In practice the two reactions produced two different products.

From Ia a flavone m.p. 138–139° (III) (Found: C, 78.10; H, 5.61. Calcd. for $C_{19}H_{16}O_3$: C, 78.06; H, 5.52) from I a different flavone m.p. 222–223.5° (IV) (Found: C, 78.15; H, 5.29. Calcd. for $C_{19}H_{16}O_3$: C, 78.06; H, 5.52) were isolated.

These results must be ascribed to the formation of two different intermediate β-diketones. As the Baker-Venkataraman rearrangement product was yellow, it might be formulated, according to an observation of OLLIS and WEIGHT[5], as ω-benzoyl-2-hydroxy-3-propionyl-acetophenone (II). Consequently it may be inferred that III is 6-methyl-8-propionyl-flavone and IV the corresponding isomer, 3, 6-dimethyl-8-acetyl-flavone. These assignments were proved by alkaline hydrolysis of III and IV, which gave 3-propionyl and 3-acetyl-5-methyl-salicylic acids respectively, as well as aceto and propiophenone, characterized as 2, 4-dinitrophenyl-hydrazones. The structures of the two salicylic acid derivatives were confirmed by comparing them with authentic samples. The formation of two different flavones therefore, depends on the experimental conditions, i.e. on the different temperatures. At 90°, in the Baker-Venkataraman rearrangement, the migrating benzoyl group is directed to the α-carbon atom of the acetyl chain; at 180–190°, in the Kostanecki-Robinson acylation, the same group is directed to the α-carbon atom of the propionyl chain.

Riassunto. Si riferisce sul diverso comportamento del 2-propionil-4-metil-6-acetilfenolo nella acilazione secondo Kostanecki-Robinson e nella trasposizione di Baker-Venkataraman.

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Breathing Fluid

Foetuses of mammals, including human foetuses, 'breathe' amniotic fluid[1,2]. Newborn mammals may survive complete submersion for considerable periods of time, dependent upon their stage of development. Signs of life have been observed in puppies up to 54 min after submersion in water[3]. Young rats have been reported to continue making respiratory movements for more than 40 min when, shortly after birth, they were submerged in water at 37°C[4]. This tolerance to asphyxia of the newborn, however, diminishes rapidly with age.

It has now been found that adult mammals submerged in a salt solution may breathe fluid for more than 2 h provided they obtain enough oxygen.

Experiments were done on adult white mice. In controls, all respiratory movements ceased approximately 1 min after submersion in saline[5] at 25°C. Animals drowned in 600 ml of saline containing 0.1% of hydrogen peroxide lived from 3 to 5 times as long. Unanesthetized mice submerged in 1500 ml of saline at 25° C which had been saturated with oxygen at 8 atmospheres pressure absolute (8 ata) in a specially constructed transparent tank, continued breathing fluid for periods lasting up to 40 min. Mice anesthetized with pentothal lived up to 2 h and 25 min after submersion in 1500 ml of saline which, after equilibration, initially contained approximately as much oxygen as ambient air at sea level[6].

These experiments clearly demonstrate the potential biological adaptability of adult mammals to a marine environment such as previously existed during ontogenesis and phylogenesis.

Zusammenfassung. Ausgewachsene weisse Laboratoriumsmäuse atmen untergetaucht in 600 ml einer isotonischen Salzlösung bei 25°C 3 bis 5 mal länger, wenn der Flüssigkeit 0,1% Wasserstoffperoxyd zugesetzt wird. In 1500 ml einer isotonischen Salzlösung, die bei einem Sauerstoffdruck von 8 atü (25°C) equilibriert wurde, können sie über 2 h lang Flüssigkeit «atmen».

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Free Amino Acid Pool in Strains of *Shigellae*

The existence of an internal amino acid pool in bacteria has been shown by several investigators[1–10]. MIZUNO et al.[4] first showed the presence of free amino acids within the cells of dysentery bacilli. In the studies on the metabolic activities of members of the genus *Shigella*[11], a number of amino acids were noted in the free amino acid pool of three strains of dysentery bacilli. The composition of the 'pool' of these strains grown in different media is reported in this communication.

The strains used were *Sh. flexneri 2a* (NCTC 8519), *Sh. flexneri 1a* (NCTC 8516), and *Sh. dysenteriae 6* (NCTC 6342) and were chosen because of their different nutritional characters[11]. The minimal medium in which the strain of *Sh. flexneri 2a* showed prompt growth was a chemically defined basal medium[12] supplemented with

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