

Measurements

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Measurements

Length and width are measured on the occlusal surface of the crown in all the Theridomyidae (Fig. 4). To distinguish the variation of the crown size in worn stages, the teeth have been divided into five stages of wear (from SW-1 to SW-5).

Issiorodomyinae. – SW-1: unworn or almost unworn stages; SW-2: pseudograben is represented; SW-3: pseudograben absent and in addition to the II syncline in the upper teeth or to the III synclinid in the lowers, other syncline(s) or synclinid(s) must be represented; SW-4: sinus and II syncline or sinusid and III synclinid are present; SW-5: syncline or synclinid are not represented on the occlusal surface of the teeth (Fig. 5). In the semihypsodontic teeth with low crown height the synclines or synclinids only disappear in a very advanced worn stage. In these cases SW-4 is considered when, on the transversal crest the dentine is represented without enamel-interruptions (Fig. 18). That special case, where the taxon has a part of its lower teeth without pseudograben, will be explain below.

For Theridomyinae and Archaeomyinae the explanation will also be offered below.

Sinus length is the measurement in the upper teeth of the length of the sinus or of the semigraben. One measures on the occlusal surface the distance between the lingual borders and the labial end of the sinus or the semigraben (Fig. 4).

Sinusid length is the same measure as in sinus length, but in the lower teeth.

Extrasinus distance is the measure on the occlusal surface of the distance between the labial end of the sinus and the closer labial border of the crown (Fig. 4).

Extrasinusid distance is the same measure as above but in the lower teeth.

The last four measurements described above establish in quantitative terms a general tendency of the Theridomyidae toward lamination of the teeth and they are also useful when applied to the species of almost all genera.

Sinus height: This measurement could be taken with more frequency than the crown height, especially on the teeth included on maxillary or mandibular bones, or where the

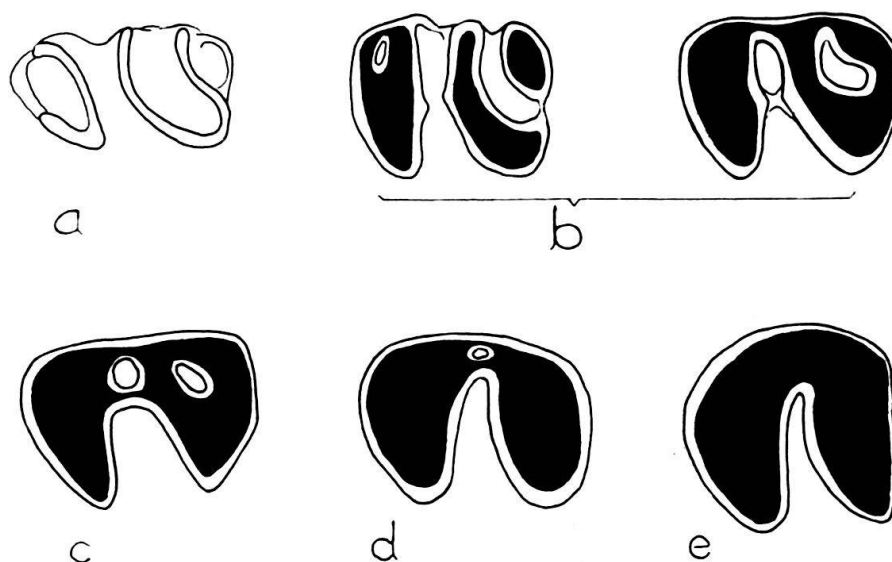


Fig. 5. Different stages of wear on upper teeth of *Issiodoromys*. a = SW-1. b = SW-2. c = SW-3. d = SW-4. e = SW-5.

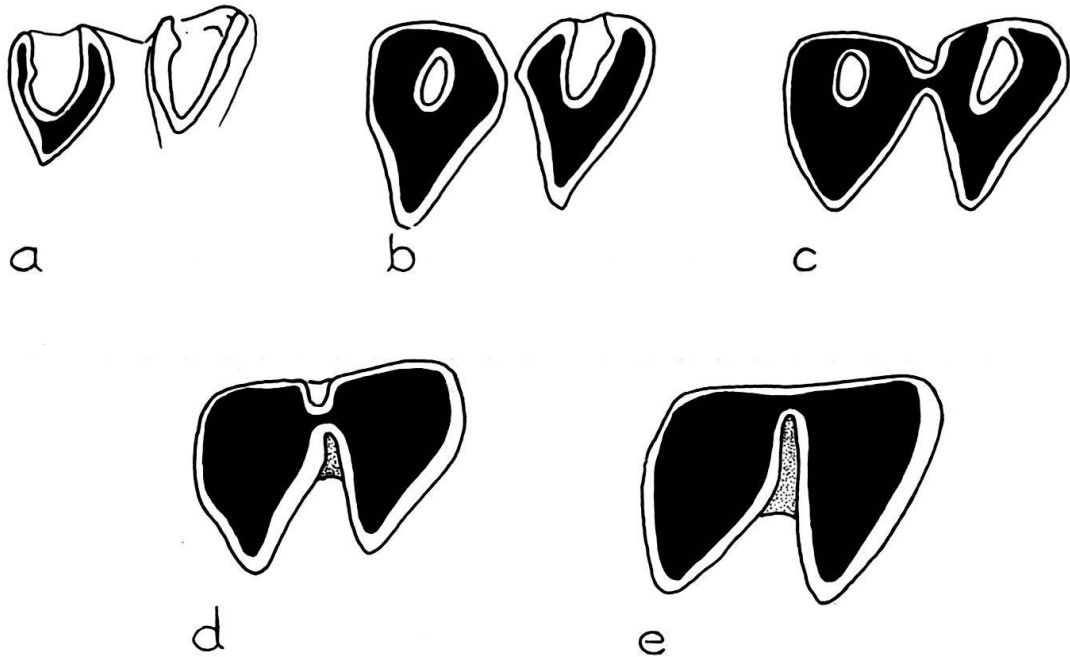


Fig. 5.1. Different stages of wear on lower teeth of *Issiodoromys*. a = SW-1. b = SW-2. c = SW-3. d = SW-4. e = SW-5.

lower enamel border of the crown is damaged or not visible at all. For this reason it is taken into account when establishing the quantitative boundaries among the 5 different stages of wear. This measure is used with the same name in the cases of semigraben, graben or pseudograben. In all genera of Theridomyinae and Issiodoromyinae this measure is taken from the both upper borders of the sinus on the occlusal surface down to the base. In *Archaeomys* genus, where in the worn stage the occlusal surface is very irregular due to asymmetrical excavation of dentine and cement between the enamel crest, one of the sinus borders is frequently very different in height. In spite of this, the measurement is taken as in Theridomyinae to better establish the difference among the different stages of wear (Fig. 4).

Sinusid height is the same measure as sinus height, but on the lower teeth.

Crown height is the extension of the measures above described, down toward the lower enamel border of the crown; oriented through the base of the sinus or the sinusid. In the case of *Archaeomys* and because of the difference with the measurements of the sinus or sinusid height, the measure is taken between the top of the enamel crest of the sinus, sinusid, graben, semigraben or pseudograben on the occlusal surface, down toward the lower enamel border of the crown (Fig. 4).

Lobule height: As well as in the anterior or posterior lobules as in the upper or lower teeth, the lobule height is measured between the lower end of the central cusp of enamel and the top of the enamel border of the lobules. For the orientation, this measure is taken from an imaginary line parallel to the occlusal surface, which must pass between the lower end of the central cusp of enamel and the anterior or posterior enamel border of the

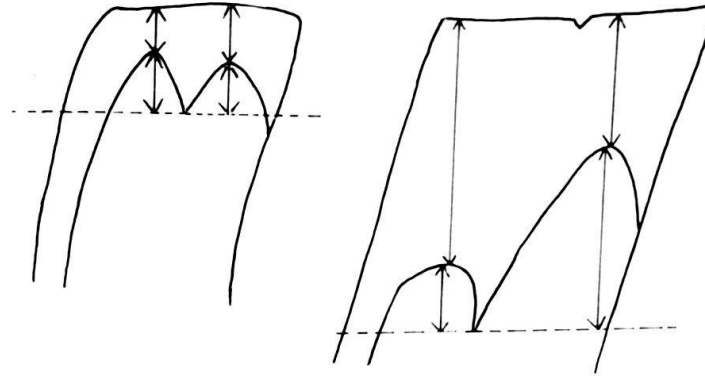


Fig. 6. Measurements of the lobule height and crown height above the lobules (explanation in the text).

measured lobule (Fig. 6) and then, from this imaginary line toward above the top of the enamel border of the lobule.

Crown height above the lobules is the measure of the crown height between the occlusal surface of the crown and the top of the border of the lobule. This measurement is applied to the anterior and posterior lobules in the upper and lower teeth (Fig. 6).

For the measurements of the crown curvature in Issiodoromyinae, the method of TOBIEN (1974, p. 201, Fig. 94 and 1978, p. 169, Fig. 22) was followed. In the hypsodontic teeth, a series of circles with values for curvature radii from 1, 2 to 8 mm was used (Fig. 7). All measurements are given in mm.

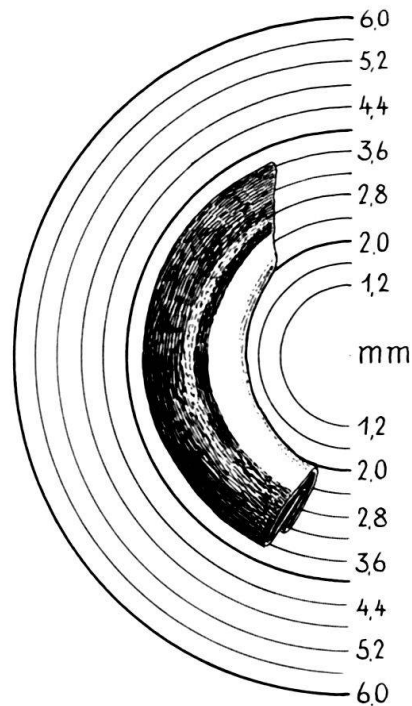


Fig. 7. Series of circles with values from 1, 2 to 6 mm for the measurements of the curvature radii on the lingual border of the hypsodontic teeth.