THE CATARRHAL PHASE.

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This article is written to support the opinion that the past fifteen years have marked a phase of specifically diminished resistance to many air-born infective processes. The qualification specific is the essence of this proposition, for it can hardly be questioned that air-borne disease has been out of hand of late, but this might well be the result of general causes rather than chiefly of a specific cause.

At a recent examination in clinical medicine held at the Royal Army Medical College the following case was shown: A robustly made man of about 30 years of age, whose life had been suddenly and completely ruined by an attack of broncho-pneumonia in 1918. A very accurate account of this man’s condition is immaterial and it is enough for the purpose to say that from the date of his illness in 1918, to the latter part of 1920, he had suffered more or less continuously from chronic bronchitis, or perhaps better from chronic broncho-pneumonia, with frequent exacerbations. This condition completely crippled him. He presented the grossest physical signs of bronchitis affecting tubes of all sizes, both lungs being choke-full of râles and rhonchi of every description. He coughed up a large quantity of sputum for which his bronchitis seemed easily accountable without necessarily invoking bronchiectasis or buried empyema, etc., to explain it. He had no fever, his tongue was clean and moist. He professed himself quite well “in himself” and looked it. The complete lack of constitutional signs contrasted forcibly with the gross and distressing degree of local disease and this paradoxical contrast seemed to lend him almost the appearance of having been bewitched.

Such a case is a severe but otherwise typical example of a latter day tendency in infective respiratory disease, the results of which must frequently present themselves to all who practise as physicians. There have invariably been two or three such cases at the Queen Alexandra Hospital of late. It would not be of particular interest to quote this case except that it conveniently introduces some remarks on the subject it exemplifies and related matters. I think also that the case was possibly given in an examination as an example of a type of failure in resolution which is gaining in importance.

While in charge of two medical wards at the Queen Alexandra Hospital during some nine weeks in the warm months of August to October, 1921, there were admitted to those wards some twenty cases of intractable bronchitis, the average age of these twenty patients being about 21 years. When I say “intractable” I do not mean that these men and boys
were all so bad as to preclude further military service, though some have been invalidated. I simply mean that these cases all presented a chronic element of failure of resolution. The majority of these even when "well" usually carry about with them some physical signs of bronchitis. The majority of them admit that they have been liable to bronchitis since boyhood. The physical standard of this small group was quite up to the average.

In this twenty I have not included some other cases of bronchitis with physical signs in the lungs, but in whom the disease was not thus chronically established, which were admitted to the same wards, during the same period, nor other similar "non-resolution" cases which have been admitted more recently since the weather became colder. During the period, August to October, 1921, moreover, we had in the Queen Alexandra Hospital a somewhat troublesome outbreak of bronchitis and broncho-pneumonia in a surgical ward of which I was temporarily in charge. During the past winter, again, the hospitals of the London area were being crowded out with influenzal illnesses, incidents in a world-wide pandemic. At the Queen Alexandra Hospital therefore, and for a matter of that at many another, infective respiratory illnesses are very prominent and puzzling.

These newly prevalent types of bronchitis and broncho-pneumonia, which fasten on the young and healthy, and never again properly leave them, are distinctly a feature of the times. They have suddenly greatly increased in number in the present century, excluding, I believe, however, the first few (about five) years of it.

It is interesting to consider the past ten or fifteen years in a little more detail from this point of view. About fifteen years ago the very striking latter-day dominance of the catarrhs suddenly established itself after having spared the first few years of the century. This began in 1906, or to anticipate for convenience, ? in the latter part of 1905. About these post 1905 catarrhs there rapidly grew up a practically new department in bacteriology, viz., the bacteriology of the common cold, its vaccine treatment, and so on.

If you will look up the index of the Lancet or the British Medical Journal, you will simply never see common cold or naso-pharyngeal catarrh mentioned before 1906. Suddenly from that date, however, you will begin to find references to articles, and even to leading articles on the subject of the common cold and its bacteriology.

Abruptly, from about that time also, the daily Press began to notice strange outbreaks of influenzal illnesses and colds, often marked by unusually profuse coryza, and to give accounts of all kinds of new-seeming catarrhal illnesses remarkable enough to interest the general public who, moreover, began frequently to have fairly good cause to take some interest in such matters.

Nothing of the kind had ever been mentioned in this way in the Press.
within memory. Epidemics of influenza had occasionally been mentioned when that disease occurred, but these year-in-year-out catarrhal affections were something new, and the whole thing marked a truly new phase and one of very sudden origin indeed.

From 1906 further began the period of the "mystery" epidemics of various kinds, the description of which has been so noticeable in the daily Press of late years. The latest examples occupied the London Press during the past winter as just mentioned. "The London fever hospitals were crowded out and cases were being turned away." The papers referred to this outbreak as the "mystery fever." Quite apart from the question of the justification for the description in this particular case it is characteristic of the times that epidemics frequently arise which often puzzle those who have to deal with them; moreover, this applies to the case of the domestic animals as well as to that of mankind.

To come to the present time, the naso-pharyngeal catarrhs have it all their own way with us. There seems to be some defect in our natural resistance to them. Half the population is subject to recurring catarrhs at all times and seasons of the year. The illustrated daily papers have for a long time past made copy out of photographs of school children doing special nasal douche practice, and descriptions of anti-catarrhal measures of various kinds. The thing is the talk of all, though we have got accustomed to it and do not give the attention to it which we might. Notwithstanding the fact that the more severe types of this naso-pharyngeal catarrh cause a lot of disability.

A short time ago, on November 11, 1921, to be exact, the principal page of a London illustrated daily paper was chiefly occupied with a strongly worded article on the subject of the common cold, in which it was seriously insisted that the disease should be made compulsorily notifiable and the cases isolated by being kept from work. I take an interest in the attitude of the daily press to these matters, and though I sympathize with those who take them seriously I thought for a moment that this particular article must be a hoax. It was clearly however seriously meant. One may not feel inclined to take this sort of thing very seriously, but nevertheless there was absolutely nothing, say, in our student days of fifteen or more years ago, that could have provided "copy" of this sort to even the most enterprising and sensational journalist, whereas to-day the journalist has every justification for emphasizing the question. The most trivial minor ailment has suddenly evolved into a regular pest.

It is an easy step from all this to a stir in the more serious respiratory infections. The war years gave the new tendency a great opportunity which it availed itself of readily. The manner in which the respiratory infections behaved in many training camps in this country was I believe somewhat unexpected. The official account however of how infective disease, respiratory and other, ravaged and paralysed several of the vast
American training camps in the last quarter of 1917 admits that this “makes disheartening reading.”

It is clear on reading the account that those responsible felt that there was an element in the case for which there was no precedent, and this not so much because some of the admission rates were very high as because resistance to infectious disease seemed in a curious state. The whole thing apparently puzzled those concerned in circumstances in which a high admission rate for infectious disease of normal behaviour would not have been surprising.

From the clinical standpoint there has been much in the post 1905 phase which points to some specific defect in the immunizing powers of the body, extravagant though such a premise may seem. According to this idea the fault lies in the weakness of the defence rather than in the strength of the attack. If it were the strength of the attack which had gained we should have to admit this accession of virulence to many of the common infective agents. This latter possibility is presumably much more difficult to account for than the former, for a weakening in the bodily resistance provides the situation with a workable common denominator.

A specific defect in the protective power of the body against bacterial invasion such as that suggested might be compensated for fairly well under normal conditions of life but proclaims itself under conditions of military concentration and national hardships.

That some influence of this kind was in existence before the war years is the essence of this thesis. Great concentrations are held capable of pretty well anything in this line and no doubt rightly so. If the phenomena in question only dated from 1914, they could be passed as not very surprising or important.

In 1906 there suddenly appears in the Annual Report on the Health of the Army a note of uneasiness in the prevalence of certain minor ailments. For instance, up to 1906 tonsillitis is never mentioned in the annual reports except to give without comment the bare figure showing its admission rates.

From 1906 to practically 1914 however, much attention is suddenly directed to the trouble and difficulty resulting from the endemicity of tonsillitis in various commands and stations.

Energetic administrative measures did not, as time went on, achieve results which were to be expected. This sudden solicitude on the subject of tonsillitis from 1906 onwards corresponds very well with the sudden new and wide-world interest in the behaviour of the common cold in the medical and other journals dating from that year which has already been mentioned.

You may consider what follows merely a coincidence, but there occurred

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in 1906, strictly to time according to this hypothesis, a clinically somewhat remarkable outbreak of non-diphtherial tonsillitis in the Duke of York's School at Dover. It is described at length in the 1906 Report and subsequent reports, for it lingered intractably in true post 1905 fashion.

It is noteworthy that the post 1905 period has been punctuated with very fatal outbreaks of septic tonsillitis in various parts of the world which have been new, clinically speaking, to those who have encountered them. For an example of this may be quoted the severe and fatal outbreaks of septic tonsillitis in various American cities which were occurring shortly before America declared war. I have seen a very fatal small outbreak in an Indian hill station, and generally such outbreaks have become not uncommon.

A somewhat curious point regarding the comments just mentioned on tonsillitis in the Annual Reports after 1905 is the fact that during the post 1905 period the admissions for tonsillitis in the British Army declined. Notwithstanding this, however, tonsillitis succeeded in making itself more obtrusive. I know, however, that among the civil population about that time throat complaints increased noticeably and it was only owing to the keen measures in preventive medicine then in vogue in the Army that the adverse etiological influence in question was unable to operate fully until later, as we shall see. No one could deny that at the present day tonsillitis
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even in the Army is worse both in quantity and severity, for at the present day this new influence persists and has defeated preventive measures in many directions, a fact which is reflected in recent admission ratios for the Services of all countries. The new catarrhal aetiology which suddenly made good in 1905 found itself opposed to the momentum of a tide of amelioration in preventable disease. None the less I believe that it made its presence felt in some measure practically from the first. Thus the figures for the upper respiratory catarrhs all over the world show anything but amelioration in the post 1905 period. Some curves relating to these conditions are shown in Chart 1. Records of these are scanty however. The effect on the major respiratory illnesses followed almost as rapidly in the general population but not to the same extent in the Army and the change here at first was perhaps one of quality rather than of quantity. Of this we naturally find nothing in statistical figures. If we turn to British naval figures, however, we see the operation of this new post 1905 influence on the curve for total respiratory diseases. Chart 2. Here there is no

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1 No figures quoted in this article include any Expeditionary Force cases of the late war.
amelioration after about 1905. Note that the curve does not flatten out gradually but is abruptly angulated after 1905. Thereafter it tends to drift upwards as respiratory diseases tend to escape from control. For the American Navy figures for respiratory diseases seem only available from 1907. The bearing of these figures on the contention that there was marked activity in respiratory illnesses before the recent war seems obvious. Chart 2. I think it possible that naval figures may be a more sensitive index to the general health of a country than are military ones.

Naval and military figures show some curious contrasts in the period under discussion; for example, the curves for diseases of the digestive system. Chart 3. The curve for deaths from respiratory diseases among the registered population of British India for the available period shows an increase which, if a real one, is striking, because it concerns such a huge aggregate, viz., 238 million people at the present time. I feel very sure that this increase in deaths attributable to respiratory diseases marks a real and world-wide increase in this class of illness. Chart 4. I consider
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that everyday clinical experience supports this opinion. No doubt the purely statistical consideration of such a question would require much study. No figures relating to morbidity for non-notifiable illnesses are available for any civilian aggregate as far as I know and so they cannot be examined. Such facts relating to the matter as are reasonably accessible support the view that the new influence that got going in 1905 was not restricted geographically as regards its field of activities.

With regard to admissions for nasal catarrh and "colds" and so on, it must be remembered that admissions under these heads were formerly very few, and their sudden increase marks, I think, a sudden increase in the coryzal element in cases which would otherwise have been diagnosed "influenza" or "bronchial catarrh" on clinical grounds. In the early post 1905 period especially, there were frequent outbreaks of febrile illnesses marked by extreme coryza. It is unfortunate that the figures for nasal catarrhal conditions for prisoners in Indian jails are not available after 1910 and I do not know how nasal catarrh affected them after that date. Chart 1. There are roughly some 110,000 prisoners annually.

[Chart 1]

There can be no doubt that respiratory infections are now much out of hand and, moreover, the tendency to this was observable for some years before the war years. The prognosis in regard to these conditions has altered very much before one's eyes in the short period of the past decade or rather more. For example the prognosis in pneumonia with regard to life seems to me, on the whole, to have become distinctly worse. The prognosis, however, in the major respiratory illnesses with regard to the proper resolution of the inflammatory process and proper recovery has become very much worse. About this I think there can be no doubt. In these days to suffer an attack of pneumonia or pleurisy or bronchitis is to run a noticeably greater risk than formerly of being permanently weakened.
to be left more or less of a lung cripple. At the present time the alteration here, both in regard to quantity and quality, is in clear focus.

For some reason our resistance to many common air-borne infections stands at a dangerously low level and our resources against them continually trench on our reserves. At one point our resistance to the respiratory infections crumpled up completely and, in 1918, a pandemic resulted which just gave us a glimpse of how such a disaster might exterminate us. There were, for instance, nearly eight million deaths in British India in a few weeks in 1918; to be exact 7,089,694, i.e., 29.7 per mille of the population. The amount of disability short of death is not recordable.

If objective example is needed of how the major respiratory infections were increasing independently of the Great War and its upheavals in the countries concerned, we may notice the soaring death rates for pneumonia in nearly every State in the United States of America in 1915. The pandemic was no accident of a bad health year, nor a pure result of war conditions.

If there has been a new adverse influence abroad of late years it certainly has not been in any way restricted to highly civilized countries, but has affected equally countries uninfluenced by civilization as regards general mode of life, diet, etc.

Environmental and nutritional defects resulting from city life and similar considerations have no direct say in this new phenomenon which has been produced entirely by zymotic disease.

To the hypothesis here outlined there are various criticisms which will at once occur to anyone interested in such matters and which may be at this point touched on. You may say that the few figures quoted do not of themselves certainly indicate such an abrupt onset of the hypothetical phase as I premise. As to that, there may quite well have been some kind of prodromal period, but, in my opinion, the thing matured suddenly as described and I will shortly give in more detail my reasons for so thinking.

One may also feel inclined to suppose that the position at the present time must indeed be the aftermath of war and its epidemics. I think, however, that the view is tenable that the war only exaggerated very definitely pre-existing tendencies.

These opinions have also been criticized as follows: That the suddenness of the origin of the new phase (here premised as beginning after the first few years of the present century had elapsed) is indefinite, and that whatever is admissible re an unsettled state in infective disease is to be largely attributed to ever-increasing facilities for travel and intercommunication bringing non-immunes into contact with foreign strains of infection. Without any doubt this consideration is an important one, and this has I believe been often proved. As mentioned above, however, I shall give reasons for believing in the sudden origin of the bad phase and to me therefore there seems no reason why increasing intercommunication, etc.,
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after being well tolerated for many years, should suddenly turn round and deal with us in this new fashion.

I believe that the post 1905 influence came to reverse the falling tide of admission and death-rates all over the world in about 1913 and that this effect was merged in the great war. In Chart 5 are three curves particularly illustrating this, and a fourth that for the American Navy, which illustrates the post 1905 activity in the figures for total diseases. There is, however, little to be argued with any confidence from these figures on their own merits, and the fact that this effect was not statistically regis-

![Chart 5](chart.png)

**Chart 5.** Total admission rates.

- British Army, India (all causes).
- Native Army, India (all causes).
- American Army in U.S. (disease only).
- American Navy, total force. Admissions and readmissions (all causes).

Note 1.—No expeditionary force cases of the late war are included in the above.

Note 2.—America became a belligerent in the late war in April, 1917.

tered earlier than 1913 is if anything rather an argument against these views. I will venture to prophesy that the present comparatively high admission rates for the Services will prove difficult to reduce; here again you may say that it is not to be expected that they should be anything but considerably higher than pre-war rates for various obvious reasons. Had the war not intervened I think that the course of the curves in some of these charts would have been interesting indeed. As it is
American figures up to 1916 inclusive owe nothing to the late war and illustrate something of what I mean.

Again while on that point, a comparison of the admission and death-rates for any of the services of this and other countries to-day with those of thirty or forty years ago shows that the ratios have steadily decreased in recent years. On this count alone you may say that the suggestion of any grave defect in the general health becomes untenable, or even absurd. And yet we live at a time when the general average of health has been emphatically stigmatized as being deplorable by the authorities concerned with the National Service Boards, not only in this country but also in America, and I believe elsewhere besides. In this country, as a matter of fact, these boards were instituted somewhat late and the men examined were not properly representative of the men of military age of the United Kingdom. As far as could be ascertained, however, only one man of military age in three was fit for general service. This bad general average was not confined to those working at admittedly unhealthy occupations, though naturally it tended to be worst among them. On the whole, it extended indiscriminately to the whole bulk of men examined and for this reason, no doubt, it was regarded so gravely.

The new endemicity of the respiratory infections, the new periodontal disease and gingivitis,¹ the latter day upward leap of surgical acute abdominal disease and other signs of the times do something to negative the satisfaction to be derived from the study of vital statistics.

(To be continued.)

¹ Vincent's disease is inexplicably prevalent on the Continent. A number of German writers have commented on it, and many deny that the late war is to be considered responsible for it.