Diseases Incident to Arts, Trades and Professions

By George Johnstone

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The subject of the following pages I need scarcely observe is one of some difficulty—one to which considerable attention has been paid by various authors. But however difficult the original investigation of it may be, still more so is useful application of the knowledge derived from the results of such investigation, as is shown by the mortality amongst the inhabitants of manufacturing districts, and amongst people who, though not residing in these hotbeds of disease, are still subjected to morbidic agents, which whilst they not only shorten life in the individuals subjected to them, tend to produce constitutional weakness in their offspring. It is not only to the occupation
which they follow, that the diseases to which they are liable are due, but also inattention on their part to the laws of health. By this I mean that the followers of different callings, in most cases do not adapt their diet to the amount of physical exertion which they have to undergo, whether this be small or great. If they follow sedentary occupations, it is common for them to eat more than the system is able to dispose of by Respiration or otherwise; and on the other hand as is frequently the case, the diet is not sufficiently good to support the frame under the amount of exertion it has to undergo. Hence they take from the Capital instead of the Interest.

Moreover they are destitute of the knowledge of means, which if made use of, might in some degree compensate for the ill effects of confinement, vitiated.
vitiated atmosphere and faulty regimen. I allude to want of exercise, inattention to personal cleanliness, and the intemperate use of Alcoholic stimulants. They are more apt to spend their hours of recreation in the "dram-shop" than in atoning for the day's confinement; and a total disregard is paid to the functions of the Skin which should certainly undergo an entire ablution at least once a week.

In the following pages I have viewed injurious states or agents as they affect one or more systems specially; mentioning under each system the class of men who are liable to diseases of those systems—not assuming that the workers at a particular trade are liable exclusively to diseases of one system merely; for we find that if one function of the animal economy is deranged the others are almost sure to participate in the morbid change.
more or less. Nevertheless, certain of the noxious influences to which persons are exposed, affect one system as it were by preference, and I have thought it best to arrange them accordingly.

The subject of "diseases incident to Arts, Trades and Professions" is one so comprehensive in its nature, that even a mere outline of them all, would serve to fill a volume. I have therefore only specified a few of the most important trades, and adverted briefly to the diseases to which they are especially liable.

1st Agents or States injurious to the Respiratory organs.
   a) Dust as in Corn Millers; Snuff-makers; Hair, cotton & Silk Spinners; Miners; Grinders; Masons;

Corn Millers are necessarily confined very much during their labours, and are continually
continually inhaling particles of dust which sooner or later must have an injurious effect upon their Lungs; and consequently we find that many of them become afflicted with Asthma at a very early age.

Snuff makers are of course exposed to the influence of a narcotic agent during their work—but the effect is not so pernicious as one might at first sight suppose. In fact M. Parent Duchatelet states that snuff making is not an unhealthy occupation as he witnessed it among the snuff makers of Paris; but at Seville Dr. Traill found that the men were exceedingly liable to cough, and the mules were even affected with staggers. Under this head I may make a few observations on Tobacco Manufacturers and the state of health induced by that occupation, although here as in the
former trade, habit seems to have a wonderful effect in modifying its noxious influence, and the only injurious result appears to be due to the heat in the stoving department, which many of the men cannot bear. According to M. Pointe of Lyons, "the affections to which they seemed subject were principally consumption, inflammation of the eyes, anthrax and furuncles, the two latter of which generally appeared on the trunk, were extremely tedious, and unless the occupation of the patient was changed, hardly ever admitted of permanent cure; but the affection which seemed to prevail most was Pupina haemorrhagica, and a disposition to Seemy. On the other hand it is worthy of remark that Tobacco manufactories in some degree, appear to be exempt from certain affections viz.: Intermittents & Scrofula, which are very common among the inhabitants of
of Lyons; the latter being remarkably prevalent in other manufactories especially those of Silk. Itch against which tobacco has often been asserted to possess prophylatic powers was very frequent; but trembling and nervous affections, to which persons who are much in contact with narcotics are said to be very liable, was in no instance observed as the effect of continued employment in the manufactory in question.

Workers in Flax, Silk and Cotton. We need not be astonished at the large mortality exhibited in this class of artisans, when we take into consideration the irritated and hot atmosphere which they breathe, and the long hours of employment in these manufactories. A great number of the operatives are children from eight years of age and upwards and very seldom do they live to middle age. According to the Parliamentary
Reports of 1854 the number of persons employed in Britain in the weaving and spinning of flax was 32,283; of whom 10,395 were males, and 21,888 females and 5,288 children from eight to thirteen years of age. In the cotton manufacture 106,495 males are employed; 119,639 females or 220,134 persons, of whom 26,771 are children between the ages of eight and thirteen years. The spinning and weaving of silk employs 10,188 males and 20,409 females, or 30,682 persons of whom 9,074 or about one third are children between eight and thirteen years of age.

They are liable to chronic inflammation of the Bronchial membrane, inflammation of the lungs, and Pthisis pulmonalis. The dust which is largely inhaled produces organic disease of the lungs and leads
leads in many instances to the development of Tubercles — and we can easily imagine that a considerable portion must be swallowed with the saliva and interfere with the proper digestion of the food.

Thackrah found that of 1079 persons employed in a large flax manufactory, only 9 had attained the age of 50; and besides these only 22 who had reached even 40 years of age.

The hours of labour are much too long; children have to rise from their beds at 5 a.m. and walk perhaps one or two miles in all kinds of weather to the mills; there they are confined nearly all day till 6 P.M. and are then obliged to brave the storms of winter after perspiring profusely, and in a state of great exhaustion from their labours during
the day; in fact they are placed in the most unfavourable position possible, for withstanding the vicissitudes of the weather. Besides all the deteriorating influences of a hot, vitiating atmosphere, confinement &c, I have observed in some manufacturing districts that the workpeople who live at some distance from the mills generally take their victuals with them—broths, veg- etables &c are inconvenient articles to take and are generally disliked because they would have to be eaten cold. Tea or coffee is substituted, and it is quite evident that this kind of diet is not the most suitable for supporting the frame under its labours exertions.

Miners are exposed to a vitiating atmosphere impregnated with coal dust &c and hence diseases of the lungs.
lungs are not unfrequent amongst them. They are liable to asthma and a spurious form of Melanosis charactized by expectoration of black matter which has been found to consist almost solely of carbon. D. Christison made an analysis of this substance and says "it is scarcely possible not to recognize the ordinary products of the distillation of coal." A gas of the same quality was procured, and likewise a naphthous fluid holding in solution a crystalline principle, analogous to, if not identical with Naphthaline." The source of it is in some instances said to be the inhalation of the smoke of gunpowder used in blasting; others attribute it to the smoke from the lamps which they carry on their heads. This is not peculiar to coal mines for it has been found in the
"Hacockah on health"
the Hartz mountains, but is here attributed to gun-powder and bad ventilation.

The Miners of Cornwall are, according to Dr. Forbes subject to chronic bronchitis from the inhalation of dust. In the mines of the North of England the workmen it is said suffer considerably when employed in ore in the sandstone, but are sensible of no inconvenience when the ore is in limestone.

The reason they assign is that the latter is full of vertical and other fissures, which allow the superincumbent beds of Water to percolate through the roof of the mine; whilst the sandstone strata, which are impervious to water preserve the mine quite dry; consequently the minute particles of rock formed by blasting on the pick-axe are kept in a dry state within the sandstone mine, forming as it were
were an atmosphere of dust, which the miner is constantly inhaling. In the limestone mine the particles on the contrary are laid as they are formed by the continuous oozing, dripping, and splashing of the insinuating water.

Grinders are especially liable to diseases of the respiratory organs, and this is particularly observed of needle fork and knife grinders. They are attacked with an incurable consumption called grinders' rot. According to Dr. Knight "out of 2,500 grinders in Sheffield, there were only 35 who had lived to 50 years of age, and not perhaps double that number who had reached 45; but of 80 fork-grinders who used the dry-stone, it was stated that there was only one who was as old as 55 years." Of 20 deaths which occurred amongst fork grinders 17 were under
under 35 years of age. Needle grining is still more deadly, and most of the men die under 30. Where wet stones are used the mortality is found to be greatly diminished.

Masons are also particularly prone to diseases of the chest from the constant inhalation of minute particles of dust, by which they are perpetually surrounded during their labours. The constant irritation produced by these particles of matter at length leads to the deposition of tubercles—their intemperate habits and exposure to the vicissitudes of the weather, all favour the development of the morbid product, and as we might naturally conclude they are a short lived class of men, seldom surviving longer than 40 years of age. Those men
men who work under sheds are more unhealthy, than those who work in the open air, and hence we find that the masons of England are less affected than those of Scotland.

Sailors, Milliners &c. are as we can readily imagine exceedingly liable to pulmonary diseases. The former assume a faulty position while at work, and the due play of their lungs is consequently impeded; they breathe for several hours a day in a vitiated atmosphere, and on coming out into the open air, are necessarily prone to be affected by the sudden change. They are for the most part men of intemperate habits, and from this combination of causes a low form of inflammation often attacks the lungs—this is not properly attended to—the exciting causes are being
being continually applied, and ultimately tubercle begins to be deposited in the air cells. Inflammation seizes on the part which is already of defective vital power, and Phthisis pulmonalis is the result. Hence as a rule, sailors are short lived men.

**Acid Fumes and Chlorine gas when inhaled, tend to produce irritation of the air passages, but habit has a wonderful effect in lessening their influence.**

**2nd Agents injurious to the Circulatory and Digestive Systems.**

With the exception of a few occupations such as Hackney coachmen, Postillions, it is almost impossible to specify agents which act only on one of these systems; for the Digestive and Circulatory Systems are
so closely connected with each other, that it would be almost impossible to separate them - the one cannot be affected without the other almost immediately suffering a morbid change. Therefore after enumerating the diseases which act locally on the Blood vessels, and the class of men subject to them, I shall consider the agents which act upon both Systems together.

Postilions, Hackney Coachmen and others of the same class are confined for a long time to one posture, with the knees bent - on suddenly straightening the limbs, the Popliteal artery sustains an amount of sudden extension, much greater than it is able to bear - the coats of the vessel are ruptured and Aneurism, in consequence, is formed.

In other individuals whose occupation subjects them to stand long in one position, Varicose
Varicose veins often occur as in Washerswomen. Faulty position whilst at work not merely induces disease of the circulatory, but also of the Digestive System. This is very well exemplified in the case of Tailors, Shoemakers, Milliners, Weavers and Saddlers, and all persons much occupied in reading and writing. These classes of individuals are much confined to the bent-sitting posture, and from the descent of the chest there is obviously compression of the Abdominal viscera, between the vertebrae and pelvis; this naturally produces stagnation to a certain extent in the blood vessels of the abdomen; consequently there is not a continual supply of fresh blood to the Alimentary canal, and if an organ be not nourished, its functions cannot be rightly performed. Did the individuals subjected to these injurious states, use counteracting measures, such as exercise, when
when opportunity afforded, the effects would be in a measure modified; but as I have previously mentioned, this is seldom done, and hence we have functional disorder of the Liver, from congestion of the Portal system; Indigestion, diseases of the mucous membrane of the intestinal canal, Hemorrhoids, Fistula &c.

Great muscular efforts as in lifting heavy weights (e.g. in Porters) often leads to the production of Hernia. The Sailor is also exceedingly liable to it, from straining in the course of his occupation, and the same disease is also found amongst Soldiers who are fatigued by long marches.

Another source of injury to the Digestive system is observed in the case of workers in Lead, who, after continuing at the occupation for a time are affected with obstinate constipation, severe dyspepsia, and
and a peculiar kind of colic, characterized by the obstinacy of the fits, their duration and tendency to recur.

Many other causes might be enumerated which tend to impair the appetite or weaken the digestive powers—such as high temperature, common atmospheric impurity, dust and gaseous impurity of the atmosphere, and anxiety and mental application.

3rd. Agents injurious to the Nervous System.

(a) Agents injurious to the Special senses. We find that Watch-makers, Milliners, workers for linen repositories &c., from the close application of the eyes to minute objects are subject to short-sightedness and paralysis of the nerves of the eye.

Bricklayers, Labourers, Colliers, Chimney-sweepers, Lime-burners &c., and persons whose eyes are subjected to the irritation of particles of organic matter are very liable
liable to Conjunctivitis.

Cotton Spinners, Corn Millers &c., are subjected to the noise of machinery which more or less affects their hearing.

5. Agents which affect the Nervous System in general.

1. Poisonous substances such as Lead in Painters and Potters. Mercury in makers of looking-glasses &c.

The result in the course of time is, in the case of the workers in Lead, palsy affecting the extensor muscles of the fingers and balls of the thumbs. Those working long in Mercury are affected with Mercurial tremor and palsy.

The fumes of Zinc in brass founders; of Sulphur in straw bonnet makers; of Sulphurated hydrogen as workers, also act injuriously on the Nervous System giving rise to headache and debility.

2. Anxiety and mental application as in merchants.
merchants, professional and literary men, when severe and long continued leads, amongst other things, to disease of the Brain, and in some cases to Insanity.

4th. Agents injurious to the Skin - as flour in Bakers - Sugar in Grocers - Sulphuric Acid in Hatters - Lime in Bricklayers.

In the case of Bakers we have as a result a cutaneous disease, commonly known by the name of the "Bakers itch." Grocers are also afflicted with a disease of the same nature, and Hatters from having their hands immersed for a long period in a solution of Sulphuric Acid are troubled with corrosion of the cuticle and nails, forming unhealthy sores.

Chimney sweepers probably on account of the irritation of soot, and habits of uncleanliness are liable to malignant ulceration of the Serotum, commonly termed Chimney sweeps Cancer. It rarely attacks those under 25, and it is most
most common between the ages of 30 and 40. Firemen are liable to a cutaneous disease, 
eczema, characterized by "very minute vesicles in patches, presenting a shining appearance, 
yielding a fluid which dries into a fur- 
aneous crust. The stain is of a bright red 
colour."

Gardeners and Nurserymen are liable to a form of Urticaria.

It now remains for us to mention a few 
of those agencies which may be employed 
in the prevention of such diseases as we 
have shown to be incident to the working 
classes.

Social Science has of late years made 
very great progress; and its results have 
not been confined to the learned few, but 
widely spread among all classes of the 
community. They have not been wanting 
eminent medical authorities to enlighten
the public upon the laws of health. Still it is one thing to know, and another to reduce that knowledge to practice; and we have every day to deplore the woful neglect with which the lower orders treat the information thus freely afforded them. Human beings are very conservative, especially in such matters as require any exertion to correct, and the force of habit has, in regard to health, successfully resisted the claims of enlightened conviction. The training of the generality of men has not enabled them to conceive that respect for the force of Law, which shall at once result in obedience to it. Physical as well as Moral Laws must assert their claims, and rigorously demand the penalty of violation before they can get themselves acknowledged. Still the conscientious medical man will not feel himself at liberty to desist from enforcing those laws. Possessed, as every practitioner should be, with the idea that his
his function is not only to cure but avert disease, he will reiterate those principles on which physical well-being depends, and avail himself of all the resources which can be brought to bear in securing for such truths the respect to which they are entitled.

There are many diseases the causes of which are so obscure, that no possible watchfulness can avert them. Nevertheless we may truthfully assert that the great proportion of disorders which attack the working classes can be directly traced to the violation of some well-known law; and had the limits of our Thesis permitted us, we might have entered into a detailed account of such causes -- as it is, we can only give a few general laws, which all recognize, and show what disastrous consequences have followed their neglect.

Prominent among these is Exercise -- without which it is impossible for any length of time...
time to maintain the animal economy in a sound condition; and fortunately for the poorer classes, such forms of exercise as act most beneficially upon the entire system are within their reach. There is no exertion which brings the whole muscles of the body into play better than walking or running. Yet how commonly do tradesmen of sedentary habits neglect such exercise. It may be pleaded in excuse that they have not the time - their hours are so long, and no suitable place presents itself for such recreations. This excuse may be valid in some cases. Sailors, especially those in our large cities, have reason for such complaints. From recent accounts received, especially from the graphic pen of Mrs. Kingsley, of the lives these men are made to lead, we are not disposed to speak in any language but that of pity regarding them; we can only hope that their condition will be speedily ameliorated. But shopmen, the workers in factories, and other tradespeople are not so hard pressed but they
they might snatch an occasional hour to stretch their limbs, and fill their lungs with the pure air of Heaven. Instead, however, of taking such healthful action, which they should learn to regard not so much an amusement as a duty, they prefer to spend their vacant hours in scenes of artificial excitement — that languid feeling which naturally possesses them at the close of their day's labour — and which to a great extent may be accounted for by the tainted atmosphere they have been breathing; they seek to dispel not by a brisk walk, but by the stimulus of Alcohol, or the excitement of the gambling table; and no persuasion, no array of consequences however terrible will induce them to visit regularly those scenes of recreation, such as public parks, gardens, which, thanks to the generosity of our Noblemen and Public Bodies, are to be met with in, or around most of our large cities. The consequence is — sedentary tradespeople do not live
live half their days - their nervous energy is constantly drawn upon, and, when they should be in the full bloom and vigour of manhood, they are worn out, and consigned to an early grave. The benefits of Exercise are best seen by contrasting the lives of our rural population with those of our city population. In many of the country districts where primitive habits still prevail, a great mass of the people attain a ripe old age. In visiting a country churchyard, the most careless observer is struck with the fact. We do not affirm that the greater exercise taken by these simple people is the only cause of their longevity - affirmed, however, it is no inconsiderable agent; and seeing the great tendency in our day to centralization, if we would not have the race dwarfed, and human lives shortened, we must enforce upon all, particularly upon our confined tradespeople the necessity for taking regular and frequent outdoor exercise.
Another condition of health, namely cleanliness, is greatly neglected by the lower orders. There are thousands especially in crowded districts, whose bodies seldom experience the bracing effects of cold water. Once a week at all events, the entire person should be carefully washed. For, if the skin be interfered with in the exercise of its secretory function, double duty will devolve upon the Kidneys, which will speedily entail disease upon that organ. Working men whose occupation promotes a free discharge of perspiration escape many of the consequences which attack the man of sedentary habits. It is of the more importance therefore that confined tradespeople should be very careful in keeping their persons clean. Baths may be had in any large town, which working men can visit, and there is no excuse left if they neglect such sanitary measures.

There is an old adage, which like the most of adages, contains a deal of truth to the effect
effect that "cleanliness is next to Godliness"—not that it is meant to be asserted that the letter of the saying is true. The truth which underlies it we take to be this—there is an intimate connection between physical and moral well-being—the two natures act and react upon each other. Given the body in a healthy condition, cleanliness being a main agent in perpetuating such condition, a great many causes which disturb the rhythm of our moral nature would be removed. So that it becomes the clergy as well as everyone interested in the welfare of the race to enforce the Laws which the Scientific man lays down, and demonstrates.

We have then announced two general conditions, attendance to which is absolutely necessary to health. There remains a third, which demands a few remarks before closing this Thesis. We refer to Temperance—not, however, meaning to restrict that term but to give its widest application. In the exercise of all our appetites and
and passions, it is indispensable to health that they be enjoyed in moderation. Man must not be regarded, as an assemblage of fragments, but as a complex whole. It is quite unphilosophical to call that man's conduct natural who allows to each or any passion uncontrolled liberty. The various appetites have all a relation to each other, and no one should be enjoyed at the expense of another. The balance between them must be maintained, otherwise man forgoes his high distinction of being a rational creature, and degenerates into a being of mere brute instincts. There is a law which is meant to maintain the separate parts in their own place. This we call the law of Temperance using that word in its widest sense. It will not however comport with our object to state all the forms of Intemperance, although we should be careful to remember that every phase of it has a prejudicial influence on health. The most glaring form however which this vice assumes, and one which
which is most destructive to health, and therefore requires special notice is the abuse of intoxicating fluids. Its effects are too commonly felt and seen to require any description from us. Truth authorizes us to say that among the working classes, this vice prevails very extensively. To point out the various ways in which it affects them would be a work of superfluity — Our Asylums and Hospitals are sufficiently answering these questions.

We have named them three conditions, necessarily general, as requisite for the maintenance of health; and which if applied to the details of life would prevent many of the maladies to which working people are subject.

When these principles will be heartily recognized and acted upon by that class, is a problem, the solution of which we are not bold enough to attempt. The physical any more than the moral, regeneration of the world is not
is not to be expected through any miraculous agency. We must be content to work and wait; and although to the earnest student of medicine the small heed paid to his counsels is apt to provoke despair, yet, if he have learnt the lessons of life aright, he will be content to work on in the hope that Truth, however slowly, will gather strength and ultimately prevail.

"Yet we doubt not through the ages one increasing purpose runs,
And the thoughts of men are widened by the progress of the suns."
Winders — home of Remedie Mark

White Pear

Remedies

1. Exercise
2. Cleanliness
3. Temprance