

physiological condition is that where heat loss by radiation just balances that produced and there is little or no use for perspiration and its evaporation. In other words, is not the physiological process of perspiration exhausting and only necessary because the atmosphere is too hot to permit of removal of heat by radiation without the aid of positive physiological effort?

In Atwater's and Benedict's experiments the data given should show the amount of water eliminated to the air from the breath and through the skin. This represents a definite number of calories absorbed and should show under the conditions the relation of the amount of heat removed by evaporation to that removed by radiation.

These suggestions are made, as you can see, by a novice in hygiene but they may possibly throw a little side light on the problem.

LOUIS CLEVELAND JONES

#### UNIVERSITY FELLOWSHIPS

TO THE EDITOR OF SCIENCE: In SCIENCE of February 10, just at hand out here, there appears a letter by Dr. S. N. Patten upon which I would like the privilege of commenting.

The letter divides itself into two main contentions.

First, by means of a table of present occupations, an attempt is made to show the prosperity of a group of "fellows," thereby demonstrating the value of fellowships. To prove the point the investigation would have to be conducted along lines similar to those recently followed in another connection by Professors Furman, of Stevens Institute, and Cooley, of Michigan.<sup>1</sup> As it is, the surface indications presented by this table lead—through the legitimate inferences which may be drawn—to a conclusion diametrically opposite to the one there stated.

Of the 183 fellows listed as living and of known occupation, 27 belong to a group comprised of literary workers, social workers, ministers and students. To assume any of these wallowing in a wealth of financial returns offers difficulty to the imagination.

<sup>1</sup> *Proc. Soc. for the Prom. of Eng. Ed.*

The second group, 138, consists of 31 teachers in normal and secondary schools and 107 instructors and professors. Lacking specific knowledge as to these individual cases it is fair to reason that these men are no better off than the average of similar ages in their profession. From a knowledge of the prevailing conditions it would be proper to assume that \$1,200 would not be far from the average salary of this group. Under present-day conditions this looks more like "starvation" to me than, perhaps, it does to one who pictures to himself living on an equal salary at the same age, under the conditions of thirty years ago.

This disposes of all save 18 experts and business men. Lacking specific evidence, it is fair to presume that this 10 per cent. is financially more prosperous than the other 90 per cent.

I hope that Professor Patten will complete his table, adding, for instance, the individual ages and salaries. This would give a chance for comparison with an equivalent group of non-fellows; at all events, it would transfer the matter from the realm of speculation to that of hard fact.

But it is the second of Dr. Patten's contentions which interests me more. He lays down the dictum that it is "rapidity of promotion and not lack of it that ruins promising investigators." To sustain this he gives a couple of inconclusive instances. In neither case are the returns, upon which to base final judgment, yet in.

To test his statement I jotted down a list of American scholars whose names occurred to me offhand, for one reason or another. Then I looked up their date of birth and of call to full professorship. The table follows, and the only name on my list omitted below is that of William James, whose call was deferred to his forty-third year because he started out in the field of anatomy and physiology and when he shifted to philosophy had his apprenticeship term as assistant professor to serve all over again.

Does this list bear out the conclusion that an early call or rapidity of promotion is the

ruin of promising scholars? I, for one, should like to see a much longer list like the foregoing compiled by, let us say, the editor of "American Men of Science." It would be interesting to see the result.

Name	Year of Birth	Year of Call	Age at Call
Gray, Asa .....	1810	1842	32
LeConte, Joseph ....	1823	1852	29
Gibbs, J. W. ....	1839	1871	32
Rowland, H. A. ....	1848	1876	28
Michelson, A. A. ....	1852	1883	31
Remsen, I. ....	1846	1872	26
Brooks, W. K. ....	1848	1876	28
Gildersleeve, B. L. ..	1831	1856	25
Hale, W. G. ....	1849	1880	31
Welch, W. H. ....	1850	1879	29
Osler, W. ....	1849	1874	25
Wilson, H. V. ....	1856	1885	29
Thurston, R. H. ....	1839	1871	32
Walker, F. A. ....	1840	1873	33
Fisher, I. ....	1867	1898	31
Sumner, W. G. ....	1840	1872	32
Giddings, F. H. ....	1855	1888	33
Clark, J. B. ....	1847	1877	30
Carver, T. N. ....	1865	1894	29
Seligman, E. R. A. ..	1861	1891	30
Ely, R. ....	1854	1881	27
Commons, J. R. ....	1862	1892	30
Patten, S. N. ....	1852	1888	36

If "young men should be left alone until they are fully developed before transplanting them" they form a curious biological exception. It is a novel contention that prolonged subordination best prepares for initiative and resourcefulness—for intellectual independence and leadership.

If "scholars are not born, they are made by their environment," some change in environment during their period of greatest growth might possibly prove to be stimulating and broadening—particularly if the change were such as, by offering easier financial conditions, freed their time from, let us say, assisting overworked wives in household duties.

The picture of President Jordan conducting a publicity bureau and "dragging into the limelight young men that it would have been better to leave alone" is enjoyable—their being in the statement just enough of that element of contrast which is the essence of humor.

It is true that President Jordan, at the opening of Stanford, called a group of professors whose ages ranged from 31 to 42 years, all but two of them, however, holding full professorships elsewhere at the time—but I, for one, am unaware of his having ever dragged any one of these, or his subsequent appointees, into the limelight. As for these subsequent appointees, their ages have been about 40, I should estimate, as an average. Stanford has offered no marked exception to the general trend of increasing age at promotion to full professorship.

In conclusion, I would like to say that it is significant to note the discussion called forth by the comparatively trivial question of fellowships, contrasted with the silence on the really vital subject presented in John Jay Chapman's letter to *SCIENCE* last summer. I wish you would reprint that communication now that the season of academic vacation is past.

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February 17, 1911

#### UNIVERSITY FELLOWSHIPS

TO THE EDITOR OF *SCIENCE*: Reading Dr. Patten's criticism of Dr. Jordan's address I must protest against the whole tone of his argument, which seems to be that the inducements offered by the teaching profession are so promising and the chances of rapid promotion so great that they tend to prevent the production of scholars. I wish to give the view of a young man just facing the career of a teacher.

Dr. Patten's statement that "scholars are not born" is open to serious criticism. That they are "made by their environment" is partly true. I would extend this statement to read: "and also unmade by their environment," and this environment is a teaching position at \$1,000 to \$1,500 a year. He does not state how many of the 138 University of Pennsylvania fellows teaching in universities and secondary schools are struggling along on \$1,500 or less trying to pay off debts. He does not state how many of them are unmarried because they can not afford it. I heard a