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*"To the solid ground
Of Nature trusts the mind which builds for aye."*—WORDSWORTH.

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Science in the Civil Service.

TWENTY years ago there were very few scientific workers in the Civil Service; only one or two Departments existed where a knowledge of science was a qualification for employment, and the higher Civil Service contained few men who could claim even a nodding acquaintance with scientific thought. The rapid growth of the public Services within the last fifteen years, the assimilation of public utility companies into the State system, the creation of entirely new Departments, and the realisation forced upon Ministers by the war of the necessity for scientific research in the nation's interest, have resulted in the employment of thousands of scientific and technical workers. Many of those engaged temporarily during the war have returned to the universities or other institutions from which they were recruited, but a large number remain and have been absorbed by various State establishments. The position of such

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workers demands our earnest attention. Prejudice dies hard, and there are still many men in high administrative positions in the Civil Service who hold science in contempt, and this feeling is reflected in their attitude towards scientific workers in their Departments.

It is true, perhaps, that there is something incompatible between science and the Civil Service as it exists. There is a fierce egoism in science which combats the merest semblance of submission to the rigid tyranny of the administrative system. The true scientific worker is impatient of the delay which is the direct outcome of existing departmental methods. He wants to get the results of his labours to the outside waiting world immediately; he is restrained daily by the exasperating regulations which prevent him from doing so. He is for ever reacting against the repressive influence of his environment and the irritating interference of the lay official disciplined to the system.

However, scientific workers have been attracted to the Civil Service in increasing numbers not so much by the emoluments or the security of tenure—the primary considerations of unprogressive minds—as by the opportunities afforded by Government service for the continuation of their researches, which would otherwise have to be abandoned to take up teaching or commercial posts. Some new Departments are the direct outcome of their labours. But gradually their functions are being usurped by the adept place-hunters in the administration, and already some of the ablest men of science, who have given signal proof of their ability to run their own Departments satisfactorily, have been forced to relinquish administrative control to the lay officer. We can think of only two remaining scientific heads of Departments who rank with permanent assistant Secretaries of

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State—only two, that is, who can be assured that their schemes will not be mutilated by a non-scientific officer before going through the permanent Secretary to the appropriate Minister. The semi-official apology for this remarkable state of affairs is somewhat disingenuous. It is urged that the administrative machine is so complex that only those with long experience are competent to work it. If this be the true explanation of the subordination of the man of science to the lay official, it is high time the machinery of our Government Departments was overhauled. Ministers responsible for scientific Departments should realise that there is a growing class-consciousness among the younger men of science, and real resentment felt against the intrusion of lay officials into their proper sphere of activities. Such intrusion means duplication of work. It is worthy of note that in one Department where the lay element has been subordinated to the scientific staff a pre-war staff of more than a hundred has been reduced to eighty-two, although the work of the Department has greatly increased in the meantime.

The present system presents yet a further fault which must be remedied. The administrative head of a Department, the lay official, has authority to select the heads of scientific Departments under his immediate control. Being without the necessary qualification to judge of the scientific experience of a scientific worker, it follows that he must, to a large extent, rely upon the judgment of the retiring officer or of other scientific workers of his own choosing. In neither case does it follow that the best man available is chosen. We suggest that some machinery should be put into motion whereby the State could be reasonably assured of the high calibre of its scientific officers. Their selection might, for example, be entrusted to *ad hoc* committees of scientific experts appointed by outside scientific bodies at the request of the Government.

An inter-departmental comparison of the grading and salary scales of scientific workers in the Civil Service would reveal glaring anomalies, but it would occupy too much space in NATURE. In no case do the status, pay, and prospects of promotion of scientific workers compare favourably with those which obtain in the higher clerical grades. Leaving out of consideration the conditions of service of medical men, the scheme lately adopted for scientific workers in the Fisheries Division of the Ministry of Agriculture and Fisheries is the most favourable in the Service. A comparison

between this scheme and that in force for the higher clerical grades is given below:—

Higher Division Clerks, (Administrative Class.)				Scientific Workers.			
		Salary.				Salary.	
Grade		£	£		£	£	
I.	1 post	1000-1200	...	1 post	1000		
..	II. 2 posts	700-900	...	2 posts	650-750		
..	III. 4 "	500-700	...	5 "	450-650		
..	IV. 4 "	200-500	...	13 "	200-450		

(All the above posts carry with them Civil Service bonuses in force.)

Such disparities of pay and prospects must react unfavourably against the recruitment of the best scientific workers to the ranks of Government officers. The best men will be attracted to the administrative class and be lost to science. Last year the Civil Service National Whitley Council published a report on the organisation of the Civil Service in which a comprehensive scheme was put forward for the clerical classes. After considerable delay a technical committee of the same council has been entrusted with the task of preparing a scheme for the scientific and technical classes. In the meantime the issue has been prejudicially affected by the varying schemes put forward by different Departments. There is no apparent reason for the inordinate delay in setting up the technical committee. It would have been more satisfactory to deal with all classes of Civil Servants in one report, like that on the United States Civil Service described in last week's issue of NATURE.

A Great Giver.

Autobiography of Andrew Carnegie. Pp. xii + 385. (London: Constable and Co., Ltd., 1920.) 25s. net.

THE life-histories of remarkable men always have interest and value. Few are more fascinating than that of Andrew Carnegie, who began his business career as a telegraph messenger boy at two and a half dollars a week, and step by step, through many trials and triumphs, became the great steel-master, built up a colossal industry, amassed an enormous fortune, and then deliberately and systematically gave away the whole of it for the enlightenment and betterment of mankind. No doubt the element of chance has some part in such great success as that of Carnegie. But it is only a subordinate part. This autobiography enables us to see clearly enough that it was "character" inborn and nurtured by parents—sturdy and high-principled, though brought by the vicissitudes of business to great poverty, even to actual hunger—which determined Carnegie's career. Character made him