DISCUSSION AND CORRESPONDENCE

HIGH TEMPERATURES AND EMISSION FROM GASES

IN view of the discussion between Dr. A. S. King[1] and Dr. G. A. Hemsalech[2] upon the origin of the spectra obtained in the carbon tube furnace, it may be of interest to call attention to the complete absence of emission lines in mercury vapor, argon, nitrogen and hydrogen, when heated to 3200° K. by means of a tungsten filament.

Observations of the heated zone adjacent to the filament while shielding the spectroscope slit from the filament radiation have shown no evidence of emission in the visible region from any of the above gases.

Professor F. A. Saunders was kind enough to photograph the spectrum from a tungsten spiral at 3200° K. operating in mercury vapor at approximately atmospheric pressure in a quartz bulb. He obtained no trace of emission lines, but did find an absorption at λ 2536.

The potential gradient along the wires varied from about 1.5 volt per centimeter in mercury vapor to 15 volts cm. in hydrogen.

These results suggest that the spectra obtained in the carbon tube furnace are neither primarily dependent upon potential gradient nor temperature, but are probably more of the nature of flame spectra produced by chemical reactions between the various elements present in the tube.

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A POSSIBLE RELATION BETWEEN MECHANICAL, ELECTRICAL AND CHEMICAL QUANTITIES

TO THE EDITOR OF SCIENCE: In my note in your issue of November 26, page 509, on "A possible relation between mechanical, electrical and chemical quantities" (?), I regret that by an oversight I omitted to add that this relation applies to a valence of unity, as it is in the case of silver, which element was used in deducing it. For any other valence the atomic weight must of course be divided by that particular valence.

CARL HERING

PHILADELPHIA,
December 2, 1920

[1] *Astrophys. Journal*, 52, 187, October, 1920.

[2] *Phil. Mag.*, 36, 209, 281, 1920; 39, 241, 1920.

REQUEST FOR SEPARATES

IN a note from Professor A. Dehorne, of the Institute de Zoologie, Université de Lille, France, it is stated that the straitened financial circumstances of the university library at Lille permit the purchase of but few biological publications, *La Cellule*, for example, being the only cytological journal received. In accordance with Professor Dehorne's request, may I urge cytologists and other workers in biology to send him separates of their published articles, and thus contribute to the development of biology at Lille. Such contributions can easily be made, and they will surely be appreciated very highly.

LESTER W. SHARP

AN APPEAL FOR PUBLICATIONS FOR CZECHOSLOVAKIA

WITHIN the two brief years of its existence the new Czechoslovak Republic has established two new universities—one at Brno (Brünn) and the other at Bratislava (Pressburg), besides a series of high schools and several thousands of common schools. In addition, the University of Prague finds itself this year with a nearly redoubled number of students, of whom there are now over 10,000. With the generally and greatly reduced exchange value of European currency, it has become exceedingly difficult for the scientific men of these universities to provide themselves with literature published since 1914, and they appeal to their American colleagues for help in this direction. The publications needed are those reporting original research in all branches of science. Sets of reprints of individual investigators, and periodicals, will be particularly valued. Besides these, however, any reprints or scientifically valuable volumes that