

## On the Sievelayer of Babina Subaspersa Barbour (Otton Gaeru)

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### INTRODUCTION

The sievelayer of the frog skin is a special layer lying in the upper part of compact layer.

Ebert (1869) had already stated that the sievelayer of *Hyla arborea* is consisted of minute granular cells with nuclei and minute processes and that of *Rana nigromaculata* is thick, and also he surmised that the sievelayer functions in the tapetum fibrosum of a mammal's eyes from the fact that the sievelayer gives interference against weak light. The name of sievelayer is originated by Kastoschenko (1882) and he described that in the case of *R. nigromaculata*, the sievelayer is dyed rosy in its granular substance with madder.

Jimbo (1951) had stated that the sievelayer is found in anula, being thick in *R. catesbiana*, moderately thick in *R. nigromaculata*, *R. japonica*, *R. rugosa*, *R. limnocharis*. On the test of *R. nigromaculata*, the sievelayer starts to grow on one side of the canal in the compact layer when *R. nigromaculata* starts to live on land after complete its metamorphosis. On the test of longitude section dyed with hematoxylin-eosin, the sievelayer is seen to grow around the mouth of canal in the compact layer at the point of the one-third thickness up to the mouth of it. Also on the test of cross section, one side of the canal mouth is dyed purple clearly, radiating towards outside. This radiating processes in the sievelayer grow more and more, occupying the spaces between the processes and enlarging gradually into uncertain shape. The enlarged sievelayer is joined to each other with the near-by ones and thickening gradually after that.

Furthermore Jimbo described folgende report on *Bufo vulgaris* in 1952. Small clumps were found in the stratum spongiosum of the dorsal skin of *bufo vulgaris*. The clumps stain themselves metachromatic with toluidin blue, and show a remarkable blue fluorescence. They are located merely in lacunae of connective tissue and are not surrounded by specially organized cells. There are no blood vessels in the adjacent connective tissue. These small clumps seem to come from the sieve layer.

Later G nder (1954), Hama and Obita (1959) by the aid of paperchromatography reported the nature of the sieve layer very likely to be pterin.

## MATERIAL AND METHOD

A *Babina subaspersa* Barbour (Otton Gaeru) is caught in Amamioshima Island. Its head-torso length is 12.5 cm (Fig. 1 and 2).

After fixing it in formalin the authors took the pieces of the skin out of the middle part of their back and abdomen. The authors embedded them in paraffin, cut into  $10\mu$  sections and stained with hematoxylin and eosin.

## RESULT

In the compact layer rough connective tissue is seen right under the sievelayer and still under that there is a layer of the fibrous bundle of the connective tissue. The sievelayer falls in here and there in the shape a funnel through which the connective tissue is running. Accordingly if the frog skin is cut crossway and dyed with hematoxylin, the oblong holes like sieves are seen here and there on the continuous level of the sieve layer. The fibrous bundle reaches the epidermis through the sievelayer.

As to *Babina subaspersa* Barbour (Otton Gaeru), its sievelayer was observed to consist of lines of a great variety of thickness (Fig. 3, 4 and 5). In Japanese frogs (*R. nigromaculata*, *R. japonica*, *R. rugosa*, *R. limnocharis* and *R. catesbiana*), however, as Jimbo, G., one of the authors of this paper reported in his thesis in 1951, their sievelayers observed to be regular crescent forms, but not such irregular figures mentioned above.

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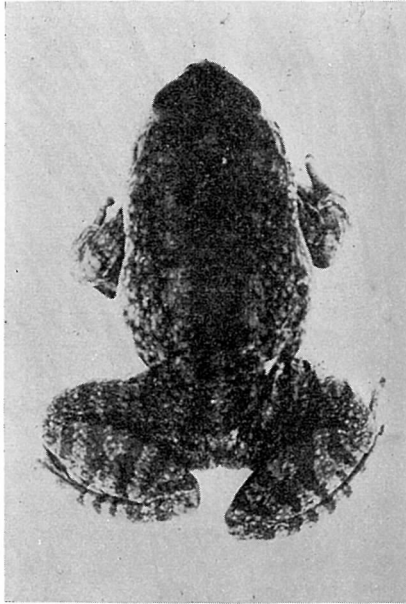


Fig. 1

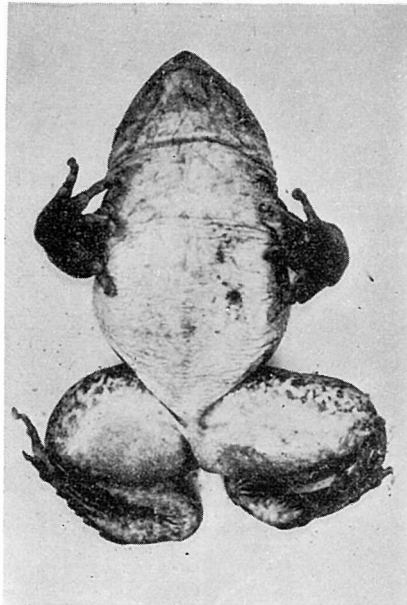


Fig. 2

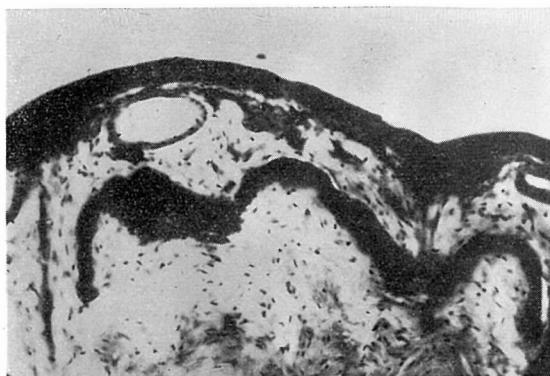


Fig. 3

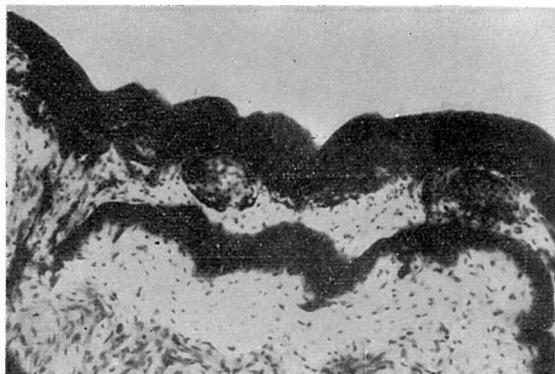


Fig. 4

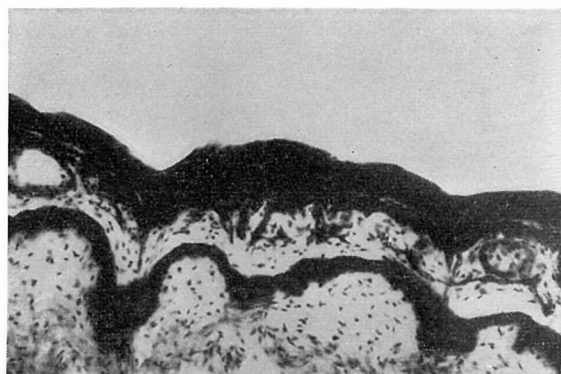


Fig. 5