

will emit a musical note which at first with each succeeding note will become lower. I usually count four or five notes—less than an octave. When a certain point in the solution is reached the reverse takes place, namely, that the musical notes will become higher and higher until the solute is entirely dissolved or reaches a point of saturation. I repeated the experiment a number of times and found that between the first contact of the above solute with the solvent until solution or saturation has been effected I could distinguish a change in the scale about three or four octaves. Salt, sodium citrate and ammonium chloride will produce the same effect while undergoing solution. Sugar and sodium phosphate does not produce any difference in the musical notes whatsoever.

Further experiments with Epsom salts disclosed, to my surprise and astonishment, the fact that there are in the market two kinds of Epsom salts; one which will emit musical notes during the solution and another will not. Whether there is a difference in the crystalline form of these salts I do not know. It reminded me of the story of Pasteur's work on the asymmetry which characterized the tartrates of many substances. I have demonstrated this phenomenon before many physicians and druggists and none of them, they all assured me, have ever noticed it before.

Have I been the first man to hear these sounds? I dare not presume that this simple phenomenon has never been observed before. I wonder, however, whether the research workers on the subject of "Solutions" have utilized this acoustic phenomenon in their work and whether there is any literature on this subject. The available literature in our public and medical libraries has no reference to this subject. If my observations are correct, then a new field for research is open for investigation.

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QUOTATIONS

THE MARCH TO HEALTH

THE decennial supplement of the *Registrar-General* contains a new national life-table for England and Wales. This table is the work of the government actuary, Sir Alfred Watson, and is based on the figures of the population returned in the 1921 census and on the average number of deaths recorded in the three years 1920, 1921 and 1922. The new table confirms the opinion which is generally held, that "the vitality of the nation has been steadily improving." A rough measure of the improvement is afforded by a comparison of the "expectation of life" as indicated in the life-tables of 1906, 1911 and 1921 (the new table), respectively. In 1906 a male child at birth had an expectation of life of 48.53 years. In 1911 the ex-

pectation of life at birth had risen to 51.50 years. The new table gives an expectation of life of 55.62 years. The figures relating to female children at birth are, respectively, 52.38, 55.35 and 59.58. It is pointed out in the report that improvement in the rate of mortality is specially marked at the youngest ages. The probability of a child's dying in the first year of life, for example, has decreased by about forty per cent. during the fifteen years between 1906 and 1921. Curiously enough an appreciable deterioration has occurred in the rate of mortality of women between the ages of eighteen and twenty-seven. This deterioration, however, does not affect married women. It may be that, in recent years, young women have been engaging in tasks which impose too great a strain upon their physical constitutions; in any case, it seems possible that woman's place in the industrial and commercial worlds can not be determined solely by woman's enthusiasm to enter and share these worlds. A further commentary on woman's strength as a worker and wage-earner may possibly be afforded by the fact that rates of mortality are invariably heavier among widows than among single women or wives. The report deals at considerable length with mortality in different geographical areas of the country and confirms the prevailing view that the rate of mortality varies both with the geographical distribution of the people and with the density of the population. But of these two the geographical is the preponderating influence. In all the areas examined the difference between the death-rate of county boroughs and that of rural districts is greater among males than among females, but the point is emphasized that this difference does not appear to be due to the greater strain of working conditions to which men are subjected, but to the relatively favorable mortality experience of the male population of rural areas. The healthy conditions of country life, in other words, are enjoyed to a greater extent by men than by women, whereas in towns the two sexes are subjected, as a general rule, to the same kinds of conditions.—*The London Times*.

SCIENTIFIC BOOKS

Fogs and Clouds. By WILLIAM J. HUMPHREYS. Baltimore, The Williams and Wilkins Company, 1926. 98 pp. of text, 93 illus.

OF the text, one may enthusiastically say that if laymen could avail themselves of the privilege of reading Dr. Humphreys's lucid account of how these fogs and clouds come into and pass out of being, of the everchanging play of atmospheric processes that control their everchanging forms, a widespread intelligent interest in them might soon be expected. The book is in its author's best style. There is about

the descriptive matter often a deftness of touch which is altogether delightful. This is a "popular" work; but it suffers from none of those elements of vulgarization that too frequently creep into the "popular science" writing of this day. It is a book to be heartily commended to the teacher who strives for scrupulous accuracy in the non-mathematical presentation of scientific things.

The publisher says on the jacket of the book that it contains "the largest and finest collection of cloud photographs ever presented in one volume." One must express surprise at this encomium. The illustrations are good, on the whole; some of them are very good; a scant few of them possess the almost stereoscopic loveliness in the halftone rendering of form and depth and distance, which is an outstanding characteristic of some recent foreign cloud books.

The clouds presented as types are in a few cases disappointing. It would be difficult indeed for all to agree on the choice of the picture intended to illustrate a given type. For instance, Figure 33, "Strato-cumulus, Roll Type," seems to the reviewer to present nothing more than a good cumulus cloudscape with the usual receding glimpses of the bases of ever more distant clouds. The well-formed cumuli in the nearer distance appear to indicate that conditions weren't right for roll-type cumuli just then. The strato-cumulus in Figure 34, on the other hand, could scarcely be finer. Figure 41, "Cumulus," pictures very prettily the grounds of the U. S. Department of Agriculture in Washington. In Figure 42 the sky is quite too crowded with irregularly disposed cumulus bases to leave any just impression of the *en echelon* arrangement it was desired to portray.

Such comments relate after all, however, to failings which are not of major importance. One will have to go far to find a volume more serviceable to its purpose, or better adapted to making us familiar with the names and habits and vagaries of form of these transient visitors to our skies.

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SPECIAL ARTICLES

THYROXIN AND COAT COLOR IN DILUTE RACES OF MICE AND RATS¹

IN the course of investigations of thyroid function, begun in 1921 on the domestic fowl, one of the most striking effects of experimental hyperthyroidism to

¹ This inquiry was aided by a grant from the Carnegie Institution of Washington. The stock used was obtained through the kindness of Dr. W. E. Castle and Dr. M. R. Curtis.

be observed was the darkening of the plumage in such pigmented races as Rhode Island Reds, Barred Plymouth Rocks, Silver Campines and Brown Leghorns.² The addition of desiccated thyroid to the dietary of growing chicks, and the parenteral injection of thyroxin itself, led quickly to an increase both in quantity and extent of plumage melanins. This not only revealed a definite influence of the thyroid hormone on melanin production in these birds, but suggested a possible means of exploration by thyroxin of the pigment-forming mechanism itself, not only in birds but in mammals as well.

Accordingly, experiments were begun on several color varieties of mice and rats. Representatives of six varieties of mice, namely, piebald, pink-eyed, chocolate, dilute chocolate, dilute black and albino, and one variety of rat, namely, dilute black-hooded, received systematic abdominal injections of thyroxin. The dose for all ages was approximately 1 mgm. of thyroxin to every 500 grams of body weight, administered at intervals of three or four days. Interest centered chiefly about the behavior of naked or nearly naked young, to which thyroxin could be given as the coat developed from birth onward. When adults were given thyroxin, a patch of hair was clipped from the rump in each case.

In sharp contrast with the response of the domestic fowl, the administration of thyroxin under the conditions of the experiments produced no effect whatever on the coat color of the rats and mice, young and old. The facts will be sufficiently established by a brief review of four typical experiments.

1. To 5 dilute chocolates, 2 dilute blacks, and 6 piebalds, all well grown, thyroxin was administered as follows:

June 28	.03 mgm. each	
30	.03 " "	
July 2	.03 " "	
5	.04 " "	Hair clipped from area on rump.
9	.04 " "	
14	.05 " "	
16	.05 " "	
19	.05 " "	
21	.05 " "	
23	.05 " "	
26	.05 " "	
28	.05 " "	
30	.05 " "	
2	.05 " "	
6	.06 " "	
9	.10 " "	Injectons discontinued.

In none of these animals, either during the period

² Anat. Rec., xxiv, 395; Proc. Soc. Exp. Biol. Med., xliii, 536; Biol. Bull., in press.