noted that there is good agreement between known molecular weights and molecular weights estimated by radiation inactivation over a considerable range of weights, but that for molecules smaller than 10.000 the weight is often over-estimated. In the instances when the ionization *cluster* was considered to be the inactivating event for LVP, the estimated molecular weight was considerably greater than the known weight of 1078[8]. However, previous studies[10–12] have indicated that certain procedures may cause polymerization. It is possible, therefore, that radiation may have caused polymerization. The fact that the loss of biological activity follows an exponential curve, however, suggests that a homogeneous population of molecules was present. If one ionizing event destroyed a polymer and the molecules existed in numerous degrees of polymerization, then significant deviations from linearity would be expected. It therefore appears most likely that the inactivating event is a single ionization in this instance and that each ionization occurring within the confines of a LVP molecule destroys its biological activity.

In a previous study of adrenocorticotropin (ACTH)[4], it was observed that radiation in air resulted in loss of activity at a rate compatible with a much larger molecule than the rate of loss in a reduced argon atmosphere. ACTH may be inactivated by exposure to ozone alone, so that the increased loss of activity in air was felt to be summation of the effects of radiation and ozone inactivation (ozone is formed when ionizing particles pass through oxygen). For this reason studies were performed in the absence of oxygen for ACTH and, also to exclude this possibility, for LVP. The rate of inactivation of LVP also appeared slightly more rapid in air than in argon.

The data reported demonstrate actual destruction of amino acid residues. Interestingly, even though cystine was greatly decomposed, cysteic acid was not detected. Previous studies[13–15] on purified human and bovine fibrinogen have shown that radiation results in fragmentation of the molecule. The energy released by an ionizing event is relatively large (24 eV) in relation to the energy of chemical bonds[9] and thus it is not surprising that rupture of such bonds occurs.

Conclusions. The biological activity of lysine vasopressin is destroyed by exposure to ionizing radiation. Using the conventional target theory approach and assuming each ionization cluster is the inactivating event, estimations of molecular weight are considerably higher than actual molecular weight. If it is assumed that each ionizing event is also an inactivating event, estimates of molecular weight are in agreement with the known molecular weight. Destruction of amino acids occurred during the process of radiation.

Résumé. De la lysine vasopressine de haute pureté a été irradiée à l'air et dans une atmosphère d'argon sous une pression réduite à l'aide de doses progressives d'électrons monoénergétiques de 2 MeV. La vaso-constriction a été mesurée chez le rat et cette activité a diminué d'une manière exponentielle en fonction de la dose d'irradiation administrée. En utilisant la théorie anticathode de LEA, le poids moléculaire a été estimé à partir du taux de perte de l'activité. En supposant que chaque *ionisation* effective avait lieu à l'intérieur d'une molécule, le poids moléculaire estimé à partir des valeurs obtenues dans l'air a été de $1{,}1 \cdot 10$ (95% se situant de $9{,}0 \cdot 10^2$ à $1{,}3 \cdot 10^3$), et à partir des valeurs obtenues dans l'argon, il a été de $7{,}1 \cdot 10^2$ ($5{,}3$–$9{,}0 \cdot 10^3$). En supposant que chaque *faisceau d'ionisation* prenait place à l'intérieur d'une molécule, le poids moléculaire estimé était de $3{,}0 \cdot 10^3$. Des analyses d'acides aminés de la lysine vasopressine irradiée à $2{,}5 \cdot 10^8$ et à $10{,}0 \cdot 10^8$ rads ont été faites et comparées à celles effectuées sur l'hormone non traitée. Aux deux dosages d'irradiation, la destruction des acides aminés a été observée. La cystine a été l'acide aminé qui a été détruit dans la plus grande proportion; plus des $^2/_3$ détruits à la plus grande dose d'irradiation étudiée. On a donc conclu que dans le but de faire des estimations des poids moléculaires des polypeptides aussi petites que la vasopressine, on devrait faire des suppositions toutes différentes de celles qui avaient été conventionnellement utilisées pour les polypeptides plus grandes et pour les protéines. En plus de la fragmentation des protéines, l'irradiation semble provoquer la destruction des acides aminés particuliers.

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CORRIGENDUM

W. H. STAFFORD and J. P. WARD: *The Occurrence of 4-Ethyl and 2-5-Dimethylazulene in Cracking Column Products*, Experientia 22, fasc. 2, p. 87 (1966). On page 88, line 14 reads correctly as follows: '(found 11.9% N)[9]'. Footnote 7 reads as follows: 'The TNB complex has the same m.p. as that of 1, 4-dimethyl-8-isopropylazulene TNB complex[15].'. Footnote 9: '**cf.** N analysis of TNB complex of III'.