

学 位 論 文 要 旨	
氏 名	Keita OISHI
題 目	Characteristics of population dynamics and home ranges of <i>Apodemus speciosus</i> and <i>A. argenteus</i> and their roles as seed disperser. (アカネズミとヒメネズミの個体群動態や行動圏の特性と種子散布者としての役割)
<p><i>Pasania edulis</i> is one of the dominant Fagucea tree species in evergreen broad-leaved forests in southern Japan and the acorns of <i>P. edulis</i> are important foods of two species of <i>Apodemus</i> mice, <i>A. speciosus</i> and <i>A. argenteus</i>, in winter. These mice are considered as important seed disperser and predator. In this study, I studied the acorn crop and the mortalities from production on trees to seedling establishment for 14 cohorts of <i>P. edulis</i> acorns in an evergreen broad-leaved forest of The Kagoshima University Research Forest. I also studied the population changes, the characteristics of the home ranges, and hoarding behavior of the mice in a boundary area of the evergreen forest and its adjacent conifer plantation. Lastly, I examined the effects of thinning and clear cut on the population dynamics of the mice. Basing of the results, I discussed how <i>Apodemus</i> mice contribute to the dispersion and regeneration of <i>P. edulis</i>.</p> <p>The annual changes in the number of inhabiting <i>A. speciosus</i> were more synchronized with acorn crop of <i>P. edulis</i> than those of <i>A. argenteus</i>. Both the body weight of <i>A. speciosus</i> mice and the rate of increase of the mice population from autumn to spring correlated positively to acorn crop. These results suggested that acorn crop of <i>P. edulis</i> determined the nutritional condition and influenced the reproduction of the mice.</p> <p>The mortality rate of acorns from production on trees to seedling establishment was very high for all 14 cohorts (99.3–100 %) from 1995 to 2008. Predation by <i>Apodemus</i> mice was the most important mortality factor and was the greatest contributor to annual fluctuations in the total mortality until seedling establishment. Consequently, besides mast cropping, a small population of <i>Apodemus</i> mice, that is, a low predation pressure, was also required for successful regeneration of <i>P. edulis</i>.</p> <p>Approximately one third of cache acorns were stolen by non-hoarder and were transported farther than acorns recovered by hoarder. Therefore, a theft of cache acorns might act advantageously plant dispersion.</p> <p>Home range size and the distances between the points successively detected by using a radiotelemetry method during a night became larger during the acorn dropping season and a mouse moved approximately 100 m within three hours. Some mice frequently moved from a cedar plantation to its adjacent broad-leaved forest and vice versa in the boundary area of the two forests. Such mice are considered to contribute to seed dispersal to conifer plantation.</p> <p>Thinning and clear cutting gave pronounced effects on the mice populations just after the operations. However, <i>Apodemus</i> mice began to immigrate into thinned site and clear cut stand three to six month and within a year after operations, respectively. Debris of woods and foliage may play a role as bridgehead in recovery of mice and transportation of acorn to operated area.</p> <p>In conclusion, <i>Apodemus</i> mice act as not only seed predator but also seed dispersal in mast year of acorn cropping after poor cropping. They can recover and disperse seeds into operated area within a short period after the operations.</p>	