

Editorial

RECENT STUDIES ON "THE COMMON COLD"

TWO articles appearing in the current issue of the *Journal* serve to focus anew our attention on that most annoying of the minor maladies—"the common cold". In one Dr. H. P. Wright and his colleagues¹ detail some experiments in regard to the influence of large doses of vitamin A in producing immunity to a number of infections of the upper respiratory tract, including "the common cold", and in the other Dr. R. Vance Ward² gives his experiences with certain vaccines administered with the object of preventing colds and other respiratory troubles, or, at least, ameliorating them.

The common cold is so common that we are apt to pass it by with a contemptuous gesture, unless, of course, we are the sufferers ourselves. Then we have the conviction borne in on us that the affection is not one to be trifled with. Apart from the discomfort entailed, a cold usually passes off quickly without leaving any serious aftermath. Yet, repeated colds may lead to bronchitis, emphysema, otitis media, and infection of the various sinuses, to say nothing of tuberculosis. The subject, too, has an economic bearing, for Dr. Ward finds that forty per cent of the absences from work owing to illness are attributable to colds even in normal times. The common cold, then, is worthy of serious investigation. That it has not received more attention is probably due to the facts that the affection is transient, is borne with as a trifling and passing evil, and no deaths are the result of it, at least immediately. When investigation has been undertaken it has served to shew that many various and variable factors enter into the problem, constituting it the veritable will-o'-the-wisp of clinical research.

The common cold is presumably due to infection and here, at once, the first difficulty arises. Many different germs are present in the nasopharynx and upper respiratory

passages, among them *M. catarrhalis*, streptococcus, pneumococcus, *B. Pfeifferi*, in cases of cold, but any or all of them may be present in the normal throat. Accordingly, since any of these microorganisms is competent to set up an inflammatory process it is hard to incriminate any one as the specific cause of a cold. Indeed, it may be that a cold is due to a malign combination of several. Under such circumstances the search for the cause is much like the proverbial looking for a needle in a bundle of hay.

Recent, most important, work on the vitamins has shewn that a deficiency of vitamin A lessens the resistance of the animal body to infection, and, following up this idea, Dr. Wright and his associates have studied the influence in children of diets specially rich in this vitamin. They divided the children under observation into two groups, those who were fed on the usual diet of the hospital, which, of course, contained some vitamin A, and a second who received a diet in which large amounts of the vitamin were present. They could not satisfy themselves that the additional vitamin had any appreciable protective value insofar as colds and associated maladies were concerned.

Dr. Ward selected a number of industrial workers who were specially liable to respiratory disorders and inoculated them with certain well-known stock vaccines in the hope that colds and other infections of the respiratory passages might be prevented. A control group was also studied. He thinks that a certain amount of protection was obtained from the use of the vaccines, though, curiously in a group studied in 1930-31, the number of days that the workers were off work was increased. There are, however, a goodly number of persons on whom the vaccine has no effect whatever. In view of the conflicting opinions that have been expressed on this phase of the subject, we may safely conclude that the matter is not yet settled. That the results of preventive inoculation are not better is not surprising when we remember that the

1. WRIGHT, FROSST, PUCHEL AND LAWRENCE, *Canad. M. Ass. J.*, 1931, 25: 412.

2. WARD, *Canad. M. Ass. J.*, 1931, 25: 408.

specific cause of colds is not yet established beyond peradventure and that the vaccines employed have been of the "gunshot" variety.

The idea that colds are due to a filterable virus has been gradually taking root since Kruse³ advanced it in 1914. This observer took the nasal secretions of persons attacked by natural "colds", passed them through a Berkefeld filter, and introduced small amounts of the filtrate into the nasal passages of previously healthy persons. He was able in this way to reproduce the features of the common cold. This observation was confirmed by Foster⁴ and Olitsky and MacCartney⁵. In the case of all the positive experiments a Gram-negative anaerobic bacillus, of the type described by Olitsky and Gates⁶, was recovered from the filtrate, and the suggestion immediately rose that this organism might be the specific agent that was being sought. However, in a later study, Shibley, Mills and Dochez⁷ reported that they had found a Gram-negative bacillus, like that described by Olitsky and Gates, in a majority of the filtrates derived from the nasal secretions of normal persons, and that they had been unable to infect apes by the intranasal inoculation of such filtrates. This led them to believe in the existence of a filterable virus in the nasal secretions of those suffering with colds. Apes were used because it was found that they were susceptible to the action of nasal filtrates from human patients with colds, while the ordinary

laboratory animals did not manifest typical symptoms under the like circumstances. The experiments of Long and Doull⁸ confirm and extend the observations of Kruse, Foster, Olitsky, Dochez and the others that the common cold is due to a filterable virus. More recently still, Dochez, Mills, and Kneeland⁹ report that they have been able to cultivate the virus on a suitable medium, that it may survive several passages, that it is capable of growth, and may live as long as seventy-four days *in vitro*. The culture method adopted by Dochez and his collaborators was the Li and Rivers modification of the Maitland technique. The final dilution obtained from the original material was so great (1:1,000,000,000,000) as to rule out the presence of any significant amount of the original virus. In all this work proper controls were made use of.

Such evidence is strong, and should it be finally settled that the common cold is due to a filterable virus, we may be on the way to a scientific handling of the common cold. We will have a definite causal agent to work with, and, in view of the favourable experience derived from the use of other filterable viruses in the prevention and amelioration of certain other diseases, such as small-pox, varicella, measles, infantile paralysis, and foot and mouth disease, we may hope yet to obtain a more potent vaccine than has hitherto been employed. It remains to be seen whether this is possible, and whether, also, an important point, the immunity produced by such a vaccine is sufficiently lasting to make it of real value.

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3. KRUSE, *Munch. Med. Wchnschr.*, 1914, 61: 1547.

4. FOSTER, *J. Am. M. Ass.*, 1916, 16: 1180.

5. OLITSKY AND MACCARTNEY, *J. Exper. Med.*, 1928, 38: 691.

6. OLITSKY AND GATES, *J. Exper. Med.*, 1922, 36: 501.

7. SHIBLEY, MILLS AND DOCHEZ, *Proc. Soc. Exper. Biol. and Med.*, 1929, 26: 59 and 562.

8. LONG AND DOULL, *Proc. Soc. Exper. Biol. and Med.*, 1930, 28: 53.

9. DOCHEZ, MILLS AND KNEELAND, *Proc. Soc. Exper. Biol. and Med.*, 1931, 28: 513; also, *The Lancet*, 1931, 2: 547.

STATE MEDICINE

THAT the medical profession of the Maritime Provinces are sensing the stirrings of State Medicine may be assumed from the attention given to that subject in the Presidential addresses of Dr. R. W. L. Earle, President of the New Brunswick Medical Society, and Dr. Dan Murray, President of the Nova Scotia Medical Society.

Doctor Earle refers to a problem which will have to be solved, "one whose shadow

is already falling across our pathway, namely, State Medicine". He points out that whereas in the past there was a willingness to "await in silence for the more material rewards", this attitude has changed and "medical service to-day demands money and this is as true of the rural practitioner as of his urban colleague".

In his address, Doctor Earle discussed the effects of State Medicine, quoted Dr. George