A theory to explain this behavior of the insects is as follows. Doubtless each individual insect has a normal tendency to flash at approximately equal intervals, these intervals being nearly the same for many different individuals of the swarm. Suppose that in each insect there is an equipment that functions thus: when the normal time to flash is nearly attained, incident light on the insect hastens the occurrence of the event. In other words, if one of the insects is almost ready to flash and sees other insects flash, then it flashes sooner than otherwise. On the foregoing hypothesis, it follows that there may be a tendency for the insects to fall in step and flash synchronously.

Everybody knows the flashing electric glow lamps for advertising and for warning signals. Some of these of longer period (five or ten seconds) have apparatus in which a condition (like the heat expansion of a core by an electric heating coil) builds up with time until it causes a flash which wipes out that condition, which then begins and builds up anew, and so on. Let us have a number of such lamps on a bench with their periods nearly, but not exactly, the same. Suppose that with each lamp there is a respective photoelectric cell connected to intensify the said condition (as by increasing the electric current in the heating coil) when light falls on the cell. First, screen the lamps from each other; there will be no sustained synchronism. Next, remove the screen; with suitable adjustment of the apparatus, the lamps will fall in step and flash in synchronism.

Consider two flashing lamps (or insects) A and B of periods slightly different, A having the shorter period. Eventually there will come a time when B's normal flash will be promptly after A's flash. Thereafter, were it not for the photoelectric cell (or in the case of the insect, the special equipment assumed by the present theory), B would flash later and later compared with A. But because of the cell (or equipment), B is accelerated each time enough to keep it in step with A. Further development of the principle here involved could be reached by extending the discussion to cases of three or more units.

An individual flashing firefly should be confined and its approximate period ascertained by observation, then a light should be flashed in its presence at a period slightly less; would the firefly fall into step? Various intensities and kinds of light should be tried.

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PRESSURE IN A FLUID

W. H. PIELEMEIER proposes in the issue of SCIENCE for April 25 that the concept of pressure potential be introduced, in the treatment of hydrodynamics. It seems to me that he has misconceived the nature of pressure. He states that according to the defining equation, $p = F \div A$, pressure is a vector quantity. This is not the case. In the equation F is a vector normal to the surface, and A is a vector in the same direction. The quotient is a scalar quantity. p is therefore a scalar. Inasmuch as we have already the potential function represented by the product of pressure and the specific volume of the fluid, it seems unnecessary to introduce another potential function so closely related to the one already in use.

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LAWS OF ORBITAL MOTION

RECENT correspondence has directed my attention to a law of planetary distances given in SCIENCE for April 5, 1929, by Professor Caswell, who states that so far as he is aware the relation has not hitherto been reported.

As a matter of fact, the law was enunciated by me ten years ago, in *The Observatory,* No. 545, November, 1919, and was shown to apply not only to the Sun and planets but also to systems of satellites.

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SPECIAL CORRESPONDENCE

BARRO COLORADO ISLAND BIOLOGICAL STATION

DR. THOMAS BARBOUR, chairman of the executive committee of the Barro Colorado Island Biological Station in the Panama Canal Zone, has submitted to the division of biology and agriculture of the National Research Council the sixth annual report of the station, covering the period from March 1, 1928, to February 28, 1929.

Dr. Barbour reports that the following institutions have continued their annual $300 table subscriptions: American Museum of Natural History, Harvard University, Missouri Botanical Garden, Smithsonian Institution, Johns Hopkins University and the University of Michigan. He is also glad to be able to announce that the Carnegie Institution and the Field Museum of Natural History have joined the institutions that help support the station through table subscriptions. There should be more.

The total expenses for the year were $6,052.80, and the total income received was $6,489.45. This total was made up by table subscriptions, personal donations (among which Dr. Barbour's account for two