membranes at apex of fin. Anal fin of breeding females pigmented like that of males except that interradial pigment was never observed.

All principal caudal rays bordered by melanophores in both sexes. Breeding males occasionally have a few melanophores scattered over interradial membranes near tips of caudal lobes or near fork. Interradial pigment rarely present in females.

First pectoral ray bordered by melanin along entire length, next several rays weakly bordered along basal portions. Sexes similar.

Pelvic fin of breeding males usually immaculate (Fig. 3A), but occasionally with a few melanophores scattered along borders of first several rays. Rarely (4 of 62 specimens) ray border pigment darker, bleeding slightly onto interradial membranes at apex of fin. Pelvic fin of breeding females pigmented like that of males except that no interradial pigment was seen.

As *N. b. alegnotus* usually lacks interradial pigment in the anal and pelvic fins, the index of fin pigmentation is uniformly very low (Tables 12 and 13) and was not subjected to regression analysis. The few males showing a slight amount of interradial pigment in the tips of the anal and/or pelvic fins were not all large (ranged from 40 to 48 mm SL), although the highest pigmentation index (3+3=6) did come from the largest male examined (48.1 mm SL).

Breeding Coloration

Males.—Except for narrow, colorless marginal band, dorsal fin of breeding males flushed with brilliant red, contrasting conspicuously with heavy black pigment bordering rays. Viewed microscopically, erythrophores visible on membranes, absent from rays. Caudal fin washed with red-orange, only about half as bright as dorsal fin; color restricted primarily to membranes. Anal fin devoid of color in all males studied except two with interradial pigment. In these, trace of orange mixed in among melanophores at apex of fin. Pelvic fins lacked red color in all males examined, even in specimens with interradial melanin. Approximately half of males studied had faint streak of red in membrane following first ray of pectoral fin.

Iris of breeding males washed with pale yellow-orange. Otherwise, no bright pigment visible, even microscopically, on head or body. In life, lips and preorbital area conspicuously darker than remainder of head. Venter is white, dorsum olive. Side up to midlateral horizontal myoseptum dominated by silvery band, paralleled along its upper margin by narrow pinkish or purplish iridescent line.

Females.—Breeding females are less vivid than males. Dorsal and caudal fins faintly washed with orange-red, but fading quickly to yellow-green in preservative.

Breeding Tuberculation

Males.—Pectoral fin tuberculation of this form is similar to that of *N. b. bellus* except that, where maximally developed (on rays 2 through about 5), tubercles are more randomly arranged (seldom in linear series) and average slightly smaller. In some specimens the arrangement approaches a coarse shagreen.

The description of head tuberculation of *N. b. bellus* applies equally well to *N. b. alegnotus* with these exceptions: (1) Tubercles on the head dorsum are usually erect, but isolated tubercles may be slightly antrorse or even slightly retrorse. (2) The tendency for suborbital and interopercular tubercles to encroach backward and upward onto the lower opercle is not so well developed in this form. (3) The most noticeable difference is that *N. b. alegnotus* has better-developed tubercles on the ventral aspect of the head. Those lining the opercular membrane, branchiostegal rays, and interopercle are numerous, close-set, and strong. Jaw rami tubercles are especially formidable, about 50 percent larger than those on the head dorsum.

Body tuberculation agrees with that described for *N. b. bellus* with these exceptions: (1) Belly and breast tuberculation is less variable and usually well developed