

7 and 8), the variations in the one point, the number of anal rays for each locality where a sufficient number of specimens were obtained. It will be seen that while the curves for different localities in some cases resemble each other closely, there are no two which are exactly alike. In other words, each locality has its own variety, which in the aggregate is different from the variety in every other locality.

In order to have these curves give exact results an equal number of specimens ought to have been taken from each locality, but this was impossible, and the curves are therefore based on different numbers of specimens. The highest point would probably in no case be moved either to the right or to the left by an examination of a larger number of specimens, but the width of the curve would probably be greater and the height along the different perpendicular lines might be greater or less. In other words, the smaller the number of specimens the higher and narrower will be the curve.

There are presented three curves for three localities with different altitudes on the Fraser system (plate 7). The number of specimens was, respectively, 79, 58, and 14; the elevation 1, 1,300, and 1,900 feet. The variation is seen to be much greater in the lowest locality, a fact which can not be entirely attributed to the greater number of specimens examined, for the variation from the normal, which is 19 rays, to a higher number of rays, is as great as the entire variation for the next locality.

In the second locality a much larger per cent have the normal number of rays, but the normal number has been decreased to 17. The specimens from this locality, with two exceptions, I have identified as *L. lateralis*. Those from the first locality, Mission, represent *L. bulteatus*.

The third list is interesting from the fact that the normal number of rays is again moved two rays to the left. In other words, the higher the altitude the fewer the number of rays and the narrower the limits of variation. Moreover, the curves are not symmetrical for any of the three localities, but in the aggregate the more gradual slope is on the side of an increased number of rays, a condition which, considering the general variation of rays on the Pacific Slope, seems to indicate that the number of rays of the species of this genus in the Fraser system is increasing and that the increase is progressing from lower to higher altitudes.

The curves for the Columbia system (plate 8) are not so unanimous in their indications. It will, however, be noticed that, with one exception, they show that the number of rays decreases with the increase of the altitude, the highest point examined, Idaho Falls, having the fewest rays. These specimens represent *L. hydrophlox*, which, with *montanus*, does not descend from the mountains or high plateaus.

The greatest variation in this system was not at the lowest altitude, but at an elevation of 2,372 feet. None of the curves are symmetrical, but the asymmetry is again, as in the Fraser system, greater on the right than on the left. The variation is again greater toward the higher number of rays than toward the lower.

I am not aware that a similar attempt has been made before to represent variations between localities. While the curves here given will no doubt vary slightly with every additional specimen examined, the nature of the curve will probably not be greatly changed. Certainly the important point, that each locality has a variety which in the aggregate is different from the variety of every other locality, can not be gainsaid; nor are additional specimens likely to overthrow the generalization that the number of rays in the species considered decreases with the altitude.