

\$20 for part of the year were wasting public funds. Any one of these three men, if he had been willing to put his knowledge of chemistry at the service of an adulterator of food or an evader of customs, could have made a great deal more money and had a much easier time of it.

It is not merely a pecuniary sacrifice which must be made by men of exceptional ability and proficiency when they enter any branch of government employ. A greater deterrent is the fact that they find that they are not free to work in their own way but have to submit to the detailed dictation of a lot of clerks and lawyers. This is particularly the case with the scientific departments. The scientific temperament is in eternal conflict with the legal temperament. The one cares only for results; the other insists upon methods. The former is striving for something new; the later sticks to precedents. Consequently the scientific men in government employ are apt to be in a chronic state of irritation unless they are of the conventional routine type of mind, that is to say the unscientific type of mind. In the case of a high spirited and original genius this irritation sometimes rises finally to the pitch of exasperation and he goes off on a tangent, sending in a farewell letter to "the department" telling them just what he thinks of them for refusing to pay for that tin cup which he bought without the proper requisition or for sending back his last report because only one color of ink was used on it. Men of calmer temper will get along somehow rather than give up work they are interested in, paying for the things that are necessary but not allowed, out of their own pockets, or collecting money on the side from some patron of science, and resorting to various evasions and misclassifications to get within the letter of the law. Probably the strict and literal enforcement of all the regulations in any department would stop its work. We have experimental evidence in support of this supposition, for in France and Italy it has been tried in the government railroad and postal service, where the employees instead of strik-

ing decided to obey the rules, all of the rules, all of the time. The result proved that obedience was better than sacrifice of wages because it was more effective in tying up the traffic.

The United States government has been remarkably liberal in its appropriations for scientific purposes, both theoretical and practical, but the results have not always been commensurate with the expenditure, partly because of the conditions under which the work had to be performed. By a process of natural selection the men of greatest initiative and originality tend to be eliminated out of the system. This is why the phrase "Washington science" is so commonly used in a derogatory sense.

Now the Bureau of Chemistry, under Harvey W. Wiley, for the past twenty-eight years has succeeded in keeping out of the ruts. It has set a fast pace for the state agricultural experiment stations. It has made many original contributions to science. It has initiated many valuable reforms in legislation and in agricultural practise. Dr. Wiley has a good temper. He laughs and grows fat on worries and opposition that would drive some men mad. He has been able to live in a bureaucratic atmosphere without losing his scientific spirit, or, what is more remarkable, his zeal for reform.—The *Independent*.

DOCTOR WILEY

(With apologies to Rudyard Kipling)

"What makes the Potted Ham so green?" said
Files-on-Parade.

"It's feelin' fresher than it is," the Color Ser-
geant said.

"What makes the ranks so white, so white?"
said Files-on-Parade.

"They're dreadin' what they've got to eat," the
Color Sergeant said.

"For, they're bouncin' Doctor Wiley, you can
hear the Microbes cheer,

And the Germs is all a-singin' 'Wiley's goin'
away from here,

And we're comin' back far stronger than
we've been for many a year,

For they're bouncin' Doctor Wiley in the
mornin'."

"For what do they be bouncin' him?" said
Files-on-Parade.

"'E put the Microbes on the blink," the Color
Sergeant said.

"An' did the Microbes 'urt the Blink?" said
Files-on-Parade.

"They put the Blink out of a job," the Color
Sergeant said.

"They are bouncin' Doctor Wiley, and the
germs are runnin' free,

And the Microbes an' Bacilluses are chort-
ilin' with glee,

For they'll get their starvin' 'ooks once more
on folks like you an' me,

After bouncin' Doctor Wiley in the
mornin'."

—Horace Dodd Gastit, in *Harper's Weekly*.

SCIENTIFIC BOOKS

Handbuch der Klimatologie. Von Dr. JULIUS HANN, Professor an der Universität Wien. Dritte Auflage. 3 Volumes. Prices 15; 15; 23 Marks. Stuttgart, J. Engelhorn's Nachf. 1908, 1910, 1911.

A laborious work is now completed and published. The progress of science may years hence suggest modifications and improvements. The history of science may bring into prominence the names of others than those quoted in this great work, but for the present this monument must stand alone, towering over other books as the pyramids of Gizeh tower over the valley of the Nile.

For forty years past Dr. Julius Hann has been filling meteorological journals and literature with a steady stream of works on the subject that has absorbed his thoughts and life. Neither Newton nor Laplace surpassed him in intense concentration of effort; neither Euler nor Humboldt have published more voluminously. Neither "The Voyage of the *Challenger*" nor all the polar expeditions of the past thirty years have contributed more to our accurate knowledge of the atmosphere of our own globe.

In three volumes of text totalling 1,400 octavo pages "The Founder of Modern Climatology" has given us both numerical and textual descriptions and comparisons covering

all the characteristic features, both the general and the special local characteristics, of all the known climates of the globe. At first sight it would seem impossible to do this; but at numerous localities the forces that build up local climates are the same, so that the relative importance of one or the other force controls the result.

Complex as are the atmosphere and its relations to the earth and man, to geology and biology, to history and religion, yet all can be analyzed into temperature, moisture, sunshine and wind. The tabulation of these fundamental data gave Hann the handy material for statistical intercomparison and study. Hence his volumes are crowded with facts—dry facts, if you will, but reliable material for careful study. Of course the popular writer, the superficial traveler, the advertising land owner, is satisfied with a few striking items; but the careful engineer, the large planter, the discriminating physician, need every possible detail that can affect any feature of human interest. It is for these and all other accurate students that Hann has compiled these solid volumes. The exhaustive range of his reading, the continuous appeal to the pencil memoranda that he must have kept, the quotations of reliable figures instead of general verbal descriptions, make one feel that here we have condensed facts and not fancies. Even the elusive "sensible temperature" or "curve of comfort" or the sensation of temperature seems reducible to an exact function of temperature, humidity and wind.

Of course no satisfactory résumé of Hann's "Climatology" can be given here. We need only say that volume I. (Stuttgart, 1908) is the revised edition of an earlier work, translated and published in 1903 by Professor R. DeC. Ward, of Harvard University.

The second volume (Stuttgart, 1910) deals with the tropical zone or the whole region between the tropics of Cancer and Capricorn. This is one half of the whole globe and in some respects the most important half; it extends from New Orleans, Cairo, Bagdad, Hong Kong, Hawaii, and the Bonin Islands on the north, to Peru, Bolivia, Paraguay,