procedure it is reasonable to suppose allows the perinæum, etc., to expand more gradually, and renders the risk referred to less to be apprehended in consequence, even when most likely to take place. But truly I have never found it to occur when such preventive practice has been followed.

Although it is said that no labours are so easy, or so soon recovered from as those of the wives of wandering mountaineers in barbarous countries, still their whole lives are so dissimilar to civilized life in this country, that little good seems derivable from a comparison of lying-in women under such different circumstances; and I do not think that the non-occurrence of rupture of the perinæum among the former should be an argument for our withholding support to the perinæum among our own patients.

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ARTICLE VIII.—*Some Observations on Scrofula on the North-East Coast of Scotland.* By D. CARMICHAEL, M.D., Buckie.

(*Read at the Meeting of the Banff, Murray, and Nairn Medical Association.*)

THE manners, customs, and mode of life of the fishing population being so distinct from those of other people, it might be expected that the progress of some diseases should show a corresponding difference. Those within my range of observation occupy the western portion of the seacoast of Banffshire,—a district which contains the most dense fishing population of any similar extent in Scotland,—and among these I have noticed an almost total absence of all the ordinary forms of scrofulous diseases. I am not, however, aware whether the same has been observed by the medical men in the coast-towns of Murray and Nairn.

Every medical man must have seen cases of injury and disease which in one individual are easily healed, while the same injuries in other individuals are slow and lingering in their progress, and perhaps will not heal at all. The latter individuals are usually scrofulous.

I do not intend to attempt to give a complete definition of scrofula, a disease which appears in so many different forms; but as it appears to me remarkable, that among the fishing portion of the population of the county of Banff, at least in the parish of Rathven, scrofula, in its usual forms, is almost if not entirely wanting, though common among the tradespeople and other persons that live among them,—it is my intention to make some general observations on what I consider may be the cause of scrofula in general, and of the remarkable difference in that respect between the fishing population and the other inhabitants of the same place.

And as there is no rule without exceptions, I intend to begin by recording a remarkable case of scrofula, or one at least with many of the usual characters of that disease, occurring in a young fisherwoman of Porteasay, now thirty years of age. The case is one of necrosis recurring during the last seventeen years, at six different times, on as many different portions of the body. It appears to me that this exceptional case, and the circumstances connected with it, such as the character of the residence, etc., will help, in no inconsiderable degree, to illustrate the causes of scrofula.

H. M'K. is a fisherwoman of Porteasay, now thirty years of age; when about thirteen years of age she received an injury of the left leg from a kick. It continued painful for years, and after a considerable time, a tumour appeared over the shin-bone, which ulcerated and extended formidably, without any appearance of healing. When about seventeen years of age, another tumour appeared on the right side, which also ulcerated. Some time after this she came under my charge; there was then caries of the bones both of the leg and face. After more than twelve months both sores were healed, after removal of large portions of bones of the leg, upper jaw, and cheek.

These sores had not been more than eighteen months whole when a tumour appeared on the right side of the skull. The tumour ulcerated, and left quite bare a large oval portion of the skull, upwards of three inches long by two and a-half wide. After a considerable time, the outer part of this bare portion of skull was removed by exfoliation and absorption, and left exposed a large portion of the dura mater, the bloodvessels of which were distinctly seen pulsating, large and tortuous. A central portion of bone remained, and continued firmly adhering to the parts below for some months, while a large portion of the dura mater, and its vessels which supply the brain with blood, were exposed all round. In this state of matters, the adherent portion of skull in the middle had the appearance of an island, with the dura mater exposed all round. This portion of bone at last dropped away, and after about sixteen

months from the first ulceration of the scalp, the whole healed up, and was covered over with a very thin covering of integuments, without the lost portion of the skull being restored. Some time after, a tumour appeared on the right side of the back, which ulcerated, discharging a large portion of rib. At another time a portion of the right humerus became diseased, and was removed by ulceration, exfoliation, and absorption. More lately, a considerable portion of the left thigh-bone went through the same process. The parts are all whole at present.

On all these occasions the general constitutional disturbance was moderate; the pain, during the wasting and removing of the bones, was severe, but local. The discharge from the ulcers was copious; the soft parts became converted into a soft fatty matter, which came away in portion with the sanies, in the manner usually seen in scrofulous sores. The most remarkable general symptom was debility, and great want of inclination for exertion. The appetite was in general moderate, the menses usually suppressed during the discharge of the ulcers.

One of the most noticeable facts in this case is the number of times that necrosis has attacked the various bones. It will be observed that at six different times, and in as many different portions of the body, has necrosis taken place, and considerable portions of the bones have been removed by the usual process of ulceration, absorption, and exfoliation. Another noticeable fact while the skull was affected, was the absence of cerebral disorder, not only when a large portion of the skull was in process of removal, but also when several square inches of the dura mater were bare, and the meningeal arteries of the brain were distinctly seen pulsating. In another particular this case differed from what is commonly seen in necrosis; in ordinary cases the old bone seldom comes away till after the new bone is at least partially formed; and as the new bone is generally larger than the old, when the cure is complete the parts are usually fuller than before. In this case, however, neither the bones nor soft parts have been reproduced, except in the most scanty manner.

The parts that were ulcerated are now small and wasted,—a considerable portion of the right upper-jaw and cheek-bones are wanting,—a large portion of the left tibia is gone, and what remains is covered only with a brown dry parchment-looking substance, that supplies the place of flesh and skin,—a large portion of the skull, about three inches by two and a-half, or about seven square inches, is entirely absent, the place being now covered over with a thin brown membranous expansion without hair, which is the only covering the brain has in that place. About two inches above the right elbow-joint, the humerus and soft parts are so defective that it looks as if the fore-arm would easily drop away from the upper part. The shoulder, space over ribs, the left thigh at the places that were diseased, are all very defective, both in bone and soft parts.

It is to be observed that among the fisher population of the parish of Rathven, scrofula in any form is very rare. The scrofulous ulcer, the chronic abscess, the chronic glandular tumour, and the swelling of the abdomen from disease of the mesenteric glands, called *tabes mesenterica*, are never met with among them. Chronic diseases of the joints, such as *morbus coxarius*, white-swelling of the knee and other joints, are extremely rare, if not entirely wanting among them. This is the more remarkable, as among all classes that live among them the above affections are not at all uncommon. Scrofula is common in all the country parts of the parish of Rathven, and also among the tradespeople and others living in the towns. All the above forms of it are also not uncommon among the families of sailors. Pulmonary consumption is occasionally met with among the fishers, but is not common, and the cases met with I do not consider scrofulous.

The case, however, of H. M'K. is undoubtedly one of scrofula, and has the ordinary distinguishing characters of that complaint, showing a very marked exception to the rule of the place. The patient being brought up in a very confined and damp house, very different from the houses of fishermen in general, is a circumstance that accounts, in a great measure, for this marked difference.

How are we to account for the marked exemption from scrofula of the fisher population in general, so different from what is seen in regard to the people they live among? Marrying near relations is supposed to be one cause of scrofula. If this were correct, as fishers generally marry among themselves, we might expect strumous complaints to be frequent among them, but the reverse is the case. Perhaps some will say that cod-liver and other fish oil, not taken in the form of oil, but in the substance of the fish they eat, which always contains some portion of oil or fat, is the cause of the exemption from this disease. I do not consider that a sufficient reason. But, in order to arrive at the true cause, it will be necessary to inquire, What are the causes of scrofula in general? and are the fisher people more exempt from these causes than others?

A comparative examination of the structure and functions of plants and animals, and their diseases, has been the means of throwing much light on the sciences of human physiology and pathology, and has shown that there is a very close analogy to, identity even in many cases in their diseases, with those occurring in the human species. And a knowledge of the causes of diseases in the vegetable and animal kingdoms has often led to a more perfect knowledge of the causes of the analogous diseases in the human species. As, for instance, the microscopic lichens and fungi existing on, and forming the cause of some chronic ulcers, are said to be identical with some of those found on decayed apples and other soft fruits; and the well-known connexion between the cysticercus of the pig, and tape-worm in the human species, the one containing the embryo of the other.

Are there any of the diseases of vegetables quite analogous to any of the forms of human scrofula? The essence of scrofula is a want of vitality. The *vis medicatrix*, as well as the other vital powers, is weak, and perhaps in some parts wanting. The consequence is, premature or partial death of some part.

One form of human scrofula is a tendency to chronic cutaneous disorders: at one time it is herpes, at another ichthiosis, at another lepra or itch, or something else, or several forms combined. In these patients such complaints are difficult to cure, and readily appear again in the same or some other form. These people, in popular language, are said to be given to scurvy. It is more correct to say, their constitutions are scrofulous and deficient in vitality. These generally have their beds in dark confined places, where cleanliness is not over particularly looked after. Their appetite is good, but assimilation is bad, and a defective supply of oxygen to the lungs, and a languid elimination by the various general emunctories, cause an accumulation of effete matters in the system, that form material for the growth and nourishment of chronic cutaneous disorders, many of which are known to be caused by prolific parasitic vegetations and microscopic animalcules.

In the vegetable kingdom, if we look into a forest of trees, we may see a number of larches, for instance, some with bark all clean, and branches vigorous, others covered all over with innumerable fungi, lichens, and parasitic animals, with branches and trunk going to decay. If we examine the wood internally, we shall find, in the latter cases, portions of the wood quite dead,—what is called by workmen *royed*,—that is, owing to some cause, the tree is deficient in vitality; like the case of H. M'K., some portion of the woody skeleton is affected with necrosis, and the lichens, etc., like a cutaneous infection, find in its surface and decaying juices a nidus, and nourishment for their growth. If we examine into the cause of the disorder in the tree, we shall find some defect in the soil or climate,—that is, in its supply of food, or the air it breathes, if I may say so, or of the substance of the tree itself, causing deficiency of assimilation, decay of vitality, and the other morbid phenomena observed above. In a healthy tree, and where the vital principle is strong, the parasites can find no proper nourishment, and are either wanting or stunted in their growth.

I consider these cases of the diseased trees just mentioned quite analogous to the cases of cutaneous scrofula mentioned above, and also in some measure to that other form of scrofula—necrosis, or the death of a portion of the bony skeleton.

It is well known that the young of various domestic animals, such as calves, lambs, and pigs, are liable to various strumous or scrofulous disorders,—one of which is known among country people by the name of “gut” or “gout,” another by the name of “stringling” or “stringliver.” These complaints are identical with two forms of strumous or scrofulous disorder we frequently meet with

among children and young people. The "gut" of calves, etc., is just the white-swelling of the joints of young people; and the "stringling" of young animals is the *tabes mesenterica* of children. This complaint in children is one of the disorders which, by the mothers, is vulgarly called "hive" or "hove," or "bowel-hive." The name "stringling" seems expressive of the appearance of the disorder. The liver, stomach, and intestines have frequent adhesions to the omentum, the mesentery, the peritoneum, and to one another, and give the idea of being tied by strings. The name hive, or hove, or bowel-hive, has arisen from the complaint, when occurring in young people, being always accompanied by tympanitis, as well as tumour of the mesenteric glands.

The above affections in animals and persons are induced by one and the same causes. In animals, gut, stringling, etc., are known to be caused by cold and moisture, but, above all, by want of pure air to breathe. I consider the rearing up of young animals in a space too confined and small for the number contained, to be the most usual, or rather the universal, cause of the above affections. In the same way, I consider the scrofulous diathesis in persons to be induced by their being brought up during infancy and growth in places too small and confined for the number of the family contained. Many other causes are mentioned by medical writers as conducing to scrofula,—such as, food deficient in quality and quantity, cold, moisture, etc., etc. These certainly operate as exciting causes, but they will develop scrofula only where the predisposition called the scrofulous diathesis already exists. And this, I consider, in every instance to be caused by deficiency, and consequent impurity of the air breathed. Carpenter, in his *Manual of Physiology*, ed. 1856, page 438, says:—"The due elaboration of the plasma of the blood is undoubtedly prevented by an habitually deficient respiration. The scrofulous diathesis is thus frequently connected with an unusually small capacity of chest." I will mention one or two instances as illustrations.

An improving farmer, by cultivating and taking in a large quantity of new ground, extended his farm to more than twice its former dimensions, and increased his stock in the same proportion. His calves and lambs became so given to "gut" and "stringling,"—that is, to "white-swelling of the joints" and the "belly-hive,"—that it was with great difficulty that he could raise any of his own stock. I had there and then, in my student days, frequent opportunities of examining in his stock these and various other scrofulous disorders, which at that time I acknowledge were a great puzzle to me. This farmer, however, got entirely rid of that annoyance. And how? When he extended his farm, and increased his stock, he was at first content with the small set of office-houses originally calculated for less than one-half of what he now possessed. The consequence was, the young animals were most scantily supplied with one species of nourishment most essentially

necessary for their healthy growth—pure air to breathe. He afterwards, however, extended his buildings, and erected a spacious set of offices, suitable to the increased state of his farm and stock, when these disorders suddenly and entirely disappeared.

Several years ago, the young family of a farmer under my care were often ailing; affected with glandular tumours, cutaneous complaints, cachectic disorders, morbus coxarius, white-swelling of some joint, chronic abscess, consumption, or some of the various other forms that scrofula assumes.

It is well known to medical men how difficult it is to make some parties use ventilation when it is particularly required. Some hollow excuse is always at hand. A house, perhaps, is said to be cold and damp, and that is made the excuse for shutting up every possible opening within reach. It is not considered that a free current of air is the surest way to remove dampness, and breathing air with its due proportion of oxygen is the surest way to raise up the animal heat. We know quite well that the principle that causes heat in a fire or furnace is the same with that which causes heat in the animal body. In a furnace or fire, heat is generated by the combination of the oxygen of the air with the carbon and hydrogenous matters of the fuel. In animal bodies, heat is also generated by the combination of oxygen with the carbonaceous and hydrogenous matters of the food and tissues. The degree of heat developed in either is just in proportion to the amount of oxygen consumed. No wonder, then, that persons living in closed habitations, and breathing air deprived of its due proportion of oxygen, are always sensitive to cold. They habitually deprive themselves of the principal means of keeping up heat and strength and health. In most cases, however, the advice of the medical practitioner is attended to to some extent, or as far as practicable; and within the last few years, a very marked improvement can be observed in the sleeping customs of all classes, with consequent improvement in health.

All our towns and villages have greatly increased during the last few years, by the addition of many substantial and commodious houses; still this increase of dwellings has not kept pace with the increase of population. The consequence is, while the better classes are commodiously accommodated, the working classes and poorer people are obliged to put up with less ample accommodation than formerly, and that is a reason why scrofulous disorders are oftenest met within them. Notwithstanding this, I have observed that neither white-swellings of joints, nor tabes mesenterica in children, nor any of the severer forms of scrofula are now so often met with among any classes of people as they were thirty years ago. The bowel-hive, so well known to and feared by the older matrons is hardly known even in name to most of the younger wives, some of whom now apply the name to quite a different complaint, an acute disorder, accompanied with swelled belly. I attri-

bute this improvement to the fact that a great change of custom in sleeping-places has universally taken place. The boxed beds, with folding doors, and the beds with curtains drawn down during sleep, have now gone almost quite out of fashion, and also the custom so universal in this quarter of covering with a cloth the faces of infants while lying in the cradle,—the excuse of the mother being that it kept the light from their eyes.

This change of fashion in sleeping places, combined with other causes, such as commodious and well ventilated schools, has not only lessened the frequency and severity of strumous disorders, but has also greatly lessened the virulence of many febrile and other disorders. This change, I have no doubt, has been brought about in a great measure by the direct and indirect influence of the medical profession, influencing, and insensibly leading on society in general, to adopt improvements so often recommended to them.

Among people of sedentary occupations, who pass much of their time within doors, and, in particular, where young people sleep in confined places, that do not admit of ventilation, scrofulous and chronic glandular disorders are often found. There are many instances of this among the ordinary people, residing both in town and country.

Among the fishing population, on the other hand, these sorts of complaints are very rare. The nature of their occupation requires cleanliness and ventilation; the want of these would soon show in an offensive manner. The newer of their houses are comparatively commodious; all the larger apartments that will admit of it, containing two good windows, one on each side. The older houses are not so commodious, but the mode of their construction, mostly with roofs open from end to end of their houses, admits of perfect ventilation, which, in general, is well attended to. Their beds are in airy places, and the confined sleeping closets, that so many other people use, are not in general use among them. Their doors are frequently open, and when weather permits, they prefer to do much of their work in the open air, sitting outside of their houses, shelling mussels, preparing lines, etc., and the younger children are much nursed outside by other children a few years older than themselves. These habits appear to me to be good reasons why scrofulous disorders, which are caused by deficiency of pure air to breathe, are almost unknown among the fishing population.

It might be asked if there are any circumstances in H. M'K.'s case likely to induce a disorder which is so exceptional in one of her class. The house she resides in is in a damp situation. It has only one apartment, partially divided by two or three beds. Originally it had one opening in front and another in the gable: the front one being sometimes filled with glass, but oftener with turf. During a necessary repair, a few years back, the opening in



front was enlarged to admit of a window containing nine small panes, and more lately, with the assistance of the parochial board, another window was inserted. It was the only house in all the sea-villages of the parish, that I remember, which is inhabited by a family, and without any chimney of some kind, the smoke of the fire having to escape through a hole in the roof. About four or five feet from the front of the house, a copious stream of water continually flows from the only public fountain in the place. The earth floor is sunk so far below the level of the surrounding ground without, that its general surface is about eighteen inches below the level of the stream of water. From the exceptional kind of house, it may be expected that there is among the inmates an exceptional kind of living. The rest of the inmates are not decidedly unhealthy, but some of them are soft, and all without the usual energy so characteristic of the fishermen of that place. The father, though now a fisherman of Porteasay, is a native of Ross-shire, son of a cadger or fish-carrier of Helmsdale. This may account for this specimen of the architecture of the West Highlands having been introduced into Porteasay.

In the case of H. M'K., it is to be observed, that the first occurrence of the disorder in the leg was caused by an injury done to the bone by a kick, and she has had five other attacks of the same disease in as many different parts of the body, without any external hurt to account for any of them. From this I am inclined to suspect a very poisoned state of the system. The poison, generated in the body by cachexia, and the decomposition of the humours and tissues, was assisted by a morbid influence, which disposed it to attack, in preference, textures of the same kind as that first attacked, which were in this instance the bones. We often see a disposition of this same kind in various other complaints, both chronic and acute.

ARTICLE IX.—*Remarks on the Compulsory Vaccination Act for Scotland.* By Dr LYELL, Newburgh, Fife.

Now that this Act has been in operation for nine months, it may not be amiss to take a glance at its operation, especially at its medical aspect.

From the first and second sections of the Act, parochial boards are required to meet and appoint public vaccinators, at a certain rate of allowance per case (1s. 6d. and 2s. 6d.) "successfully vaccinated by such vaccinator." One would naturally expect, from the wording of the Act, the appointment to be in some degree profitable to the vaccinator; and this opinion was certainly prevalent both amongst parochial boards and medical practitioners, as at some boards there was actually a contest for the appointment. A little