Research Note

Faulty Eruption of the Fore-limb in *Hyla aurea*.

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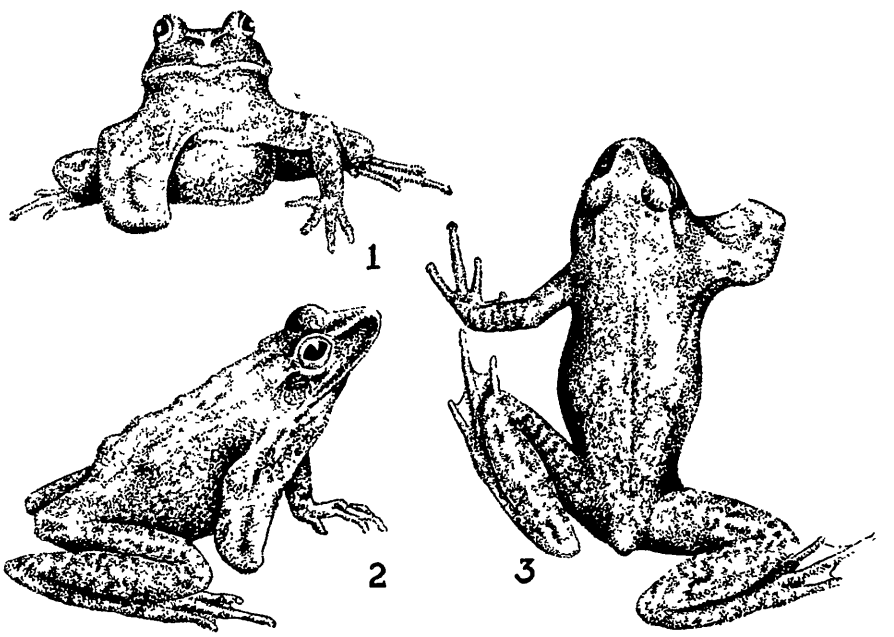
[*Received by the Editor, September 5, 1956.*]

Abstract

The entire right fore-limb is enclosed without adhesions in a fold of skin with the limb moving over essentially the normal range but in the ventral and lateral subcutaneous lymph spaces which are in wide continuity.

A specimen of *Hyla aurea* (Lesson) in which faulty eruption of the right fore-limb has resulted in the limb being located in subcutaneous lymph-spaces and enclosed in a non-adherent fold of skin, was sent to us by Miss R. J. Wells, of Masterton, in early December, 1954 The specimen was a fully grown frog, well-nourished, active and incapacitated only in that it had lost the grasp of the right hand. Developmental abnormalities involving the limbs of frogs are known in the case of supernumerary limbs which, while rare, come relatively frequently under observation since so many frogs are examined each year in biological institutions in all parts of the world; but otherwise congenital abnormality of the limbs seems unrecorded In spite of the known interest of one of us in teratology which has provided many specimens in the past twenty years, the present case is unique in our experience, which is the more remarkable because in the life-history of each frog the process of limb-eruption takes place, and it would be reasonable to expect some slight incidence of failure or faultiness in the process higher than is the present indication.



Text-figs. 1–3.—Anterior, lateral and dorsal views of a specimen of *Hyla aurea* having faulty eruption of the right fore-limb.

The specimen measures 72.0 mm from the tip of head to the free end of the urostyle. The left fore-limb and hand are normal, but at first sight the right fore-limb appears to show an extensive webbing (Fig. 1) since there is a broad flat fold of skin extending from the dorsum of the hand across to the mid-line of the throat and terminating close to the anterior end of the sternum. The skin appears as normally applied to the other aspects of this limb. After killing, a median longitudinal incision was made from the pelvic symphysis to the mandibular symphysis, and the flaps gently reflected.

The general muscular anatomy of the ventral aspect of the gular, pectoral and abdominal regions was quite normal on both sides. On the left side, the mm. abdominales, the m. pectoralis sternalis and the m. pectoralis abdominis form the usual complete triangle and the lateral margin of the m. pectoralis abdominis is attached for its full length to the skin by the septum dividing the ventral from the lateral subcutaneous lymph-space. On the right, this septum is present along only the posterior half of the muscle so that on this side the ventral and lateral lymph-spaces are freely open one into the other and also fully continuous with the lymph spaces about the fore-limb, none of which are defined by the usual septa. The pectoral septum across the girdle is present as usual, but the septum of the thoracic lymph-space anterior to this septum is incomplete laterally over the shoulder. Essentially, the condition of the septa at the shoulder is that the axillary lacks continuity with the ventral septum. Thus there is provided a large subcutaneous space in which the naked arm is situated and in which the arm has full opportunity for movement.

The skin covering the limb is greatly extended into a rather triangular fold with a definite pocket at the apex, and this contains the hand. The hand slides with ease within the fold and is without adhesions to the skin. It can be freely moved anteriorly and posteriorly in the lateral lymph-space and down into the ventral lymph-space so that there is no significant barrier to movement over the normal range though obviously the usual range of movements was performed with the limb in the extended ventral lymph-space.

The segments of the right and left fore-limbs are equal. The musculature of the right arm and fore-arm are fully developed, although the fingers of the right hand are completely closed into the palm and immobilised in this position by abundant adhesions. Other than this latter, the condition of the two limbs is the same.

Alive, the specimen was an active healthy frog showing no obvious abnormality of movement or of posture when sitting. The right arm had full movement from the groin to the level of the front of the head and medially as well as laterally. When crawling there was no falter in movement, but when landing after a jump, the right limb did not as readily take the load as did the left. The general impression was that the abnormal position of the limb was in no way a significant impediment to ordinary locomotion, and the only penalties were that since the grip of this hand was lost the limb was useless in climbing or in such actions as wiping the face.

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