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THE DEMAND FOR SCIENCE TEACHERS.

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There is no subject which suffers more from lack of adequate preparation on the part of the teacher than does science. In some subjects a determination to succeed and a persistent effort to master the difficulties will, in a measure, alleviate the ills arising from insufficient acquaintance with the subject matter. In science teaching, however, these will not compensate for a lack of thorough scientific training. The teacher who has not had this training has missed the spirit of scientific investigation and, what is worse, he usually does not know his lack. He deals with the facts of science, teaches things which are curious or interesting because unfamiliar, and behind a multitude of more or less useless facts hides his own entire lack of conception of scientific progression, scientific unity, scientific spirit.

That the need of specially prepared teachers who have had thorough training in some one line, together with some instruction in the best method of teaching, is recognized by those who select teachers for the high schools of Illinois, is shown by the nature of the requests recently made for teachers. Seventy-eight such requests were sent in, of which sixteen were for high school principals, and fifty-two for high school teachers. But ten failed to specify the subjects or mentioned more than two lines of work. These ten were either for superintendents who were not required to teach or for high school principals in small schools where nearly all of the work is done by the one teacher.

Of the seventy-eight requests, twenty-five were for science

teachers, showing that superintendents and school boards recognize the necessity of a special teacher of science. Sixteen of these twenty-five requests were for teachers of science alone (twelve for general science, three for biology, one for physics and chemistry). The small number for physics and chemistry arises from the fact that these subjects occur in the third and fourth years, and but few schools are large enough to have more than one class in each. The teacher of physics and chemistry, therefore, must teach other subjects, usually the other sciences, in which case the request was for a teacher of general science. The other combinations were as follows: Science with mathematics, 4; science with English, 2; biology with mathematics, 1; biology with art, 2.

Another interesting thing noted was the strong demand for women who could teach science. This probably arises from the fact that men who teach science usually can command higher wages than teachers of other branches. Many schools have, therefore, been unable to pay for a special teacher, and the work has been divided among the other teachers. The folly of farming out the science to the teacher who happens to have a vacant period is becoming apparent, and from the effort to correct this condition a demand for cheaper teachers has arisen. Because the wages of women are lower than those of men the requests frequently specify that a woman is preferred. This should not be taken to signify that wages for either men or women are decreasing. It simply means that more places for science teachers are opening and that many of these are being filled by women, usually at salaries larger than these same women could command in other lines of high-school work.

The following tabulation shows the demand for the different subjects. Each combination is given under both subjects:

Position wholly or partly science, 25; mathematics, 18; English, 13; Latin, 11; German, 5; history, 5; art, 2; Greek, 2; commercial work, 1; not specified or general, 10; requiring athletes, 5; requiring military, 1.

From this it appears that there is a stronger demand for trained teachers of science than for teachers in other lines. This arises from the fact that the other branches have been taught

longer and have a better established place in the school program of studies. More teachers, therefore, are prepared to teach them and there is less need for the superintendents to apply to the university for special teachers in these lines. Furthermore, there are more places able to prepare teachers of Latin or mathematics than there are fitted to give proper training to teachers of science, and while there are more places for teachers of Latin or mathematics, the requests for these are spread over more colleges and universities. Doubtless there are colleges where the requests for teachers would show a much lower percentage of science teachers.

It is a pleasure to note the rapidly improving condition of science teaching in this State. It is evidence of great good to come that so many schools are seeking special science teachers. One good thing demands another. A good science teacher must have a laboratory room and *will get it*. A laboratory calls for equipment and equipment insures better results. Schools which have been for years placidly content with an air pump and a frictional electrical machine have awakened to the fact that these do not make a laboratory. Of the eighty-nine schools visited last year, five have added a room for a laboratory, and eighteen have made large additions to their science equipment in the line of individual quantitative experiments. The others already had a fair equipment. If a proportional improvement was made in the schools not visited, there is certainly hope for much excellent science work.

FOREST BOTANY.

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Educators continue to differ as to whether the better training, from an educational point of view, is to be gained in connection with subjects of utilitarian value or those of more strictly academic character; and there may well be advantages on the side of the latter such as are not associated with the facts of everyday