CLEANING OF FRUIT CARRYING LEAD

THE rigid requirements of the Pure Food and Drug Administration have made it obligatory for fruit-growers to remove spray residues on fruits and vegetables to a point where no possible danger to the health of the consumer could develop. Within the past two years we have developed a method of using a wetting or degumming agent of certain types with hydrochloric acid, which would enable the fruit-growers to reduce the arsenic and lead residues on their produce to the required tolerance of the domestic and export markets. The results of our investigations in this field have already been reported in various publications.

More recent experiments show that these wetting and degumming agents, when used with alkalis and alkaline silicates in heated solutions increase their efficiency to a marked degree. It should be noted that, whereas the acid-wetting agent combination may be used at atmospheric temperatures, the silicate-wetting agent solution, like all alkaline washes, must be used at higher temperatures. Fruit carrying lead twelve times the federal tolerance of .02 grains per pound were satisfactorily cleaned with the silicate-wetting agent wash. The indications are that this wash solution will give satisfactory results in any type of washing apparatus which is equipped for heating the solution. The matter is one of large economic importance, particularly to fruit-growers on the Pacific Coast.

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LABORATORY FEES

FOR some time I have been considering our common plan of charging science students laboratory fees. Students entering the College of Liberal Arts, for example, are charged a tuition which admits them to any course except those in the sciences. For these courses they are charged laboratory fees. Other subjects cost the university money for libraries, lecture-room appliances, lecture and classrooms, etc., but in most institutions no fees are charged for these other than the general tuition paid by all.

The tuition paid in universities and colleges does not at all pay for the expense involved in furnishing a student with the education given him by the institution. There seems to exist an impression that a student should pay in full for the science part of his education at least so far as laboratory work is concerned.

Naturally the question is asked, Why fine a student for entering a science class? This has been emphasized by the depression, which has prevented many students from entering science work because they did not have the money to pay laboratory fees, although desiring very much to enter science classes.

I am suggesting that science teachers make a move to have the tuition charged in any school give the student admission to any class in that school, be it science, language or any other subject. The science work under this arrangement would be supported by appropriations, just as salaries are now supported or any other expense is supported.

Fifty or sixty years ago when laboratory work in science came into the colleges it was only tolerated—not welcomed. For that reason it was not permitted to have any money, and the laboratory periods must in no way interfere with regular times for classes. A typical college in 1880 to 1890 had its class periods all in the forenoon. No laboratory science was permitted to have laboratory work at any time except in the afternoons or on Saturday mornings when no classes were held in other subjects. Then, too, it was held that the laboratory work must not cost the institution anything. We are still living with part of that last century handicap in most institutions, namely, that laboratory work must not cost the institution anything and must be paid for by the students in addition to any general tuition which they may pay.

Some institutions have made a start towards doing away with laboratory fees in some sciences. In most cases of this kind the students in chemistry, for example, are required to pay for breakage slips, and during the year they really pay more for a laboratory course in chemistry than students do in other institutions where a laboratory fee is charged. This is due to the fact that the students are charged for some chemicals and other materials—not strictly a breakage charge.

I would be glad to have the reader's reaction to the proposal that laboratory fees be merged into the general tuition, and that when a student pays his tuition to enter the School of Liberal Arts or the School of Engineering or any other school he is free to enter any course given in that school. This would not abolish a breakage deposit, which money is to be returned to the student if he has not broken any apparatus—this only makes the student more careful.

I am not suggesting this as a method to get more students in science. In the University of Mississippi in some years we have more students in chemistry than there are in any other single subject. I am just proposing that science be put on the same basis as languages, history, philosophy or any other subject as far as fees are concerned. It is a proposal to give students who wish to take science an equal chance with those students who wish to take other subjects.

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