(2) The interatomic distance carbon-selenium in the molecule is 1.96 Å.

(3) The valency angle of selenium is 96°.

A small change in the assumed carbon-carbon distance in the benzene ring has little effect upon the calculated values. Thus for an assumed distance of 1.39 Å. instead of 1.41 Å., the three quantities become 127°, 1.97 Å., 97° respectively.

A full account of the work will be published as soon as time permits.

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¹ Campbell, Le Fèvre, Le Fèvre and Turner, *J. Chem. Soc.*, **404** (1938).

² Higasi, *Sci. Pap. Inst. Phys. and Chem. Res., Tokyo*, **38**, 331 (1941).

³ Wood and Crackston, *Phil. Mag.*, **31**, 62 (1941).

⁴ Robertson, *Proc. Roy. Soc., A*, **140**, 79 (1933).

Publication of Scientific Research carried out in Industry

ONE point bearing on Sir Lawrence Bragg's address on "Physicists after the War" (*NATURE*, July 18, p. 74) which should be noted is the practice of many British firms of refusing publication of research carried out by their staffs. Each year a considerable amount of scientific investigation is carried out by research workers in industry, the results of which remain quite unknown to the scientific world in general. This is generally on account of the unwillingness of industrial companies to allow their competitors to obtain any information which might be useful to them.

One obvious result of this policy is that it reduces the amount of scientific knowledge which is available. The free exchange of information is prevented, and there is a duplication of research work and a general slowing down of the progress of industry. Moreover, the quality of research is always lower the fewer and less qualified are its critics. A worker is inevitably less exact and scrupulous in a research which is written up for a probably unscientific board of directors than he would be if it were published in a technical journal; thus much so-called research carried out in industry and accepted as sound, would be more correctly appraised and acted upon if it were submitted to outside criticism through publication. On the other hand, the results of much excellent work never become known outside the particular company.

Another unfortunate effect is that the applied research worker obtains far less satisfaction from his work than his counterpart in the university, who is able to publish his results. The industrial worker realizes that his company regards his creative activity as being primarily directed towards the enrichment of shareholders, rather than towards the benefit of mankind in general. The objective of the industrial worker is thus inferior to that of the worker in pure science or medicine, and he may eventually react by treating his work merely as a means towards making a living.

The non-publication of research carried out by

private enterprise seems to be far less pronounced in the United States than in Britain. In my view, the vigour and rapid progress of American technical industry can be ascribed very largely to the wealth of information which is available in the American literature of applied science. This volume of activity comes partly from the industrial research worker himself, and partly from university scientific workers who have become interested in the subject in question. The act of publication brings the most recent developments in industry to the notice of the academic worker and allows him to make his own contribution to the various problems which are opened up. There is thus a closer liaison between university and industry than has yet been achieved in Great Britain, where the two groups are often quite ignorant of developments in their respective fields.

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Simplification of Musical Notation

By a slight modification of my suggested new staff¹, I have succeeded in still further increasing the ease of reading music. Following the precedent of the ancient division of the Great Staff of 11 lines, in which the middle *C* line was omitted, I suggest the omission in my new staff of the *two* lines denoting middle *C* sharp and *D* sharp and inserting these as leger lines whenever necessary. Further, to secure symmetry, the three bottom lines Bass *F* sharp to *A* sharp can also be omitted, and inserted as leger lines when required. The staff is thus reduced to 5 lines in each half—no more than in the standard notation.

The limitation of the "Bass Clef" is not likely to be found any disadvantage for two reasons: (1) The extended leger lines in sets of twos and threes present no difficulty in reading, even to the beginner; the readability of the system in this respect is another of its advantages over standard notation. (2) Examination of a wide variety of existing piano music, including hymn tunes, discloses that by far the majority of bass notes fall within the range *C* natural upwards, covered by the new curtailed staff.

Dr. Harrison's comments Nos. 4, 5 and 6² are most easily answered by the following example, showing four bars of Beethoven's Adagio in *B* major (5 sharps), from the "Emperor" Concerto:

The objection that this staff does not show key relationship is of diminishing importance in these days when many compositions are written 'without key', but it can obviously be met by simply stating the key above the staff wherever important key changes occur.

The above was written on August 8, but subsequently I have seen Lieut. Alan G. Smalley's letter in *NATURE* dated August 15. His ingenious suggestion of a 12-note staff having 6 equidistant lines and 6 spaces to the octave is fascinating, but the question whether it would be easier to read than my revised form of staff could only be settled by