per cent. at temperatures of 0° to 20° C.,[2] whereas the percentage of oxygen in normal atmosphere is around 21 per cent. In studying the gases obtained from fruit and vegetable tissues many investigators evidently consider that the gas obtained by subjecting the tissue to a partial or almost complete vacuum is obtained only from the intercellular spaces. According to Henry's law,[3] the concentration of the dissolved gas in solution is directly proportional to the concentration in the free space above the liquid. It is evident that in subjecting tissue to a partial vacuum considerable amounts of gas are extracted from the liquid contained in the cells as well as from the intercellular spaces. Magness[4] has mentioned this possibility. The difference in solubility of gases would also account, at least in part, for the very high CO_2 content in tissues after exposure to a much lower concentration of CO_2, as it is much more soluble in water than either O_2 or N_2. The writers have found that exposing Kieffer pears to an atmosphere containing 5.3 per cent. CO_2 at 60° F. resulted in the presence in the internal gases of 36 per cent. CO_2, whereas the gases from check lots in normal air had 18.6 per cent. Gerhardt and Ezell[5] obtained nearly 80 per cent. CO_2 from the gas of Bosc pears after a 24-hour exposure of the fruit to 35 per cent. CO_2 at 65° F. The gas extracted from Jonathan apples subjected to the same treatment contained nearly 50 per cent. CO_2. The higher CO_2 content in the gases obtained from pears was probably due to a higher proportion of the gas being extracted from the liquid contained in the fruit, as there is less intercellular space in pears than in apples.

It is possible that the gases dissolved in the solution within the cell are of more physiological significance than those contained in the intercellular spaces, as the dissolved gases are in more intimate contact with the protoplasm. For example, Heilbrunn[6] considers that the negative charge on the surface of protoplasm is due, at least in part, to the diffusion of carbonic acid from the interior of the cell.

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[2] C. D. Hodgman, "Handbook of Chemistry and Physics." Twentieth edition, pp. 890–891. Chemical Rubber Publishing Company, Cleveland, Ohio. 1935.

[3] F. H. Getman and F. Daniels, "Outlines of Theoretical Chemistry." Fifth edition, p. 141. John Wiley and Sons, Inc. New York. 1931.

[4] *Loc. cit.*

[5] F. Gerhardt and B. D. Ezell, SCIENCE, 80: 253–254, 1934.

[6] L. V. Heilbrunn, "The Colloid Chemistry of Protoplasm." Colloid Symposium Monograph. III: 135–151. 1925.

MANGE IN GUINEA PIGS

IN SCIENCE, for March 27, 1936, there appeared a short article on "Sulphocyanate Treatment of Mange in Guinea Pigs."[1] A safe and simple procedure has been used in our laboratories in treating mange in guinea pigs, rabbits and dogs. Raw linseed oil is applied to infected areas or the entire body, using a soft two-inch paint brush. The treatment is repeated at intervals of a few days. The animals "shampoo" themselves thoroughly; the oil absorbed is nutritive and mildly laxative. Hairs seemingly not infected will fall. We have had animals, completely denuded, make good recovery in body weight and return of good hair growth after treatment. Boiled linseed oil must not be used. The idea was borrowed from the custom of feeding flax seed to horses in the early spring in order to aid shedding of their winter coats of hair and from the fact that linseed oil is an excellent detergent for body surfaces soiled by heavy greases.

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PROTECTION OF EYEPIECES

THE upper lens of some makes of microscope eyepieces is set below the level of the surface of the casing for protection. Unfortunately, this also renders them very difficult to clean properly. Much of this cleaning can be avoided if a circular cover-slip 20 to 25 mm in diameter is placed on the upper surface. These cover-slips are easily removed and polished and will not interfere perceptibly with the use of the instrument. The rim of the eyepiece prevents them from sliding off when the microscope is tilted.

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[1] 83: 2152, 304, 1936.

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