

Partie phasique. Les fibres musculaires phasiques ont un diamètre moyen d'environ 12 μm et apparaissent donc plus petites que les toniques. Elles sont étroitement juxtaposées et l'espace extracellulaire conjonctif est beaucoup plus réduit que dans le muscle tonique (Figure 2). Le réticulum sarcoplasmique est caractérisé par l'abondance des citernes sous-sarcolemmales (dyades). Les mitochondries sont nombreuses, situées également dans le sarcoplasme périphérique, à proximité des citernes. On ne peut déceler qu'exceptionnellement la présence de prolongements télégliaux accompagnant les neurites et on ne voit pas plus d'éléments interstitiels que dans la partie tonique du muscle. Les neurites, qui sont donc toujours nus, forment des jonctions de type synaptique avec les myocytes (Figure 2, encart), apparemment plus fréquentes que dans la partie tonique de l'adducteur. On n'observe pas d'expansions musculaires au niveau de ces jonctions.

La partie phasique de l'adducteur de l'anodonte est donc dépourvue de tissu glio-interstitiel, tout comme ces muscles phasiques qui forment le bulbe buccal des Doridiens. Au contraire, la partie tonique renferme un tissu glio-interstitiel comparable à celui des muscles toniques des Doridiens, même si chez l'Anodonte ce tissu est réduit à une téléglie. Cette différence entre un mollusque d'eau douce et des mollusques marins est compatible avec l'hypothèse qui fait intervenir ce tissu dans les régulations ioniques^{1,2,8}. On doit aussi souligner l'extension des espaces extracellulaires dans les muscles toniques comme leur restriction dans les muscles phasiques de l'un et l'autre groupes. Ces constatations amènent à supposer que le développement du tissu glio-

interstitiel accompagnant l'innervation d'un muscle dépend du type de contraction de ce muscle et/ou du développement des espaces extracellulaires dans ce muscle. Il faut noter que ces deux facteurs, qui sont peut-être liés, agissent conjointement sur la composition ionique du fluide extracellulaire⁹.

Summary. The structure and nervous supply of the tonic and the phasic parts of the posterior adductor muscle of *Anodonta* were studied by electron microscopy. A teloglia accompanies the nerves of the tonic part, while this tissue is absent from the phasic part of the muscle. This distribution is compared to the parallel situation in marine gastropods; and it is tentatively proposed that the development of the gliointerstitial tissue in the muscle of a mollusc depends on the type of contraction of this muscles and/or the development of the extracellular spaces.

J. AMSELLEM, G. NICAISE et G. BAUX

*Laboratoire d'Histologie et Biologie tissulaire,
Université Claude-Bernard,
F-69621 Villeurbanne (France), 7 Mai 1973.*

⁸ J. E. TREHERNE, A. D. CARLSON et B. L. GUPTA, *Nature*, Lond. 223, 377 (1969).

⁹ Ce travail a été réalisé au sein de l'Equipe de Recherche associée au C.N.R.S. No. 183 et au Centre de Microscopie Electronique Appliquée à la Biologie de l'Université Claude Bernard.

Histopathological Abnormalities in the Skin of Patients Suffering from Chronic Pulmonary Emphysema

In 1968, VACCAREZZA noticed the frequent changes in the skin of patients suffering from chronic pulmonary emphysema, principally xeroderma and atrophy. This observation induced the authors to make a histopathological study of the skin of these patients and, at the same time, confirm the emphysema by functional respiratory tests: vital capacity, maximum respiratory

capacity, air velocity index and air flow during the first second, and before and after administration of bronchodilators.

In 43 patients of both sexes with pulmonary emphysema, confirmed by a general medical examination, roentgenographic examinations and functional examinations were made. Their mean age was 43 years, their

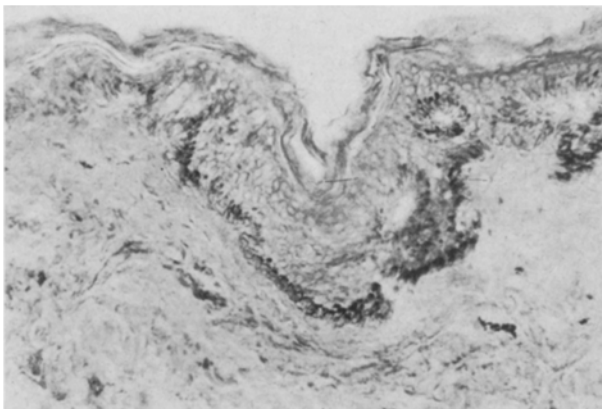


Fig. 1. Emphysema: 21-year-old patient with diffuse orthokeratotic hyperkeratosis. The Malpighi mucous body shows disappearance of the granulous layer. The spinous and basal layers are normal. Normal dermis. Staining: heamatoxylin-eosin.

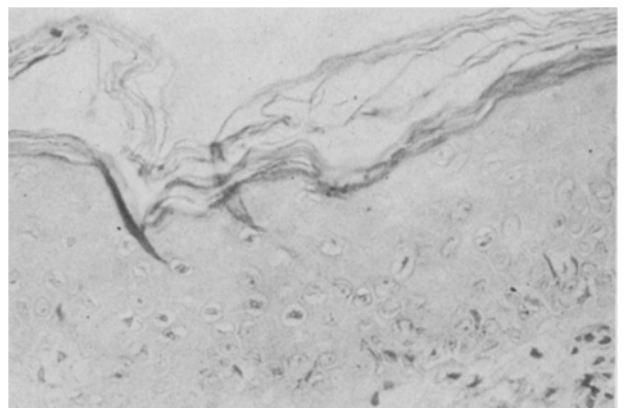


Fig. 2. Emphysema: 18-year-old patient. The same appearance as Figure 1. The absence of the granulous layer is noticeable. Staining: heamatoxylin-eosin.

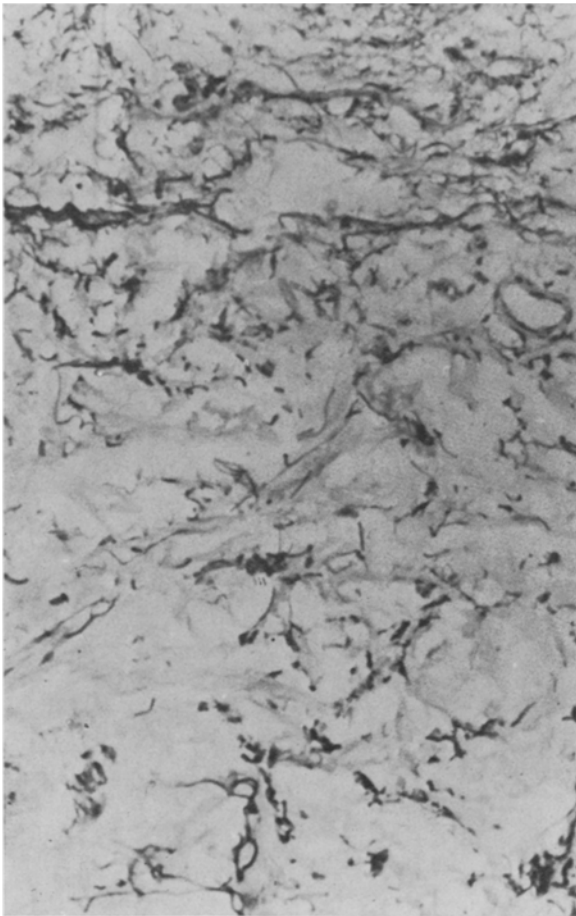


Fig. 3. Emphysema. 24-year-old patient. In the upper dermis, some enlarged elastic fibres can be seen (elastosis). In the middle dermis, there is decrease in the number of elastic fibres (elastolysis) Staining: Gomori's fuchsin-resorcinol.

Contingency analyses

	Emphysema	Asthma	
Normal skin	3	109	112
Xeroderma	40	6	46 ^a
Total	43	115	158

^a $X^2 117.2$ ($P \ll 0.001$) shows a close relationship between xeroderma and emphysema on the one hand and normal skin and asthma on the other. (Computation Department of the Neurobiological Institute)

age limits 12 and 64 years. In 40 cases histological changes were found in skin taken from the inner surface of the forearm where the skin is protected from external influences that could change its structure. The following techniques were used: staining with haematoxylin-eosin, McManu's PAS technique for collagen fibres and Gomori's fuchsin-resorcinol for the elastic fibers.

The changes found were hyperkeratosis, diffuse orthokeratosis of Malpighi's mucous body, and pilose infundibula. The mucous body showed atrophy of the crests and of intercrestal sectors, and less common acantosis of the interpapillary crests with fusion of neighbouring crests. The thickness of the granulous layer was diminished, and in some cases completely absent, imitating a true ichthyosiform picture. The pilosebaceous skin adnexa were hypotrophic and the sudoriparous glands hypertrophic. There were no changes in the collagen fibers. Finally, it can be said that histopathology of the skin of patients suffering from emphysema showed none of the follicular plugs that are found in patients suffering from ichthyosis and that the elastosis is different from that found in senile patients.

A comparative study was carried out simultaneously on 109 patients suffering from allergic asthma, who had no signs of clinical roentgenological or functional emphysema. Hyperkeratosis was found in three asthmatic patients, but in the rest the skin was normal.

Contingency analyses were done for asthma and emphysema on the one hand normal skin and xeroderma on the other. The $X^2 = 11.2$ was very highly significant ($P \ll 0.001$), indicating a very close association between xeroderma and emphysema on the one hand and normal skin and asthma on the other. The histological changes found in emphysematous patients could possibly be related to the similar process in pulmonary tissue where degeneration phenomenon, alveolus and alveolar ducts can be seen¹.

Résumé. On a étudié l'histopathologie de la peau chez 43 sujets ayant un emphysème pulmonaire chronique. Chez la plupart de ces malades, on a observé des lésions cutanées de hyperkératose ortokératosique diffuse du corps muqueux de Malpighi, l'épaisseur de la couche granuleuse diminuée ou absente et des phénomènes dégénératifs des fibres élastiques. L'analyse de contingence a montré des différences hautement significatives ($P \ll 0.001$) par rapport aux malades asthmatiques sans emphysème pris comme témoins.

J. R. VACCAREZZA, H. G. CRESPI and O. BIANCHI

Laboratorio de Investigaciones Fisiopatológicas, Callao 1382, Cátedra de Tisiología, Facultad de Medicina, Buenos Aires (Argentina), 30 April 1973.

¹ R. R. WRITH, Am. Rev. resp. Dis. 83, 425 (1961).

Decondensation of Nuclear Chromatin under the Influence of Tris Buffer

A characteristic feature of the interphase nuclei of Eucariota is the occurrence of chromatin as well in a condensed as in a dispersed form, the latter being especially involved in RNA synthesis, while the former remains more inert¹. So experimental conditions which provoke any changes in chromatin pattern are of great interest from the biological point of view.

Materials and methods. The experiments were performed on liver of Wistar rats. Immediately after removing, the tissue was cut into thin slices and immersed in the exper-

¹ V. C. LITTAU, V. G. ALLFREY, J. H. FRENSTER and A. E. MIRSKY, Proc. natn. Acad. Sci. USA 52, 93 (1964).