One of the boys called my attention to a column of smoke about a foot in diameter, rising from the marsh about one eighth of a mile in from the lake. We immediately ran to the fire to check it if possible and determine its origin, but, because of the nature of the combustible matter and the strength of the wind, it was already beyond control. As the partly dried marsh vegetation was not anywhere over 3 feet in height, no human could have been there without being seen. Although not a single fire had been observed in the marsh or near-by pine woods prior to this date, and the lake shore was uninhabited for about 15 miles to the eastward, we observed quite a number of large fires scattered over that area during that afternoon, which I could not attribute to accident or design by human agency. They were not along the lake shore, highways or byways where one on foot, horseback or automobile would have been apt to set them, nor along the shores of bayous where one traveling by boat would be likely to set them. A single person could not have covered the territory, even upon horseback, in a day, and the nature and depth of the muck, with the occasional bayous, would make travel by horseback impractical if not impossible.

Looking at the physical facts in the case, we find existing at the time some of the same conditions which bring about the spontaneous heating and ignition of agricultural and industrial products, combined with such weather conditions as always accompany the most disastrous forest and grass fires. That summer, similar rather sudden epidemics of fires occurred in muck soils in drained lands near my home in New Orleans. In one case I noticed what appeared to be a very small fire breaking out on the side of a stump in an empty lot, and I secured a bucket of water to extinguish it. It really took several buckets, for the fire had burned a large hole in the muck soil, and the condition of the under side of the cypress stump showed that it had been burning for some time in a partly smothered condition, and was only breaking through to the surface when observed. During a similar interval, a fire started with a match or cigarette would have set all the dried weeds and grass in the lot in flame and would not have burned the ground so deeply under the stump before spreading. Of course, because of the almost continued presence of people on the outskirts of New Orleans, I would have hesitated to attribute any of these fires to spontaneous ignition, had I not been an eye-witness to the fire in the marsh near Mandeville on August 4.

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RHYTHMIC PHENOMENA IN GELS

IN a paper which was presented at the Buffalo meeting of the American Chemical Society (April, 1919), but which was not submitted for publication, the writer demonstrated the musical vibration and rhythmic splitting of silicic acid gels. The former of these two phenomena was also demonstrated at the same meeting[1]; the second phenomenon was recently described in great detail.[2] A third phenomenon, which the writer also reported and which does not appear to have been observed since, is the variation of pitch with time, which precedes the fracture of the gel. After silicic acid gel sets, it produces a low musical note which increases in pitch, with time, at a varying rate. Sometimes the change is too rapid to be followed and again it may be so slow that the change from the lowest to the highest pitch can be followed through all the intervening tones for a period of several days. Sometimes the pitch at the time of fracture is too high to be heard and again the fracture may occur at some lower note.

Another phenomenon which the writer observed was the production of overtones by gels contained in tubes having an irregular shape.

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BEHAVIORISM IN SCIENCE

PSYCHOLOGY has borrowed much and learned more from the older sciences. It has thus come by method, instrument, procedure and attitude toward the problems of investigating that aspect of nature known as mental life. Mental life is now regarded as part and parcel of nature in general, not as something added or superposed on nature. This has been a great advance, but one which is yet not fully realized by all thinkers.

There has been much ado both within and without psychology over the term "behaviorism." Those to whom the term applies are either extolled as epoch makers in psychology or condemned as destroyers of mental life. Judging from the amount of discussion for and against behaviorism, one would suppose that it was something new on the intellectual and scientific horizon. Perhaps it is not. Behaviorism is an age-old concept or method. Although not specifically called by that name it has been taken for granted in all sorts of inquiries, even in the biological sciences, to which group psychology belongs. Why, then, has its advent caused such a furor in psychology or,

[1] H. N. Holmes, W. E. Kaufmann and H. O. Nicholas, *Jour. Am. Chem. Soc.*, 41, 1329, 1919.
[2] E. C. H. Davies, *Jour. Phys. Chem.*, 35, 3618, 1931.

better, why has its advent in psychology caused such a furor?

We are frequently reminded that psychology is a young science—not far removed from the parent philosophy and it must be remarked that this attitude with respect to behaviorism, both on the part of "believers" and "non-believers," is eloquent testimony as to its immaturity. This is not saying that behaviorism is this or that but merely that some psychologists and others are as yet in a state of mind which might be labeled semi-scientific and semi-philosophical with respect to the investigation of mental life. Scientifically, their thinking is belated.

If we consider the history of scientific effort and investigation since the beginning of man's curiosity about the world and himself we find that he has been observing behavior and recording its uniformities and irregularities. To make it intelligible he has invented theories and constructed hypotheses and scientific laws which are nothing more or less than statements of uniformities in behavior. The chemist looking at a precipitate in a test-tube, Newton regarding the falling apple, if the story is true, were observing behavior. So, too, each in his own sphere—the geologist, the physiologist and the biologist. No one says uncomplimentary things about these scientists because they study the behavior of certain aspects of nature and are thereby behaviorists in so far. Why, then, should the psychologist incur the anathemas of various and sundry, including some of his own relations?

Behaviorism may be right or it may be wrong, but it is no more so in psychology than in any other science. The confusion arises because oftentimes the psychologist and those interested in psychology try to be or try to do two things at the same time, with the result that neither is done well. They confuse fact and purpose, finite and infinite, uniformity and teleology, science and philosophy. Most scientists find enough to do at home and are content to observe, record and explain behavior as found in his own field. Not so with a considerable number of psychologists. As to the ultimate behind, beyond or beneath, they should not presume to discuss as physicists, chemists or psychologists. It is not their field. Some attempt to be philosophers as well as psychologists. Except in the case of a monumental genius the two attitudes produce nothing but confusion. The psychologists should be scientists first, last and always, leaving the ultimates to the philosophers. In the realm of intellect, it is their function to provide perspective, to evaluate findings, to correlate the results of the various sciences into a world-view as also to furnish an interpretation as to what is the meaning of the behavior of that which we investigate and observe. (If ever such a service was needed it is needed now, for the world is suffering from scientific indigestion.) This confusion of aims on the part of the psychologists is the result of an imperfect separation from philosophy really amounting to an immaturity of outlook and attitude.

The psychologist is only a scientist when he is thoroughly objective. Mental facts are observable only as the behavior of the organism. When, however, any one asserts that there is nothing but the response of the organism he is as mistaken as other pseudo-philosopher. That is how the behavioristic school has shown its youth and immaturity as much as any other school of psychology. A denial of consciousness is just as much beside the mark as its affirmation, and the behaviorist is quite as absurd as those whom he condemns. The psychologist as a scientist should do neither. He should be content to take human nature for granted and investigate his special field, just as other scientists take their special fields for granted. The finals, the interpretations, the unifyings, the harmonizing, the ultimates of all sorts and kinds come within the ken of the philosopher. If that division of labor is carried out then a self-imposed burden is removed from the psychologist and he will find time to be a scientist.

Behaviorism, then, is a scientific attitude common to all scientific endeavor, and if the psychologist takes that attitude as a scientist then he ought not to incur an odium from those whose intellect is alive. As long, however, as he mixed the factual with the purposive, confusion of thought is bound to occur both in his own mind and in the minds of others. Let him, content to be a humble scientist, let others soar to philosophic heights. As soon as psychology becomes purely objective this dualism of outlook will disappear. At present it has not reached that stage. Psychologists, by being scientists will be better psychologists, and by being better psychologists will be better scientists. Their philosophy may suffer, but that may be no great hardship.

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QUOTATIONS

INTERNATIONAL COOPERATION

AT a Conference of Institutions for the Scientific Study of International Relations, held in Copenhagen in June, 1931, progress was made in the fundamental study of international relations, and the possibility of a systematic study of actual problems on interna-