

# Disease - Breeding Dirt

"Nictians," in The Englishman  
 "Martin, if dirt was trumps, what hands you would hold?"—Lamb's Suppers.

Some such reflection as this passes through the mind of every school doctor and every knowledgeable person who investigates the children of some of our elementary schools. Custom cannot stave the horror of the grossness of the dirt, nor familiarity breed contempt in the breast of the onlooker; but alas! how different the attitude of the dirty one.

To the school doctor the subject of dirt is not a matter for reflection merely; he is actively engaged in combating it, for it is wedded to his arch enemy, disease. He speedily finds that his work is essentially a branch of education, a necessary part of a liberal education, if you please; and he becomes an apostle of cleanliness. Day in and day out, at every school and in every class-room, he becomes a teacher of the prime necessity of cleanliness—clean bodies, clean air, and, by no means least, a powerful, if only indirect, teacher of the necessity for clean homes.

In this article I wish to outline some of the conditions incident on dirt which have come within my particular view in school work; to remark on school and home conditions which affect cleanliness; and to suggest the powerful influence that modern school work may bring to bear upon the rising generation for the betterment of the general habits of the community.

Just before school medical inspection began to exert any influence on London schools I examined the children of thirteen public elementary schools in the Hackney division of London. The children ranged from seven to thirteen years of age. The schools were subsequently classified, as I judged the general situation of the region, the housing and the condition of the children favorable to their well-being. Thirteen schools were found in which the children reached a fair average of cleanliness, three schools were above average, and fourteen below.

The eye conditions of these children worked out as follows:

Cleanliness.	Cases of Disease.	Percent.
Above average . . . . .	19 in 2,174	0.873
Average . . . . .	134 in 9,493	1.416
Below average . . . . .	197 in 10,256	1.92
Totals . . . . .	350 in 21,893	1.608

The "clean" schools were situated in the north of Hackney, where good housing and many open spaces are found; the "dirty" schools in Hoxton, Haggerston, and Bethnal Green, where are miles of mean streets crowded with humanity. The schools above the average of cleanliness had an incidence of disease of about one-half that found for the schools below the average cleanliness; yet it must be remembered that no one of the best schools was without some dirty and ill-kept children, for in every part of London is found some "slum" street which breeds its quota of dirtiness.

If we look into the eye conditions which make up the 350 cases found in these schools, we shall have a fair idea of how dirt influences their causation.

Conjunctivitis accounted for 37 cases. Phlyctenular conjunctivitis, being associated with nasal catarrh, septic teeth, bad feeding, and general malnutrition, accounted for 53 cases.

Blepharitis, almost exclusively a dirt disease, accounted for no less than 260 cases, or, roughly, 75 per cent.

I have said blepharitis is almost exclusively a dirt disease. I think the description is justified. It is true that its acute onset is often associated with measles or other exanthem, and that its chronic form is almost always associated with some error of refraction, some visual defect in the eye, that tires the eyes and inflames the lids, but the fact remains that this sort of eye disease is not seen amongst clean folk, except in its most elementary form. In other words, cleanliness keeps down its manifestation, but dirt increases it. Cleanliness reduces the microbe that set up the ulceration of the irritated eyelids, dirt increases their number and fosters their activity. The final effect of this simple disease is disgusting in the extreme; the subject is permanently disfigured by red, flabby, lashed eyelids. No wonder Jacob loved not Leah with her "tender" eyes!

Now I will give you some much more delicate indications of the influence of dirt on the susceptibility of disease. Everyone knows the role of micro-organisms, and in particular the action of micrococci and bacilli in the production of disease. The succeeding notes will show how far cleanliness and dirt affect the number of these organisms about the eyes of children, and consequently their chances of eye infection.

The conjunctiva frequently harbors microbic parasites. These I collected by suitable means, and incubated in the usual bacteriological manner. Two schools were selected, one situated in the north of London, newly built, well-situated, amid comfortable dwellings, filled with clean and well-cared-for scholars; the other, situated in the densely-populated district of Bethnal Green, an old building, within a district of poor cottages, "model" dwellings, and workshops, and filled with ill-kept scholars. The one school was above the average of cleanliness, the other was below the average. The head teachers selected groups of children as their average scholars who presented clean, healthy conjunctivae. In each school fifty children were examined, twenty-five boys and twenty-five girls. They were chosen of ages of five, seven, nine, eleven, and

thirteen years, of each five children. The weather on several days preceding the inoculations had been wet in the extreme, so that one common source of conjunctival infection in towns, street dust, was entirely absent.

Of the 100 conjunctivae examined 23 were sterile. Of the 50 "dirty" children only 3 were sterile. The totals of the colonies of organisms grown in all cases show very well the difference in the incidence of micro-organisms in dirt and cleanliness. "Dirty" group 789 colonies; "clean" group 262 colonies.

Twenty-eight different varieties of organisms were distinguished, in most cases they were common parasites; diphtheroid organisms were found 36 times, and staphylococci, pus organisms of the mildest virulence, 43 times. Some pathogenic organisms were found, and these almost exclusively amongst the "dirty" group, thus: The Bacillus Koch-Weeks, the cause of epidemic mucopurulent catarrh, was found in one; the Bacillus Morax-Azenfeld, the cause of angular conjunctivitis, in three; the pneumococcus in one and streptococci in four.

These examples are eloquent of the effect of dirt on disease; but before we leave the subject let me give you one more example in which two indicators of dirt and ill-condition are compared together.

"Follicular conjunctivitis" is to the conjunctiva what enlarged tonsils and adenoids are to the throat and nose. All three conditions indicate some general lack of health. Seeking to discover the variations in the incidence and size of these lymph follicles in the conjunctiva, I made a systematic examination of over 1,000 children in a fair average London school, noting at the same time the visual acuity of each and both eyes, and also in the girls the condition of the hair on the head, of whom 80 per cent had nits in their hair.

I found that the incidence of the lymph follicles in boys and girls agreed from the ages of three years to nine years, but from then the girls increased over the boys by 30 per cent. This sudden and continued excess among the girls was inexplicable until I chanced to place alongside the charts the curve of the incidents of nits in the girls' heads; then it was seen that the curve of incidence of the nits was similar to that of the follicles in the girls. There is a fair average level between the ages of four and nine years, and then a sudden rise of 20 per cent in the tenth year, followed by a slow decline in subsequent years. Inquiries amongst the teachers showed that about the age of ten the girls were expected by their mothers, most of whom were working women, to take their share in the home duties. With this responsibility came the liberty to look after their own toilet and the like, hence the increase of the nits, an indication of neglect of the person, and with this an increase in the lymphatic structures as indicative of diminished good health. When personal pride comes in as a factor the person becomes cleaner, the curve of nits falls, and with better cleanliness and health the curve of the follicles also declines. Let it be clearly understood my suggestion is that these two conditions are dependent upon a common cause, dirt or lack of care of the body, and not that nits cause conjunctivitis or vice versa.

**Fighting Dirt**  
 So much for my main thesis. Dirt is a foe just as much as the full blown manifestation of disease. So it is dirt we have to combat. To this end the recent progress of medical inspection of school children has been an inestimable boon. The visits of the school doctor and the school nurse, have awakened an interest and intelligent judgment on the subject that has already borne much good fruit.

Dirt reigns rampant upon the shoulders of three giants: Ignorance, Indolence, and Poverty. That people should be ignorant of the dangers of dirt, and even of the state of dirt in which they and their children repose, is not to be wondered at. Cleanliness is essentially a modern virtue. It may have blossomed in well-favored communities in the past, but never to the degree and extent found today. Within but a few generations of our own the fashionable beauty was not ashamed to carry a back-scratcher wherewith to relieve her body from the torment of the hosts that overran her bejeweled person; in fact, she dallied deliciously with the instrument in public, for was it not fashioned delicately, and enriched with gems? What was an apparently normal state formerly is now an indictable offense in the school world! Is there no progress, oh ye pessimists?

Ignorance must be dispelled. People do not know what dirt is until with the eyes of intelligence they regard it apart from themselves. I remember a cultured young lady bringing me a head-louse which she had found on her comb during toilet operations, she showed it to be as a curious natural history specimen, all unaware of its significance! The nimble flea she would doubtless have known and crushed with vindictive anger and disgust, but with this creature she was ignorant. With the poor there is less of this sort of ignorance, but more of a kind that asserts that it is a state of nature, the "weakness" or the "strength" of the child, as occasion may suggest, "breeds the thing."

Next to these, poverty is the giant upholder of dirt. It costs money to be clean. Water, soap, towels, and heat are not the gifts of the gods, but of the strong, right arm of the worker, and without these prime necessities of cleanliness, or the chance to get them, dirt cannot be vanquished.

Man is not necessarily a dirty animal. Circumstances may make him so, but in any experience the opportunity for cleanliness is

eagerly seized. In South Africa I saw on more than one occasion groups of negroes washing their bodies at the river banks, not merely bathing on a warm day, but diligently cleaning themselves. In many parts of the Transvaal water is precious and hard to come by, so the Dopper Boer was by circumstances not a frequent and liberal user of water; but when in charge of a company of them as prisoners-of-war on a transport ship, I found they seized the opportunity for washing with eagerness, the neck of the ship was alternately a vast bath-house and a busy laundry.

It was not long ago that the epithet of the "great unwashed" was hurled at our own poor. And so they are. But whose fault is it that they are unwashed? Can they wash and be clean in cramped, over-crowded quarters, in regions where bathing facilities are conspicuous by their absence? How can a family living in a single room bathe their bodies? Decency forbids them to be decently clean! There is a sense of delicacy common to the people which is a thing to be fostered. In one of our great provincial cities, where courts abound, there were formerly common privies for a whole court, with the result that the younger women suffered habitual constipation; they would not, and then they could not, use the common privy.

Again, to wash and be clean is easy and pleasant in a well-appointed bath-room, where taps labelled "hot" and "cold" gush forth their sparkling fluid to a turn of the wrist. But how can you wash children in the cold, and when their is no warm water and good soap to remove the dirt? I can remember the lack of interest the bath presented when encamped upon the high veldt, when the water gathered ice upon its surface, and a keen cold wind blew through any crevice of a thin canvas screen. It was better to be warm than clean! If cleanliness be next to godliness, why has not each church its bath-house attached, with its doors as freely open to the poor as the door of the house of prayer? Is the baptistry dead?

Lastly, an enlightened board of education should foster, not hinder, the spread of cleanliness amongst the children of whom it is the official guardian. The present-day cloak-rooms of schools are an abomination, a general exchange for the livestock of the child keep her children clean when her child is compelled to hang its outdoor clothes side by side, nay, fold on fold, with those of a dirty and verminous child? Is it fair to handicap the best endeavors in this way? In some schools the stairs and landings, exposed to the dust and dirt, and the repeated contacts of the stair traffic. How can clothes be clean under such conditions? If the school cannot directly help cleanliness, at least let it not spread dirt.

In one instance I know of, the superior educational authority placed a direct handicap on an effort to attain cleanliness. By a co-operation of the local health and education authorities, verminous children were sent to the public washhouses during school hours (the time when alone arrangements could be made certain) for a very necessary cleansing. But the superior authority disallowed the mark for attendance at school. To the credit of the local authority, let it be said, they preferred to lose the mark for attendance than forego the cleansing of the children.

The influence of the teacher, the nurse, and the doctor is not limited to the children immediately under their care. The influence spreads far and wide. Remembering this, we should endeavor to direct it along lines that will ultimately promote public order and cleanliness.

The street pavements, those excellently ordered ways of modern life, are defiled hourly by the inconsiderate spitting of men who were recently school children. Let anyone examine the footways where workmen congregate during the dinner hour, their state will disgust him. Time was when the street was the common kennel into which every manner of filth was pitched irrespective of the risk to the passer-by; now such an offense is at the peril of the doer. May the time soon come when spitting will be no less an offense.

It is a sad thing to note that the ancient Hebrew lawgiver had to give specific directions to the man on his conduct when he passed the bounds of the camp in response to nature's call, when the very dog has an instinct that needs no teaching. A pity it is that the law-giver did not lengthen the decalogue by one more: "Thou shalt not—"  
 "Thou shalt not spit, or cast refuse upon, or in any way defile a public place; for he that defileth the city, the habitation of his brethren, shall not go unpunished!"

Public opinion, backed by the occasional wholesale stimulus of a smart fine at the hands of a wideawake magistrate, will do much to lessen the evil; but those who control the training of children can do much by engendering such a habit of mind as will induce a decent habit of body.

In conclusion, let me add that we doctors say these things in no spirit of harsh criticism; we do not yearn to pluck out the mote from our brother's eye, not regarding the beam that is in our own eye. Rather, in the spirit of the friend of John Gilpin, we exclaim:

"But let me scrape the dirt away  
 That hangs upon your face."

**SOOTHING**  
 "But those extremely violent women lunatics—how do you manage to keep them so quiet?"

"That's an idea of the new superintendent's."

"Yes?"

"Yes; he has the straight jackets made up in the peek-a-boo style."—Puck.

"Doctor, my wife has lost her voice. What can I do about it?"

"Try getting home late some night."

# Flying to North Pole

The question of reaching the North Pole by aeroplane is one which has been considerably discussed since it became evident what the possibilities of the machine were. As might have been expected, however, not much enthusiasm has been aroused among the aviators, although there are many who believe that the journey could be accomplished. Among the latter is to be found no less prominent an authority than Henry Farman, who says:

"To make a dash from Spitzbergen to the Pole and back would be out of the question, as the distance separating the two points is, I believe, between 750 and 800 miles, making a total of 1500 to 1600 miles. But with the little aerial craft heavier than air the voyage might perhaps be effected in stages. If I had to undertake it, which by-the-by I have no intention of doing, I should probably organize a fleet of fifteen or twenty aeroplanes capable of carrying a heavy load in addition to the pilot. These aerial vessels could certainly convey all the tools needed to construct a snow hut, and could also carry sufficient essence and oil for the motor and provisions for the crew for many days. An advanced post could thus be established, and, by making several journeys forwards and backwards, all the scientific instruments and a large stock of provisions could be accumulated. While that was being done a couple of aeroplanes could push forward to the next spot to create a second depot. As the distance between those depots should not be more than fifty or sixty miles, the voyage between the base of operations and the first depot would not take more than an hour and a half at the most. It could therefore be made two or three times in the course of the twenty-four hours, and, as there is no night during the summer months in those regions, advantage could be taken of every propitious state of the atmosphere. As far as I am aware there is no great danger of hurricanes in that part of the world in the summer season, and nowadays aeroplanes are constructed to fly if necessary in a gale. With the aerial fleet constantly bringing up supplies I calculate that the head of the expedition should reach the Pole within three or, at most, four weeks after starting from the base of operations.

"It would be necessary to prevent the aeroplanes plying between the depots from going astray. With that object I should advise the hoisting of a big flag over each of the depots and the planting of two or three flags between them. The poles would probably have to be brought by the expedition, but bamboo is light and could be easily strapped to the framework of the aeroplane. Each flagstaff, made in two or three pieces, giving a total weight of twenty or thirty metres (65 feet or 98 feet), would be fixed firmly in the ice and held in position by wire stays. If the distance between these flags did not exceed twenty miles the mark as not to catch a glimpse of the flag in front, even if he failed to see it before losing sight of the one he would have left behind him. However, it seems to me indispensable that each detachment of the aerial fleet should be led by an aeroplane carrying not only the pilot, but a captain seated beside him to direct the course of the vessel. Without the service of a captain each aeroplane would have to be provided with a mechanism enabling the pilot to start the motor from his seat, and that would entail considerable extra weight. The aerial fleet would travel at a fair altitude above the snowdrifts and icebergs, so as to distinguish the flags and to avoid local currents. It goes without saying the aeroplanes used in those snow and ice-bound regions would not require wheels to get up speed to rise into the air, and that skis, so useful for alighting on a rough surface, would suffice. The suppression of the wheels lightening the aerial craft would enable it to carry considerable additional weight. As to the housing of the aeroplanes at the depots, I think that the construction of shelters for them would be superfluous. The aeroplanes employed for the expedition should be built in such a manner as to be easily taken to pieces and put together again, and, above all, the bearing surfaces should be made with canvas laced and not glued or sewn on the framework. It would be easy to take off the canvas and to leave nothing but the skeleton of the machine with the motor, which could be protected against inclement weather by a piece of sailcloth. The apparatus in that condition would not be injured even by a gale of wind or a heavy snow-storm, especially as it could be attached to the ground by an iron peg and a wire.

"Bold and experienced pilots would be required, and I doubt whether there are at present a sufficient number of them available for a Polar expedition. But as every day adds to the number of brave men who learn to pilot aeroplanes, time, and probably a short time, will remove that difficulty. It would be useless to attempt to indicate the best type of flying machine for a Polar expedition, because improvements are being made in aerial craft every day. The aeroplanes which were delivered to the French Government the other day flew easily during the official trials, carrying a weight of 210 kilogrammes (462 lb.), including the pilot, essence and oil. This shows that aeroplanes, even in their present imperfect condition, can transport a fairly heavy load. As for the motor, it should be air cooled, for frost would paralyze a water-cooled motor. In conclusion, I may say that it strikes me that a spot further north than Spitzbergen might be selected for the starting point of the aerial fleet. Franz Josef Land, for instance, is much nearer the Pole.

"This is but a rough sketch of my plan for what may be called the establishment of communication with the North Pole. In studying the problem thoroughly I might modify it, especially if I waited a year or two, because I am convinced that ere long aeroplanes will have been so much improved that to reach the North Pole will be a much less arduous task than it is today. I am quite conscious of the great difficulties of the enterprise, but I repeat that, in my opinion, the most practical means of surmounting them is the creation of depots on the route. The greater their number and that of the intermediary flags the greater would be the safety of the expedition and the chances of its success."

**New French Army Dirigible**  
 La Liberte, the semi-rigid "dirigible" built for the French Government by MM. Lebaudy, has had no difficulty in passing the tests required by the authorities, and showed itself in every way an improvement on the ill-fated La Republique, which before the disaster scored such a conspicuous success at the French manoeuvres. After the loss of La Republique the authorities decided not only to replace the metal propellers of the new airship by wooden ones, but also to adopt extensive modifications. The chief modifications consisted in the replacing of the single motor carried by La Liberte by two motors, and necessarily involved the laying up of the airship for an indefinite period, as, among other changes, it was indispensable to enlarge the gasbag. It was decided that, as far as possible, La Liberte should be kept ready for commission at the shortest possible notice, and that the old car with the single motor should be preserved intact, while the work of enlarging the envelope should not begin until the car and motors were ready. The motors are still unfinished, and the authorities have now decided to put La Liberte into immediate commission with the old car and single motor. The airship, which was stored at the Lebaudy Works at Moisson, has already been handed over to the military authorities and will shortly be ready for service.

**Hard on Aviators in Germany**  
 The achievement of the young German-American aviator, Robert Frey, in flying across Berlin in a Farman biplane has brought to light the amusing fact that navigation over German towns in a flying machine, like so many other things in the Kaiser's realm, is "verboten"—prohibited. It appears that Hubert Latham committed a misdemeanor when he flew from the Tempelhof Field, Berlin, to Johannisthal last autumn and had to pay a fine of \$37.50. Another aviator, the young Alsatian Jeanin, was mulcted to the tune of \$12.50 for a similar offence three weeks ago. If fines are measured by distance, Mr. Frey's violation of the law last Monday evening would cost him \$75, and Fauban's London-Manchester flight, if it had taken place in Germany, would have enriched the police treasury to the handsome extent of \$1,125. The theory of the police is that aeroplaning is still too undeveloped a science to permit men to fly about at will above the heads of law-abiding citizens. Flights for the present, therefore, are considered a danger to public life and security and are punished accordingly. The German Flying-Machine Engineers' Society proposes to petition the Reichstag for remedial legislation. The members declare that such archaic police regulations are designed only to retard the progress of aviation in Germany. Mr. Frey went to America when a young man and acquired a sufficient competence. This enabled him to return to Europe and educate himself in aviation more or less as a pastime. Another fact which has just come to light is that until the papers told of his brilliant achievement of flying across Berlin his mother in Wurtemberg did not know what he was doing.

**Prize for Smallest Aeroplane**  
 The practical utilization of the aeroplane is the object toward which the efforts of all constructors and experimenters are directed. In furtherance of the same object, the French National Aerial League offers two prizes for small and easily managed aeroplanes. One prize, offered by Rene Arnoux, through the agency of the league, will be awarded to the first aviator who shall succeed in starting from a selected road, bordered with trees, and in landing on the same road after making a continuous flight of one kilometre (five-eighths of a mile) or more. The other prize, of \$200, will be awarded to the owner of the smallest aeroplane which shall make a continuous circuit of one kilometre. The size of the aeroplanes will be estimated by multiplying together the three maximum dimensions of the machine. The competition will close July 16, 1910. A complete copy of the rules governing the competition can be obtained by addressing La Ligue Nationale Aerienne, 27 rue de Rome, Paris.

Little Brother (who has just been given some candy)—If I were you, I shouldn't take sister yachting this afternoon.  
 Ardent Suitor—Why do you say that Tommy?

"Well, I heard her tell mother this morning that she feared she'd have to throw you over."

"Henry, how do you like my new hat?"  
 "Well, dear, to tell you the truth—"  
 "Stop right there! If you're going to talk that way about it, Henry, I don't want to know!"—Chicago Tribune.

"How could Maud descend to marrying a mere circus contortionist?"  
 "She wanted a man she could twist round her finger."—Boston Transcript.

NOTES AND COMMENTS  
 (Richard L. Pock)  
**The Deputy Game**  
 The Government has not yet pointed out to fill the vacancy resignation of Mr. D. Gillespie of game warden for this district, meanwhile the duties are being performed by Mr. G. A. Beckett Terrell, deputy game warden from Vancouver, a capable officer who is already showing energy in his efforts to deter the doing of evil to our game appointment to this district of a day or two ago he has a lot of ground and reports given wherever he has been. He is from here to Sooke Harbor broods of Hungarian partridge condition, a piece of news which gratifying to all of us who are the shooting on the Island.

**The Opening of the Shooting**  
 Although an Order-in-Council shooting season has not yet been understood that it will practically as last year, and that the opening game shooting will be October 15, however, the intention to keep shooting closed except in the District.

**Summer Shooting of Wild Pigeons**  
 The few remarks in last week's page relating to summer wild pigeons brought interesting and opinions from a number of persons hereby acknowledged with facts about the reward of a thousand seem to be that this reward at the nest of the Passenger pigeon would be extinct, full information obtained on this point from Mr. Macdonald College, Quebec, however, the chance of any naturalists and sportsmen earning ward appears to be very remote, as we have here in considerable numbers through the summer and early autumn the Passenger pigeons, conclusive the extinction of which or the oppression—hence the reward. These banded or band-tailed pigeon, the title is known of them by the local must apparently be admitted, but do breed here is undoubted, but they make their nests, if indeed any nest at all, seems still uncertain suggested by some that, being to travel from one place to another the period of incubation in order sufficient food of the sort which they actually carry their eggs with place to place, laying them on a place as the top of a stump exposed heat of the sun.

This may appear extravagant to any man who has not read very many of the pages of the book of Nature, are many wonderful things revealed book no less out of the ordinary than the student of Nature is continually of new marvels in her ways of proffering children. As an example, something which I learnt for the only a few days ago, and which seem to be just as wonderful as would be the thing of eggs by a bird from place to place.

"The sand-grouse . . . are desert arid deserts, and consequently have long journeys night and morning to water. During the time the young are less their drinking water is supplied, and this in an absolutely unique After having slaked his thirst at the ary drinking pool, generally many in tant from the feeding ground and proceeds to wallow in the water a fashion of a bird dusting its plumage, until the feathers of the underparts thoroughly saturated. As soon as this attained he makes all speed back again he calls loudly to the young, who run him. As soon as he alights they thrust heads among the breast feathers and tail coverts, and drawing them through beaks, suck out the water they containing to fresh places as the supply becomes exhausted."

**SOME FREE FISHING, AND AN GORY**  
 Only too readily, alas! flock members, far off or near, whose harvest appointment, and very little else. Soft time, these mental pictures have a tendency to lose their cruel outlines, and only rigors of diaries realize how utterly barren some of the days of our pilgrimage. I am inclined to think I have found some special in this line. For some considerable time I have had, and still have, certain over a stream, fair to look upon and trout that when hooked send one aloft bank with the sensation of a tug that the bled rod and screaming reel cannot aver yet I have never landed, nor do I now to land, a single fish. Before they come net I—awake! Not to crack the wind of oral poor phrases, my river is a phantasmal illusion, and I visit it in dreams only. At the same time, it is a perfectly d



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