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Relegation of monophodont teeth in harbor seals (*Phoca vitulina* Linnaeus)  
—A histo-embryological and three-dimensional reconstruction study—

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In most mammals, monophodont teeth are relegated to the primary dentition. In harbor seals (*Phoca vitulina* Linnaeus), however, the first and fifth post canine teeth have been reported to be classified as secondary dentition based on the microscopic anatomy. The aims of this study are to elucidate the relegation of monophodont teeth on the basis of the developmental aspects by using a histological 3-D method. The specimens used in the study were embryos of harbour seals, with body lengths of 12.3~27.0 cm.

Each secondary generation tooth germ was taken from each first generation tooth germ in each dental lamina, and secondary generation tooth germs did not form a series of "secondary dental lamina." These features suggest that the tooth family and odontosticos are identifiable based on the developmental aspect.

In the post canine series in harbor seals, first generation tooth germs attached on the elongated dental lamina. They grew deeper and then formed the secondary generation tooth germ on the margin of each first generation tooth germ. However, the first and fifth post-canine teeth in harbor seals, which have been classified as secondary generation teeth, did not have the preceding tooth germ on the portion of the first post-canine tooth dental lamina. This means that the first and fifth post canine tooth germs directly develop from the dental lamina as in other first generation tooth germs of post-canine teeth. It is concluded that the first post-canine tooth in northern fur seals belongs to the primary dentition as in the case for most other mammals, and therefore, not the secondary dentition as has previously been believed.