

have found the total polarisation P_1^∞ , 44.5 c.c., electronic polarisation P_E , 33.75 c.c., and the dipole moment μ , 0.72×10^{-18} e.s.u. The solutions in benzene were very dilute, the substance being difficultly soluble in benzene. The total polarisation has also been confirmed in carbon tetrachloride and has been found to be 44.13 c.c. The substance is practically insoluble in other non-polar solvents.

Structures (I) and (Ia) should have practically no moment, while structure (Ib) should have an appreciable moment due to the link $>S=S$. The observed moment being 0.72×10^{-18} e.s.u. and hence we assign the structure (Ib) to sulphur nitride, S_4N_4 .

The dipole moment of the link $>S=S$ being unknown, we are studying the dipole moments of other related compounds, with a view to arrive at a more definite conclusion.

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¹ *J.C.S.*, 1936 1645.

On the Correlation between Life-Duration and Respiratory Phenomena

THE paper entitled "The correlation between life-duration and respiratory phenomena," published by Prof. B. N. Singh in the *Proceedings of the Indian Academy of Sciences* (1935, 2B, 387-402), contains several statements and conclusions which require elucidation and, therefore, the following few remarks are offered by way of a contribution towards the same.

On p. 388 (para 4) Prof. Singh states: "As growth in plants is generally localised in more or less definite regions known as meristems, the bulk of the plant body consists of what may be termed the "inert" or "non-living materials". If the words "inert" and "non-living" were

omitted and the word "non-growing" substituted in the preceding sentence, the statement would be correct to an extent. This is, however, a minor point and we shall now examine the conclusions arrived at from the experimental data presented.

On p. 394 (para 3) the author concludes: "The experimental findings thus lead us to the conclusion that the relatively greater steepness of the curve of respiration is correlated with the brevity of the life-duration, while flatness in the same corresponds to increased life duration."

We have nothing to say against this conclusion, but in the Section B, after again summarising the experimental observations, the author states (p. 395): "Thus from the observations recorded, the conclusion is forced upon us that the steeper the fall in the respiratory index of the actively growing region of the meristem, the shorter the life-cycle." He then continues: "The shortening in the longevity of the plant, thus, it would seem, is a function of the rate of respiratory energy release." There is here a change of position. After concluding that these two processes are correlated the author immediately suggests that one is a function of the other, but this does not necessarily follow.

The author further cites some data on the initial rates of respiration and the average rates of respiration during the life-cycle, in support of his conclusion but they show nothing more than a correlation between these two rates.

In conclusion it may again be emphasised that we agree with Prof. Singh so far as the correlation between the two processes, *viz.*, life-duration and respiratory rate, but his thesis on "the role of respiration during the life-cycle of a single crop in determining the duration of life", remains only a speculation.

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