

ON *HYLA SQUIRELLA* A BATRACHIAN,—NEW TO THE PROVINCE.(See *Proceedings*, Page 2.)

IN my paper on the Reptilia of Nova Scotia, read before the Institute in May, 1865, the only species of tree frogs then known to be inhabitants of the Province were published as *Hyla versicolor* and *Hylodes Pickeringii*. Through the assiduity of Mr. Arthur Silver, I am now enabled to add another species to the list, viz.: the Squirrel tree Frog, or Little Peeping Hyla (*Hyla squirella*).

It appears that this little frog is very widely distributed over the North American continent. It has been traced as far north as the State of Massachusetts. Storer included it in his report upon the zoology of the State. He, however, appears never to have seen one in a living state, and only made his remarks upon a dried specimen which had been taken at Roxbury. We should therefore consider ourselves fortunate in being able to add to our number a form which would appear to be rare in the northern portion of the United States. It is common in the Southern States; but Dr. Holbrook, who published some years ago an elaborate work upon North American Herpetology, considered the northern form to be a distinct species from that of the south. Dr. Gunther, the compiler of the catalogue of Salient Batrachians in the collection of the British Museum, who is considered our most able herpetologist, places the New York and Georgian animals together. We must therefore conclude that, if any difference exists between them, it is too slight to allow of a separation to be made. The northern squirella, however, is somewhat smaller in size than the southern. Le Conte states that it is generally found under logs and bark of decaying trees, but in the case of our Nova Scotian specimen it differed in habit, being found resting on a leaf. Le Conte, however, most probably procured specimens in autumn, when the tree frogs were taking to winter quarters, and this may account for his finding his specimens under logs and bark of trees,—positions which would never be resorted to by arboreal species possessing fingers and toes terminating in rounded viscous pellets especially suited to a life among foliage.

The tree frogs reside habitually among the foliage of trees, among which they hop and leap almost with the agility of the birds that tenant the groves conjointly with them.—They are able to cling to the leaves on which they alight with exact precision, and to walk on them in all positions, and even on their under surfaces without falling off,—just as a fly alights on the ceiling of a room, and rests or crawls there. Each finger and toe, for so we will name the digits of the fore and hind feet, is dilated at the tip with a circular pallette or pad, varying in size in different genera; these little cushions are, it is true, moistened with a glutinous fluid, as is the whole surface of the body; but this gluten has been proved not to be the only means by which the frog is enabled to cling to perpendicular or other singular positions; but that the pallettes act as suckers, being sustained in their position by the pressure of the atmosphere, a vacuum being produced beneath them, or removed at the will of the animal.

The tree frogs differ not only in size and general appearance from the frogs proper, but also in the formation of their cuticle. The skin of the under surface, instead of being smooth as in our common green frog for instance, is covered with granular glands, pierced by numerous pores, through which the dew or rain spread on the surface of the leaves is rapidly absorbed into the system, and reserved to supply the moisture needful for cutaneous respiration. In connection with this system of respiration some curious facts have been brought to light by experiments with tree frogs kept in confinement. A tree frog, taken from its cage and placed upon a board sprinkled with water, has been seen to apply its body as close as possible to the moist parts, and from this absorption, though in an emaciated state before, has become plump. A frog that had not been allowed to enter water during the night was weighed and then immersed. After it had

remained half an hour in the bowl it came out, and was found to have absorbed nearly half its own weight in water.

The geographical distribution of tree frogs over the globe gives to America the majority of species known to exist, for of 64 species described, no less than 37 are found on our continent,—and, of the remainder, one is found in Southern Europe; five are peculiar to Africa; eight to Asia, and ten to Australia and the Indian Archipelago.

The Hylodidæ, of which our Pickering's Hylodes is a member, are peculiar to the American continent and West Indian islands, and of this family eight species are known to science. I may remark that the Hylodes differs from the Hyla in having the fingers free while the latter has them more or less webbed generally, though not always. The toes in the Hylodes are free, while in the Hyla they are, with the exception of one species, broadly webbed. In the Hylodes also the disks are small, while in the Hyla they are very conspicuous.

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CRUDE NOTES ON STORMS, AND HOW TO NOTE THEM.

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If the equator be considered a region of heat and moisture, and the poles of the earth regions of atmospheric condensation, precipitation, and frost, the 90° which separate these parts of the earth must necessarily be subject to various conditions of temperature, arising not only from change of seasons, but, in particular, from the direction of the wind; for, as all winds from equatorial regions are warm winds, rarified by heat, and charged with evaporation, so all winds proceeding from either of the poles, will be cold winds, comparatively devoid of heat and moisture. Consequently, a Barometer, placed in any intermediate latitude, will *rise* when the condensed and heavier atmosphere of the polar regions approaches it, and vice versa, *fall*, when in contact with the rarified, moist, and lighter atmosphere from the regions of the equator.

Thus do the extremes of heat and cold govern the atmospheric circulation of the globe—the superabundant heat and moisture of the equator flowing towards the poles, and the dry, condensed atmosphere of the frozen regions overflowing towards the equator.

If we examine the lettering of the Barometer prepared under the instructions of the late Admiral Fitzroy for the use of our sea-going population, and which we may presume to represent his personal experience on this point, so far as the northern hemisphere is concerned, we find all the indications for a *rise* to be northerly, or what may be termed polar,—while on the opposite side the indications of a *fall* are entirely of a southern or tropical character, and accord precisely with the principles I have now endeavored to lay down. The lettering below this, extending to the bottom of the scale, is exceptional, purely cyclonic in character, and therefore not applicable to the ordinary currents of atmosphere which prevail in every quarter of the globe.

We are still imperfectly acquainted with the nature of the cyclone or revolving storm. That these storms are generated by heat, within certain parallels of latitude, extending around the entire globe, appears to be well authenticated. In the northern hemisphere this region may be said to extend from the 10th to the 20th degrees of latitude, and is separated from a similar zone in the southern hemisphere by the great equatorial belt of calms and constant rain.