Why, the thing has never been tried! In the name of suffering humanity, let us try it, in the manner suggested by Professor Kent. I have not the slightest doubt that the superiority of out-doors for the health is due to the fact that it is impossible in-doors to secure the circulation of the air that will continually remove the noxious products and replace the air with absolutely good air. Again look at the smoker. It is with difficulty that you can get him to smoke in the open air. It takes away his filthy chemical, and he will often admit to you that at night, and out-of-doors, he can not tell whether he is smoking or not. Thus he gives his whole case away, and helps me in my argument.

There is one other thing that we must not overlook, and that is the sun. I dare say that in spite of all we might do to the air, if we did not pass it out into the sun we should not accomplish much. What does the sun do to the air? Photochemistry will have to answer this, and it soon will. And finally remember that the conditions of radiation of heat from our bodies are totally different when we are surrounded by walls and when not. The question of out-doors is, accordingly, not a simple one, but is composed of simple parts. Let us attack it in detail. Perhaps it will be answered before the other equally important one, *Shall we wash?* And this reminds me of a passage in Dr. Gulick's letter which I can not let pass. In a well ventilated school-room (in London) there was "no smell of human beings—this was only noticeable when one stood among the *boys*" (italics mine). As an ex-boy I resent this.[1]

Finally let me suggest an answer to Mr. Mott-Smith's last question: "Why is a little sneaking draught in the house a source of colds and grippe, while a high wind out-of-doors a pleasure and a benefit?" I suspect that the answer will be Mr. Dooley's consoling one to Hennessey, "It ain't so!"

Arthur Gordon Webster

Worcester, Mass.,
August 4, 1911

[1] It has occurred to me that perhaps it was a boys' school.

Electrons

To the Editor of Science: Will you permit an old fogy to trespass on your space long enough to ask a simple question? I confess that in spite of bibliographies, card catalogues, scientific management and all the helps to the weary, I have lately found it impossible to keep up, and find myself confronted with the horrid thought of having to become a specialist. I have not even been able to read all that the chemists have written about physics. Now whether we agree with what has recently been said by a notorious chemist (perhaps I mean noted, but the weather is so hot) that "we appreciate fully that physics, geology, engineering, physiology, medicine, botany, zoology and biology (why not astronomy?) are subdivisions of the broader science of chemistry, we see that the chemist of the future must know a great deal more than any of us do now"—whether we agree with this poet or not (and I cordially agree with his final statement) we know that in future the physicist has got to sit at the feet of the chemist (I hope he will sit *on* them). But in Professor McCoy's very interesting article on metals I find the following statement, which causes me some difficulty: "The charge of the electron is negative in sign. In fact we have decisive experimental evidence of only this one kind of free electricity, positive electrification of a body being from this standpoint merely a deficiency of electrons. J. J. Thomson has shown how from the conception of an atom made up of electrons rotating in a sphere of positive electrification, there follows," etc. Now I submit that logically the above statement would be helped by a substitution in the last sentence of the definition from the next to the last, so as to read: "an atom made up of electrons rotating in a sphere of merely a deficiency of electrons," etc. What I want to know is, what is this spherical deficiency made of? Is it a hole in a space all full of electrons? If so, what about the lonely electrons rotating in this hole in the whole body of electrons? But perhaps

I have not got it right. This is hot weather anyhow. I presume the passage in "quotes" is from some of Sir J. J. Thomson's writings. I do not want Dr. McCoy to think that I am blaming him. But if so, what are all these papers of Thomson's and Wien's on positive rays about? Being an old fogy, I sometimes feel that there are too many electrons about, and that one of the wonderful fly-traps that you read so much about in the papers ought to be devised to catch them. I remember (dimly) that when I was a boy in college I had a great aversion to molecules. I had never seen one, and didn't like them. And now I have the same queer feeling about electrons. But perhaps I shall see one some day. Rutherford has. But the one he saw was positive. Wasn't it? I am not positive.

Speaking of chemists, I think the best joke ever made by a chemist was when Mendelejeff undertook to consider the ether as a chemical element! Why not have the ether made of electrons? To which of these hypotheses should we incline? I answer in the words of Dr. Holmes, "To ether."

ARTHUR GORDON WEBSTER

WORCESTER, MASS.,
August 4, 1911

THE SCIENCE OF GOVERNMENT

TO THE EDITOR OF SCIENCE: Investigations are the order of the day, not only by scientific men, but (save the mark) by Congress. Your quotation from the *Independent* with regard to Dr. Wiley encourages me to express the hope that this incident may lead to an investigation (by both classes of persons) of the whole question of the relation of the government to science. Every interest in the country that has votes enough and can log-roll enough support is looked after by the government, and eventually gets a cabinet officer, why not science? I suppose there is no doubt that our government spends more on science than any other. I suppose there is equally no doubt that it gets less for its money than any other, and that there are many abuses unworthy of a civilized régime which ought to be abolished. Of these the chief one is, why are not scientific affairs managed by scientific men? I suppose it is because members of congress do not believe that scientific men are worth more than $9 a day. As long as scientific men are willing to tolerate such an assumption I do not much blame the congressmen.

But there is another reason, hinted at in your quotation. It is that the atmosphere of Washington is not only rotten (I have treated the atmosphere elsewhere) for science, but it is infested with a most dangerous parasite, the *red-tape-worm,* I do not rightly know whether to call it a protozoan, a microtome, or a cytoblast, but either Dr. Charles Hookworm Stiles or Dr. L. Culex Howard can tell. This worm eats the vitals out of the scientist, and leads him to pretend that he didn't do the research, but that the man higher up did. Washington is a charming city, full of statues of men on horseback, waving cocked hats, but when every scientist has to have an assimilated rank, so that he shall know whether he is a captain or a major-general, the results can only be painful. I am glad that I did not coin the phrase, "Washington Science," and equally glad that some one else did. By the way, not all Washington science is done under the government. I hope this letter may provoke discussion, but I do not wish to take part in it. Like all brave anarchists, I wish merely to explode the bomb, and then run like . . . . !

ARTHUR GORDON WEBSTER

WORCESTER, MASS.,
August 4, 1911

DUE—

TO THE EDITOR OF SCIENCE: Due to the death of my imaginary stenographer, I am able to write you but a few lines. This is a quotation from any one of several hundred scientific contributions that I have read lately. The object of my writing now, Mr. Editor, is to ask of you (for the first time) a favor, and that is that you will refuse to print any communication in which the adjective "due" appears in any way except as agreeing (I think that is the word) with some noun or pronoun. As I believe that one who does not do research himself may do good by suggesting subjects