ovum impetu illo coxerunt.' " Suida, Lessicografo. Bizant., x.)

Galileo makes the following caustic comments: " Se il Sarsi vuole che io creda a Suida, che i Babilonii cocesser l' uova col girarle velocemente nella fionda, io lo crederò; ma dirò bene, la cagione di tale effetto esser lontanissima da quella che gli viene attribuita, e per trovar la vera io discorrerò cosi: Se a noi non succede un effetto che ad altri altra volta a riuscito è necessario che noi nel nostro operare manchiame di quello che fu causa della riuscita di esso effetto, e che, non mancando a noi altro che una cosa sola, questa sola causa sia la vera causa. Ora, a noi non mancano uova, nè fionde, nè uomini robusti che le girino; e pur non si cuocono; anzi, se fusser calde, si raffreddano più presto; e perchè non ci manca altro che l' esser di Babilonia, adunque l' esser Babiloni è causa dell' indurirsi l' uova e non l' attrizion dell' aria: che è quelo ch' io volevo provare." (If Sarsi *commands* me to believe on the authority of Suida that the Babylonians used to cook eggs by swiftly swinging them in slings—I will. But I will certainly say that the cause of such results is far from that which he attributes; and in order to discover the true cause I will reason in the following way: If we do not succeed in obtaining a result which was successfully obtained at another time, some one factor at least must be lacking which is necessary for the successful production of the result. Now, we have no lack of eggs, nor slings, nor strong men to swing them, *and yet they do not cook; on the contrary*, if already warmed the swinging would cool them more quickly. Since the only factor that is lacking is that we are not Babylonians, therefore the fact of being a Babylonian is the cause of the eggs solidifying, and not the friction of the air: and this is what I set out to prove.) (Galilei, Opere, vi. Also in "Frammenti e Lettere" (1917), p. 66).

If Galileo had actually put his experiment to the test he might have written otherwise. Within the last few years it has been "discovered" that egg white under mechanical strain such as *vigorous shaking* or very high hydrostatic pressure undergoes coagulation (*vide* Robertson, "Physical Chemistry of the Proteins," 1918). In a paper to be published shortly in the Proc. Roy. Soc. (read at the meeting of February 15), I show that chemical changes which occur on heat-coagulation also occur on coagulating an egg by mechanical means.

The myths and anecdotes of the ancients are almost invariably built on some foundation of fact; and it seems highly probable that the Babylonians were aware that eggs could be coagulated by vigorous movement (such as swinging in slings). If this be so, the phenomenon of mechanical coagulation proves to be another example of a former observation rediscovered—in this case after the lapse of thousands of years!

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Emmanuel College, Cambridge,
February 16.

Use of Yeast Extracts in Diabetes.

WE have recently shown (*Journ. of Physiol.* 57, p. 100, 1922) that there is present in the blood of normal persons a sugar of a reactive nature, which gives the same osazone as glucose, but has a lower rotatory power. In the blood of persons suffering from severe diabetes mellitus, this sugar is not present in amounts capable of detection. In conjunction with Dr. Devereux-Forrest, we have found that, after administration of insulin to diabetic persons, whereas the quantity of sugar in the blood is decreased, the amount of normal blood sugar is increased.

We have also shown (Proc. Physiol. Soc., December 16, 1922) that extracts of pancreas and liver together alter the rotatory powers of glucose and fructose *in vitro*. It was suggested that the absence or inactivation of either the pancreatic or liver factor was the cause of diabetes. Since the pancreatic and liver factors were markedly accelerated by the addition of phosphates, it seemed possible that one constituent of the pancreatic factor might be a sugar-phosphoric acid complex. As an essential step in the metabolism of sugar by yeast is held to be the formation of hexose-phosphoric acids, it seemed possible that an extract of yeast might take the place of the pancreatic factor.

We have obtained a solid preparation from yeast which would appear to have similar properties and effects.

When a solution of this substance is injected into rabbits, a very definite lowering of the blood sugar occurs, in every way comparable to that which we have found after injections of insulin. Rats when injected die in convulsions similar to those caused by insulin.

Some properties of insulin and of this extract of yeast are very similar. Both contain organic phosphorus and carbohydrate. Seliwanoff's reaction is positive in each case after hydrolysis.

We are at present engaged in a further investigation of these extracts.

L. B. WINTER.
W. SMITH.
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February 16.

Meteorological Nomenclature and Physical Measurements.

IN reply to Sir Napier Shaw's kindly rejoinder in NATURE of February 17, p. 218, to my meditations on the progress of meteorology, I prefer to his simile of a boat-race that of boats striving to tow the not yet quite ship-shape bulk of meteorological research forward on its destined course. Although Sir Napier Shaw's was the best equipped of the boats, in which he was able to experiment with new modes of propulsion, I am sure he recognises that I was pulling with all my strength, if independently, at least in the same direction as himself. That I pulled in grim earnest with the result of long disablement accounts for my present position (which strikes me as more desolate than dignified) on the shelf, from which I see the now graceful lines of the new meteorology moving ahead with Sir Napier's new engines installed, and though almost out of hearing I listen to their beat in order to form an opinion as to how they act. I should be sorry indeed if anything I said were to retard or discourage any one on board that craft or cast a shadow on the laurels with which Sir Napier Shaw has been crowned by the scientific world to the joy and pride of every British meteorologist.

Dropping metaphor, there is surely large room for helpful difference of opinion as to terminology and the relative value of facts and formulæ. I do not dislike the metric system in spite of its occasional awkwardnesses, nor would I hesitate to embrace the millibar if it seemed to me to be making for unity instead of adding a new ramification to diversity. In the works I was reviewing I failed to see the signs of the coming of the millenium of the millibar; but if it is on its way, "come it will for a' that."

HUGH ROBERT MILL.
February 19.