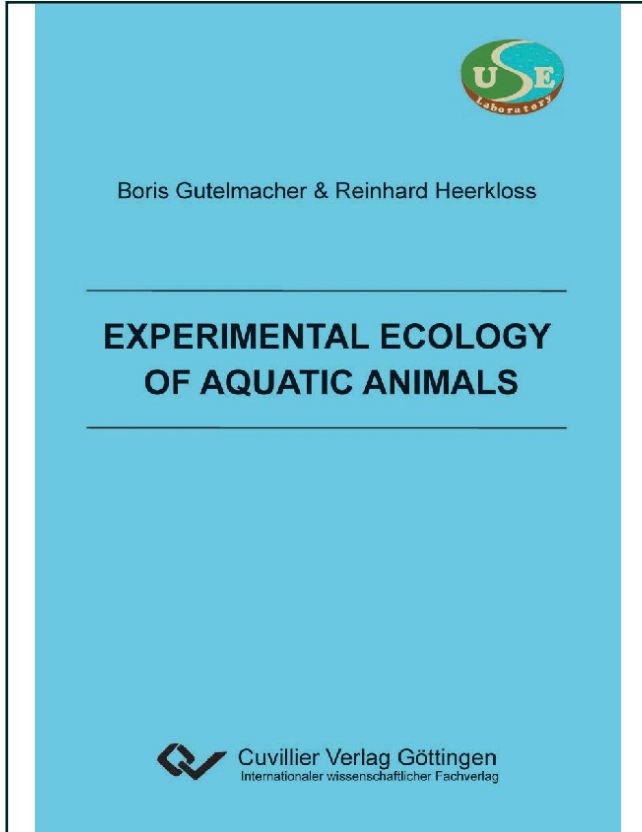




Boris Gutelmacher (Autor)

Reinhard Heerkloss (Autor)

Experimental ecology of aquatic animals



<https://cuvillier.de/de/shop/publications/511>

Copyright:

Cuvillier Verlag, Inhaberin Annette Jentzsch-Cuvillier, Nonnenstieg 8, 37075 Göttingen, Germany

Telefon: +49 (0)551 54724-0, E-Mail: info@cuvillier.de, Website: <https://cuvillier.de>

CHAPTER 1: Introduction ... 7

- 1.1. Concepts of experimental ecology ... 7
- 1.2. The energy balance and its means of expression ... 11
 - 1.2.1. Balance equality ... 11
 - 1.2.2. Units of measurement of the balance equality ... 13
- 1.3. Tests and exercises ... 18

CHAPTER 2: The rate of respiration as a measure of energy dissipation and mineralization of organic matter ... 19

- 2.1. Introduction ... 19
- 2.2. Methods of estimating energy metabolism ... 20
- 2.3. Energy metabolism and the body mass of animals ... 24
- 2.4. Standard metabolism ... 29
- 2.5. Active metabolism ... 33
- 2.6. Dependence of the metabolic rate on temperature and other environmental factors ... 34
- 2.7. Comparison of the metabolic rates of representatives of animal kingdom ... 46
- 2.8. Tests and exercises ... 49

CHAPTER 3: Growth, development and production of aquatic animals ... 51

- 3.1. Introduction ... 51
- 3.2. Relation between animal body length and mass ... 52
- 3.3. Main conceptions ... 55
- 3.4. Growth study methods ... 57
- 3.5. Types of somatic growth ... 62
- 3.6. Generative growth ... 72

3.7. Relation between growth rates and energy metabolism ... 74

3.8. Dependence of growth rate on environmental factors ... 76

3.9. Tests and exercises ... 82

CHAPTER 4: Quantitative concepts of animal feeding ... 84

4.1. Introduction ... 84

4.2. Feeding study methods ... 84

4.3. Composition of ration and selectivity of feeding ... 90

4.4. Quantitative feeding characteristics ...94

4.5. Tests and exercises ... 105

CHAPTER 5: Ecological and physiological regularities and use of hydrosphere resources ... 107

5.1. Introduction ... 107

5.2. Sizes of organisms and their productive properties ...107

5.3. Transformation of energy in aquatic ecosystems ... 112

5.4. The role of organisms in purification and formation of water quality ...116

5.5. Approach to a quantitative estimation of the matter cycle in aquatic ecosystems ...123

5.6. Productivity of water bodies and trophic chain structure ...128

5.7. Tests and exercises ...134

REFERENCES ... 135