tions. And, conversely, physically retarded children are retarded in grade location. But Porter does present, by way of illustration, the complete data on weight and grade location for 2,169 boys at age 9. A coefficient of correlation based on this portion of his total group is $+.06 \pm .01$.[3] Other studies are, in general, comparable. Correlations between height or weight with measures of intelligence appear regularly in the range $+.10$ to $+.20$. Baldwin[4] found a partial correlation, age constant, between height and mental age of $+.53$. But the partial between weight and mental age was $-.15$ on the same group, although height and weight are in general correlated closely.

The same problem has been attacked through longitudinal studies[5] in which spurts in physical growth are correlated with spurts in mental growth. Whether mental growth is measured by intelligence tests or school achievement seems not to be important. The correlations are in the area $+.15$.

The results cited by Professor Boas are, therefore, not in agreement with previous findings. In view of the lively controversial aspects of this problem the complete presentation of the data referred to by Professor Boas will be awaited with interest.

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THE SOLAR RADIATION CONSTANT AND THE ACTIVE REGION ON THE SUN

IN the April 11, 1941, number of SCIENCE Dr. C. G. Abbot, secretary of the Smithsonian Institution, has published a paper on some variations in the solar radiation constant which have not hitherto been described. Some of these variations in the intensity of solar radiations have occurred at successive periods of the solar rotation, indicating that they are, at least temporarily, confined to some geographic region upon the sun.

In a paper entitled "On the Localization of Sun-spots and Floccular Activity on the Sun's Surface" in *Publications of the Astronomical Society of the Pacific,* Vol. 47, 1935, and in SCIENCE of October 4, 1940, there was published a paper entitled "The Active Region on the Sun's Surface," in both of which papers attention was called to a permanently active sun-spot region occurring at definite intervals of 27.25 days. This region was shown to have been facing the earth on May 2, 1931, which was the last maximum referred to in the 1935 paper in the *Publications of the Astronomical Society of the Pacific.*

From the several dates to which Dr. Abbot refers as showing radiation irregularities, a few have been selected for comparison with the time at which the maximum-sun-spot region must have crossed the sun's central meridian.

The dates August 18, 19 and 20, 21, 1929, are given. From August 20, 1929, to May 2, 1931, was 620 days, which equal 22 solar rotations of 27.25 days each, lacking seven days of 23 solar rotations.

Another selected date is December 4, 5 and 6, 7, 1929. From December 5, 1929, to May 2, 1931, is 512 days, which equals 18 solar rotations plus 21 days, or 6 or 7 days before the next maximum sun-spot region is facing the earth.

July 7, 8 and 9, 10, 1930, are also referred to. From July 8, 1930, to May 2, 1931, is 298 days, or 10 solar rotations plus 25 days, or two days before the maximum of the next sun-spot region crosses the sun's principal meridian.

January 19, 1931, was 103 days before the disturbed region on the solar surface faced the earth. This was four solar rotations less six days.

The present writer undertook to find a relation between the solar constant and the permanently disturbed region on the sun several years ago, but without success. The limits of this region seem to be very sharply defined. However Abbot's results seem to suggest that the intensity of solar radiation may be related to the solar rotation period, but that its variation occurs a few days before the sun-spot disturbance region is facing the earth.

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AN ANALYSIS OF THE SPREAD OF EPIDEMICS

IN "Elementi per una teoria matematica del contagio" (Roma 1939, Editoriale aeronautico) Dr. Marcello Puma has developed an "equazione fondamentale," $\frac{\partial x}{\partial t} = k \,.\, x \,.\, (n - x)$, governing the spread of contagion.

I should like to state that in 1938 I published a paper ("Bibliotek for Laeger," November, 1938, Copenhagen), in which the above formula is developed and discussed as giving a possible explanation of epidemic waves. The paper contains some tests of the formula, comparing the courses of actual epidemics with the course described by the formula.

A much enlarged investigation of the theory supported by the analysis of numerous epidemics of different diseases will appear (in English) in "Acta medica scandinavica," Copenhagen.

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[3] D. G. Paterson, "Physique and Intellect," New York: Appleton-Century, 1930.

[4] B. T. Baldwin and L. I. Stecher, *Univ. of Iowa Studies in Child Welfare,* 2: 56, 1922.

[5] N. Bayley, 39th Yearbook, National Society for the Study of Education, Pt. 2: 49, 1940.