The following are the rules enforced with regard to ventilation and air flushing:

The openings provided for ventilation must always be kept freely open, being regulated in accordance with the weather, but they shall never be entirely closed.

Apart from ventilation openings, during play intervals the windows on all sides of the class-rooms must be freely opened for at least five minutes, and immediately following the morning and afternoon attendances the windows must be kept freely open for at least fifteen minutes and thirty minutes respectively.

Apart from the ventilation openings, it should be the routine practice while the class-rooms are actually occupied to have the windows as freely open as the weather permits.

To determine whether the theoretical advantages claimed for the pavilion type of school over the central hall type can be substantiated by practical experience, certain tests were applied to the pavilion school and to three central hall schools. Of the three central hall schools visited for comparative purposes, one (b) had no artificial means of ventilation, but simply hopper openings and swing casements in the large side windows, also smaller windows with swing casements and hoppers high up on other outside walls where such are available, and dormer windows with swing casements opposite to the large side windows, and, of course, above the roof of the central hall. In addition there are large ceiling openings, but these simply communicate with the ventilated roof space, and are not connected with shafts passing through the roof. In the case of the central hall school (c) the conditions are practically identical, with this exception, that the class-rooms have outlet openings connected by ducts to a special furnace extract. Central hall school (d), on the other hand, is a plenum-ventilated school with, of course, completely sealed windows. The test applied was: (a) The amount of added carbonic acid (CO_2) as the result of respiration after one and a half hours' occupation of the class-room. (b) Records of external and internal temperature and of the relative humidity of the outside air and the class-room air after occupation. (c) The behaviour of smoke when discharged in large volume into the classroom. The quality of the air of the pavilion school in relation to respiratory carbonic acid was found to be immeasurably superior to that of any of the others, and was better in the class-rooms in the pavilion school without a ceiling ventilation than in those with it. The temperature records, owing to a misunderstanding, were imperfect, but the smoke test gave particularly striking results. In the pavilion school, in the class-rooms with and without ceiling ventilation the smoke cleared away in ten minutes, and it was observed that the incoming current of air took a vertical course, clinging in most remarkable way to the upper part of the window up to within 5 ft. of the ceiling, when it began to spread fan-like across the room, to be gathered up again as it approached the opposite wall, when it descended to the exit hoppers, thus describing a semi-circle across the room. This semicircular and relatively rapid current appeared to draw towards it minor currents from below, and thus without any feeling of draught being experienced the entire air of the room was changed at the rate of six times an hour. This experiment is of interest as showing that in spite of the lowness of the hopper openings no draughts were produced, a result which it was feared might be brought about. In the case of the central hall school, in one experiment with a high gabled window as well as a ceiling opening, and the window hoppers all full open, the smoke cleared away in twenty minutes; in the second experiment, with gable window closed, in forty minutes. In the third, with both the gabled window and the ceiling opening closed and only the hoppers open, a condition very often found in practice, the room was still full of smoke at the end of one and a half hours, and Dr. Reid estimated that it would not entirely disappear for about an hour and a half longer.

With regard to cost, although the subdivision into blocks in the pavilion system is calculated to add to the cost, on the other hand one detached hall takes the place of three central halls, and this is an economy. The actual mean cost per head in the case of the three pavilion schools so far built in Staffordshire is £10 10s., as compared with £15, the mean cost of the central hall schools previously built.

SUMMARY OF CONCLUSIONS.

The following are the general conclusions formed by Dr. Reid from his observations and experiments:

1. If the central hall type of building is to be maintained, it is only by employing mechanical means that anything approaching adequate ventilation can be secured, and even with such means the result is not satisfactory.

2. From the point of view of administration it does not appear that the substitution of one detached hall for three central halls presents any difficulties.

3. As regards the lighting of a class-room, there does not appear to be any objection to providing windows on opposite sides in order to allow of cross ventilation.

4. Given adequate and properly arranged openings on opposite sides and about 6 ft. from the floor level, there appears to be no need for other specially constructed ventilation openings either in the ceiling or elsewhere.

5. The area of ventilation openings which until lately was specified in the memorandum of the Board of Education is quite inadequate, and if properly arranged the size of such openings may with impunity, as regards draughts, etc., be greatly increased.

6. The single-story pavilion school with detached hall, as compared with the central hall school, is a far less costly type of building, and, having regard to the need for mechanical ventilation in the latter case, the administration charges are also much lower.

THE ABBOTT VERSIMETRIC CHARTS FOR THE CONVERSION OF METRIC INTO ENGLISH MEASURE.

BY
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The necessity for a ready method of converting metric into English measure arose in connexion with the new medical inspection of school children, but it had long been recognized in dispensaries. Mr. T. W. Abbott has accordingly, at our suggestion, designed a series of charts, now published for the purpose by the Medical Agency, Watergate House, Adelphi, W.C.

The principle is simple. Take, for example, Chart II; Linear 6 ft. 3 in., or 75 in., are equal to 190.5 cm. A square is ruled. The base is marked off in English measure—feet and inches; the sides in metric measure—half-centimetres. Vertical and horizontal lines are ruled across the square to correspond respectively to the English and metric subdivisions. A diagonal line between opposite corners of the square indicates, by a simple proposition of Euclid, the points of coincidence of the two scales. One corner of such a chart, condensed by reduction for the sake of space, is here reproduced.

Portion of Chart II.

In practice it is only necessary to find the given height along side or base, carry the eye along a straight line to the diagonal, and thence at right angles to base or side, in order to find the equivalent. As for heights, so for weights, 12 st., or 163 lb.=76.2 kilos, and the square is ruled accordingly.

The usual requirements for medical inspection of children have been included in the charts prepared for this purpose—IX, anthropometric (weight); X, anthropometric (height)—weights only from 28 lb. to 168 lb. (12.7 to 76.2 kilog.), heights from 27 to 69 in. (68.58 to 175.26 cm.), subdivided only into pounds and half inches.

Use by School Medical Officers.—(1) Every school medical officer, who has to compile averages, will do well to have copies of these charts in front of him when he is translating the metric averages into English for his annual report. (2) The constituent figures, if he has his way, will reach him already in the metric scale. For this purpose the measurements must have been either recorded originally by the inspecting school medical officer in metric measure, or translated from English into metric before being sent on to the chief school medical officer, who has to compile the averages and prepare the annual report. This translation into metric measure will require copies of the charts to be kept with the school register or record cards, or in the inspecting officer's study. If, however, the figures are sent to the chief school medical officer in English notation, he will probably find it best to record them as they arrive at his office in terms of the metric scale by use of the versimetric chart, although officers for small authorities may prefer to leave all such work until the averages and report have to be compiled.

Educational Use.—The matter, however, is of further importance. Owing to the increasing opportunities and needs of international communication, instruction in the use of metric measures in this country is becoming essential. Every child should become familiarized with the metric scale. Education authorities might well, therefore, hang copies of this chart on the walls of their school rooms; and children might be employed in reading off the translation of their own measurements from one scale into the other at the time of their medical inspection, which proceeding will thus acquire an immediate educational value.

Use to Physicians.—The principle of this versimetric chart will find useful scope in various departments of medical life. The publishers already issue charts for measurements from zero up to 280 lb., and up to 6 ft. 3 in. for use in the bathroom, consulting room or hospital, or in the recruiting offices and secondary schools, and a chart for thermometric conversion. The charts for the conversion of milligrams into fractions of a grain and grains into grams will also be found of great use to the busy prescriber who follows Continental literature where the doses are invariably given in metric weights.

Use in Scientific Laboratories.—The annoyance to the research worker of original articles in foreign languages, dealing with the measurements of all sorts in various scales, will be largely overcome by versimetric charts, ruled in such detail and within such limits as may be required by the nature of their work.

Commercial Use.—The scope of these charts for commercial purposes must be as wide as the whole country's field of trade in metric markets. That, however, is no concern of this notice or of its writers.

Use in the Dispensary.—In pharmaceutical and prescription work it is impossible to overestimate the extreme utility of these charts; moreover, they arrive at a very opportune moment, since the two systems are at present in use. Hitherto the use of the metric system in this branch of knowledge has made but slow progress, but that progress has been made is on all sides evident. Thus the last edition of the *British Pharmacopoeia*, published as long ago as 1898, gave side by side in the various formulæ the weights and measures in the imperial and the metric system, and it was left to the pharmacist to use whichever he preferred. The *British Pharmaceutical Code*, published in 1907, has adopted the plan of presenting all its formulæ in parts per hundred, and this has practically made it imperative to use the metric system. The doses are also given in the metric system. What was wanted to reconcile the two was some method whereby one could think in the two systems. Such a want is supplied by the versimetric charts. It can be seen at a glance what are the equivalents of, say, an eighth of a grain, $4\frac{1}{2}$ mg., 700 millimetres or cubic centimetres in the opposite standard.

The present charts are issued at 1s. each (*plus postage*),

printed on stout Japanese paper, 15 in. by 18 in., and mounted on a small wooden roller, so as to roll up into a scroll 18 in. long and $\frac{1}{2}$ in. thick.

INEBRIATE REFORMATORIES.

THE LANCASHIRE INEBRIATES REFORMATORY.

In his report for the year 1907 Dr. Gill gives a lucid and scientific account of the work done in the reformatory. The inmates numbered 128. Only 2 cases were committed under Section 1 of the Inebriates Act—that is, upon indictment. It is difficult to understand why more criminal inebriates are not dealt with by committal to a reformatory, since the cost of these cases is borne, not by the local authorities, but by the State.

Dr. Gill points out that women sentenced for cruelty to children under Section 1 usually do well. He points out also the difficulties of getting inebriates committed to reformatories at all in the present unsatisfactory state of the law, which gives them every chance to evade committal.

Four inmates were sent during the year to asylums for the insane. Of one of these Dr. Gill writes: "Had this poor creature been dealt with under the Inebriates Act seven or eight years ago, assuming that she qualified, she probably would not have been in a lunatic asylum to-day, with no prospect of ever leaving it."

Of the conduct of the inmates Dr. Gill says: "Allowance has to be made in favour of most, and punishment for misconduct meted out in proportion to their degree of responsibility." Three inmates were transferred to the State Inebriate Reformatory for refractory conduct.

The industries in the reformatory have a wide range, from bundling firewood, and farm and field work, to Turkey rug making, dress and lace making. A few inmates, previous to discharge, are allowed to go out working in the neighbourhood, and this system of probation has proved a remarkable success. Out of 54 liberated 20 are known to be doing well.

Dr. Gill gives an interesting table showing the sums of money which fifteen Lancashire towns derive from liquor licenses, and what a trifling sum is spent by these towns on the reclamation of their inebriates—about 0.56 per cent. of their combined income from the sale of drink.

A graphic account is given in the report of the insane and imbecile types of women, who include a large proportion of the inmates of the reformatory. Their lack of moral sense is clearly shown. There is also some account of the better, saner, class of cases, who, if they had been taken in hand earlier, might have reformed.

Those who are interested in the treatment of inebriety cannot do better than read Dr. Gill's report, which shows very fully the real nature of the problem of inebriety, and the methods demanded in dealing with it. These latter do not include dosing with so-called specific remedies, as Dr. Gill is careful to remind us.

BRENTRY CERTIFIED REFORMATORY.

The report for the year 1907 of Dr. Fleck, Superintendent of this reformatory, shows that 147 women and 179 men were under detention. Of the women admitted 64 per cent. were over 40 years of age, while 68 per cent. of all admissions were mentally unsound persons. The youngest woman inmate was 24 years of age and the youngest man 21.

Dr. Fleck divides his inmates into the following groups:

- (a) Congenitally defective, 16.
- (b) Acquired mental defect, 57.
- (c) Fair mental capacity, 34.

As regards the results of treatment Dr. Fleck takes every care to place the inmates on discharge under adequate supervision. He then endeavours in all cases to obtain periodic reports of their progress. Out of 57 cases, 25 are reported as doing well, and he instances a number of patients who are doing well after having been discharged for two or three years. The male industries include carpenter's and smith's shop, and, considering the unfavourable material, the results of instruction are most commendable, some highly skilled work, such as wagon building, being carried out by men who for years previously had done no work through drink. Dr. Fleck reports that the industries on the female side of the reformatory