

Prof. von Dyck was able to allocate funds to this purpose which he had received from the Rhineland industry for investigations relating to Kepler.

Prof. Caspar shows a commendable enthusiasm for his subject, but it seems to us he altogether overrates Kepler as a mathematician. Admitted that Kepler was an outstanding man, a genius in his wild way, and that he had a hard life, and that without courage and strong convictions he would never have discovered 'Kepler's laws'; but because he did so, the world has put him into a niche from which he cannot be displaced. Of course, that happened after his death, when I suppose it did not matter to him how the world treated him. It is no part for this journal to decide whether he was or was not greater than his great contemporaries, Galileo and Tycho Brahe, still less, to step across time and compare him with his predecessor Copernicus and the rest, or his successors, Descartes, Huygens and Newton. But, to take an example—*Harmonices Mundi Libri V*, 1619, contains 'Kepler's third law', which is a very

valuable asset; but it also contains a lot of sheer nonsense which no one now thinks of, except to dismiss it, such as the music of the spheres, spelt out in the notes each planet makes, with the remark that the earth utters those notes because misery and famine were found there. No doubt they were; so, too, were the courage and tenacity of a Kepler. Also some things with a less personal point and which we are able to judge impartially, such as the relations of the distances of the planets to the sides of the regular solids. We get no notion at all of this from Prof. Caspar's description. To translate a specimen: "The beginnings of this great work reach back to the earliest adult years, its roots are in the deepest soil of Kepler's thinking. He reveals to us the innermost kernel of his views on Nature and the World, he utters the last word of what he knows how to say of the Cosmos and the position of men. We see here not merely the astronomer . . ." and so forth; all rather rhetorical to our thinking. Although the technical work seems to be well done, this exaggerated language is characteristic. R. A. S.

## The 'Factor School' in Psychology

### Ability and Knowledge :

the Standpoint of the London School. By Frank C. Thomas. Pp. xx+338. (London: Macmillan and Co., Ltd., 1935.) 15s. net.

THE number and character of contending schools of psychology were well brought out a few years ago in a large volume issued in America under the title "Psychologies of 1930". No fewer than eleven schools came under review, one of them being the "Factor School", created by Prof. C. Spearman, and described by him as a school to end schools. That the other schools still flourish—for there is no one of them which does not contain some portion of the truth—does not prove that Prof. Spearman's expectation, or at least his hope, is entirely disappointed. On the contrary it is probably true to say that his theory of a general factor (the now rather famous *g*) and of a variety of specific factors in ability holds the field more securely than ever; and it is equally true to say that his analysis of the birth and growth of knowledge places the psychological study of cognition on a more scientific footing than has ever existed before. After reading Spearman, one can scarcely resist the conclusion that the time has come when William James's lament that psychology was no science, but only the hope of a science, is no longer justifiable.

Prof. Spearman's large books, however, and his extensive series of contributions to learned journals, make heavy going for many people who are not professional psychologists, but who yet desire a statement, which shall be clear without being superficial, of the steps of his argument. Such readers are numerous, and they include, in particular, workers in the fields of education, vocational guidance, and industrial psychology. For them, Mr. F. C. Thomas has written this excellent handbook.

In this book Mr. Thomas really takes up the position of a teacher who, having mastered his subject, takes a keen interest in presenting its essentials with all the lucidity of which its nature admits. We observe that Prof. Spearman and Prof. F. A. P. Aveling, to both of whom Mr. Thomas acknowledges his indebtedness as their former pupil, are abundantly satisfied as to the accuracy of the book as a statement of their joint position. Further, we believe we can answer for it that the readers whom Mr. Thomas has specially in view will be equally satisfied. He modestly disclaims any but "the most ordinary literary facility". We can certify, however, that the book is so well written that not once have we been compelled to re-read a sentence in order to be sure of its meaning.