

this plan will forward to the undersigned their own suggestions and criticisms, together with a definite statement as to the conditions under which they would be willing to submit both new and old negatives or prints to the Marine Biological Laboratory film collection. It would also be extremely helpful if any interested in obtaining extra prints from such a collection would communicate with us. Needless to say, furtherance of the plan will depend almost wholly upon the response from readers of this note.

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ANOTHER TREATMENT OF THE UNITS FOR $F = ma$

In the October 14, 1938, issue of SCIENCE Professor Perkins says that there are only two essentially different ways of handling gravitational measures of force. I am not quite sure what Professor Perkins would call *essentially* different, but there is certainly another way which looks different and does not involve some of the difficulties which he discusses.

Let us use only $F = ma$. The quantities are all to be measured in units from Table 1 and for a particular problem must all come from the same horizontal row of the table.

TABLE 1

		Length	Time	Mass	Force	Energy
Absolute ...	{ Metric	cm	sec	gm	dyne	erg
	{ English	ft	sec	pound	poundal	ft poundal
Gravitational	{ Metric	cm	sec	metric	gm-f	gm-f cm
or				slug		
Engineering	{ English	ft	sec	pound	pound-f	ft pound-f

The pound-f and gm-f are defined as the weight of a pound mass and gm mass respectively.

The slug and metric slug are defined as the masses to which a pound force and gram force respectively will give unit acceleration (1 ft/sec², 1 cm/sec²).

K.E. $\frac{1}{2}mv^2$, $F_c = mv^2/r$, Work = Fs = change in potential energy.

We do not expect other formulas to be so written that we can enter them without first reducing the quantities involved to certain particular sets of units and still have the answer in terms of familiar units. We should do the same with $F = ma$.

With this treatment, only a single set of formulas is needed. Furthermore, no "g's" are scattered over these formulas like salt over a plate of food. In this country at present it is hardly possible to ignore "ft lb" of energy and horse power (=550 ft lb-f per sec). Hence, however much the physicists would like to forget gravitational units, they must continue to teach both systems, but that does not need to mean that there must be two sets of formulas.

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THE MOVEMENT OF WATER FROM CONCENTRATED TO DILUTE SOLUTIONS THROUGH LIQUID MEMBRANES

In the experiment of W. J. V. Osterhout and J. W. Murray¹ recently commented on by H. E. Bent² it appears to us that the permeability of the membrane for the solvent as well as for the solute deserves special consideration.

If the membrane were permeable only for the solvent there would be a contradiction of the second law of thermodynamics. However, the fact that the solute is simultaneously transferable contributes a positive reduction in free energy which fully compensates the work required for the apparently anomalous movement of a certain amount of solvent.

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THE AMERICAN ASSOCIATION OF SCIENTIFIC WORKERS

In a recent issue of SCIENCE (December 16, 1938) the announcement was made of the formation of a branch of the American Association of Scientific Workers in Boston and Cambridge, Mass. It is hoped to establish similar branches of this association in various centers as a means of bringing together scientists of different disciplines to study the problems of science and society and to endeavor to give effect to the natural desires of scientists as members of democratic society. Its program is in accord with publicly expressed opinions of prominent men of science, including leaders of the American Association for the Advancement of Science, and it is hoped that active groups of the American Association of Scientific Workers and individual members will be able to co-operate with the American Association for the Advancement of Science in its activities in the field of science and society.

Not long after the founding of the American Association of Scientific Workers the following letter was received from Sir F. Gowland Hopkins, president of the Association of Scientific Workers in Great Britain and a past president of the British Association for the Advancement of Science and of the Royal Society:

I am much interested to learn of the foundation of the American Association of Scientific Workers, whose policy and program are so closely parallel to those of the Association of Scientific Workers in Great Britain.

In these days when science plays so great a part in every field of modern life it is essential for scientific workers to organize, both to protect their own economic and professional status and to work for the better organization and application of science for the benefit of the com-

¹ SCIENCE, 87: 430, 1938.

² SCIENCE, 88: 525, 1938.