to have their children home, provided they can ensure reasonable separation. The thinning of the ranks of the school might have a beneficial effect in checking virus spread.

Iron for Anaemia

Q.—*Does it matter whether iron tonics are taken before or after meals? Is it advisable to give acid with iron, and, if so, is glutamic acid any better for this purpose than hydrochloric acid?*

A.—Iron tonics have no place in rational therapy unless there is clear evidence of an iron-deficiency anaemia. Correct diagnosis usually requires a full haematological investigation. When treatment with iron is thus indicated, it is preferable to use preparations of ferrous iron, and these should be given after meals to avoid or reduce the side-effects of nausea and other gastro-intestinal disturbance due to the irritant action of these substances. There is no evidence that the taking of acid with the iron preparation increases the rate of regeneration of haemoglobin, the average daily increase to be expected from adequate amounts of iron being of the order of 1%.

The two most suitable oral preparations of iron are tablets of ferrous sulphate (3 gr.—0.2 g.) or iron and ammonium citrate (30 gr.—2 g.) in a fluid mixture, given thrice daily after food.

A Milli-equivalent

Q.—*What exactly is a milli-equivalent? What advantages has it as a unit for use in biochemical work?*

A.—A milli-equivalent (mEq) is that amount of a substance which is capable of reacting with or releasing, directly or indirectly, 8 mg. of oxygen. In water 2 atoms of hydrogen are combined with 1 atom of oxygen of atomic weight 16. Therefore 1 atom of hydrogen (1.008 g.) is equivalent to 8 g. of oxygen; 1 atom of hydrogen is 1 "equivalent," and 1 "milli-equivalent" (1.008 mg.) equates with 8 mg. of oxygen. In hydrochloric acid 1 atom of hydrogen is combined with 1 atom of chlorine, and therefore 1 milli-equivalent of chlorine (or chloride) is that number of milligrammes represented by its atomic weight—that is, 35.5 mg. An atom of chlorine is combined with an atom of sodium in sodium chloride, and a milli-equivalent of sodium is therefore 23 mg., while a milli-equivalent of sodium chloride is 23 + 35.5 = 58.5 mg. Similarly, in sodium bicarbonate ($NaHCO_3$) the milli-equivalent of carbon dioxide in the bicarbonate ion, HCO_3^-, is 44 mg. or 22.4 milli-litres of the gas CO_2 at standard temperature and pressure. For other substances one can calculate the amounts which react, in one way or another, with 1 milli-atomic weight of hydrogen (1.008 mg.) or half a milli-atomic weight of oxygen—that is, 8 mg.

In chemical reactions involving neutralization between acids and bases, and in oxidations and reductions, it is particularly convenient to think of the reactants in terms of equivalents or milli-equivalents. Thus in studies of acid-base balance it may be an advantage to express concentrations of plasma constituents which act as acids or bases in terms of equivalents, so that the "total acid" of the plasma may be compared with the "total base." In this way it can be seen if the concentrations of basic and acidic constituents add up to "balance," or if there is a preponderance of acid over base or *vice versa*—that is, whether the acid-base balance favours an acid or an alkaline state. Concentrations of the acid radicles (chloride, carbon dioxide (bicarbonate), phosphate, sulphate, proteins, and organic acids), and of the basic (sodium, potassium, calcium, magnesium) are therefore calculated as milli-equivalents per litre of plasma; the equivalent, that is, of the amount of acid or base which they represent or are capable of neutralizing. With simple monovalent ions like sodium and chloride the mg. per litre are divided by the atomic weight; with divalent ions—for example, calcium—by half the atomic weight. With plasma proteins, which act as weak acids and neutralize a certain quantity of base, one can express their concentration, as one would for an acid, in terms of the amount of the base they neutralize. The concentration of protein (in mg. per litre) is divided by the average equivalent weight of the plasma proteins—that is, by that fraction of their molecular weight which represents the amount which would neutralize one milli-equivalent of sodium hydroxide—that is, 1 litre of $N/1{,}000$ NaOH. For this purpose a factor is used—that is, g. protein (per 100 ml.) × 2.43 = milli-equivalents per litre.

Chemotherapy of Primary Tuberculosis

Q.—*What is the prevalent opinion on the chemotherapy of primary tuberculosis in children? This question is from India.*

A.—The general opinion in Britain is that chemotherapy has little effect on primary tuberculosis in children. This is probably because the main manifestation of primary tuberculosis in children is hilar glandular enlargement, and on this chemotherapy appears to have little effect. In the unusual cases where there is progression of the pulmonary component of the complex chemotherapy will be effective. Although, as mentioned, most authorities agree that chemotherapy has no dramatic effect in most cases of primary tuberculosis, it is not excluded that there might be some effect. In particular, the effect on the incidence of serious complications, such as miliary tuberculosis or tuberculous meningitis, or on later relapse of the tuberculosis, has not been seriously studied. It may be that the relative lack of effectiveness of chemotherapy in children of European race may not be paralleled in other races. A limited personal experience with young adult Indians with hilar glands enlarged as a result of a primary tuberculous infection suggests that these cases may respond well, and even dramatically, to chemotherapy.

Inheritance of Multiple Neurofibromatosis

Q.—*How is multiple neurofibromatosis (von Recklinghausen's disease) inherited?*

A.—Von Recklinghausen's disease is usually ascribed to a dominant gene, and this appears to be true of the bulk of the published cases. Fertility is considerably reduced, however, and in view of the incidence of the condition in the population the frequency of mutation is probably high. Skipping of generations also seems to occur commonly. This may sometimes be because there is much variability in severity, and slightly affected persons may be overlooked; it is also likely that the gene may not manifest itself at all on occasion. It is possible, though not proved, that in a small proportion of instances a recessive gene is responsible.

Correction.—In an answer to a question on "Stress and Arterial Disease" (*Journal*, November 7, page 1057) there appeared a statement on the attitude of the Ministry of Pensions and National Insurance. The Ministry writes: "This statement could be misleading. As a result of experience, it is not the general policy of the Department to admit aggravation of hypertension."

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