# The contribution of leasure-time researchers to biodiversity research

## Jan Bosselaers<sup>1</sup> and Mark Bosselaers<sup>2</sup>

### Leisure-time researchers offer a valuable contribution to biodiversity studies

### Some research areas to which leasure-time researchers can contribute:

- taxonomy (new species description, sytematics, cladistics...)
- faunistics, floristics ecology, conservation

### Some techniques that can be mastered by good leasure-time researchers:

- field work
- identification
- light microscopy, photography
- species description
- collection management data management by computer

#### Some advantages and disadvantages of leasure-time researcher work:

- some work of inferior quality impedes taxonomic progress
- in some disciplines, commerce can conflict with science - new technologies not always available to leasure-time researchers

- dedicated people investing substantial energy in the subject

- involving almost no labour cost
  expertise from other disciplines introduced to the subject
  people with an unbiased view
  more freedom to take risks (labour intensive work, controverse)

### Some important factors improving the quality of leisure-time research work

#### Own equipment:

- leisure-time researchers should personally dispose of certain tools, e. g. field equipment, identification guides and other scientific literature, optical equipment (binoculars, camera, microscope...). computer

#### Collaboration with scientific institutes:

#### Scientific institutes can offer leasure-time researchers:

- follow-up and orientation of research help with obtaining rare literature specimens for study, access to collections
- use of expensive equipment (e. g. electron microscopy)
   occasions for publication

#### ure-time researchers can offer scientific institutes:

- valuable data (faunistics, floristics, species descriptions...)
- joint publications

#### Membership of naturalist societies:

naturalist societies offer leasure-time researchers training, contacts exchange of views and techniques, excursions, literature, joint use of equipment, occasion to publish...

### Examples of organism groups available for study by leisure-time researchers

mammals, birds, "reptiles", amphibians, molluscs (especially gastropods), butterflies (Lepidoptera), beetles (Coleoptera), vascular plants, mushrooms (basidiomycetes, ascomycetes)

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crustaceans, arachnids, myriapods, various insect groups (Odonata, Homoptera, Orthoptera, Hymenoptera, Diptera), myxomycetes, bryophytes, lichens

#### Some groups of organisms hardly being studied by leasure-time researchers:

protozoans, sponges, coelenterates, flatworms (Platyhelminthes), annelids, bryozoans, smaller insect orders (Collembola, Strepsiptera...), echinoderms, "small phyla" (Gastrotricha, Rotifera, Nematoda, Tardigrada, Chaetognatha...), algae

## Some famous leasure-time researchers



Philippe Dautzenberg 1849-1935 Carpet manufactures Malacology Wrote important malacological works, described 1895 new taxa and collected 4.5 million



Theodore Roosevelt 1858-1919 US president Nature exploration Led a 900 mile exploration journey along a Brazil river



Hugh N. Dixon 1861-1944 Schoolteacher Botany Extensive publications on mosses, including a famous oss flora



Jacobus P. Thysse 1865-1945 Schoolteacher Birds, ethology, conservation Founder of the Nederlandsche Natuurhistorische Vereeniging; extensive publications, including a famous vascular



Vladimir Nabokov 1899-1977 Writer, linguis Lepidoptera Described several new genera and species of butterfli



1901-1989 Emperor Published well-illustrated books on Crustacea and Hydrozoa



John Cage 1912-1992 Mushrooms Co-founder of the New York Mycological Society



Microscope equipment

### A small example from practice: dochterland

Three leasure-time researchers (Jan Bosselaers, Mark Bosselaers, Hans Henderickx) collaborating on subjects relevant to biodiversity and

- Pseudoscorpionida, Lepidoptera (Tineidae, Psychidae) (HH) - marine micromolluscs, fossil Cetacea (MB)

### Collaborations with institutes:

- RBINS, Brussels (MB, HH)
- MRAC (Tervuren), KULeuven (JB)

### Equipment:

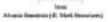
binocular and compound microscopes, computers implementing cladistic programmes and image processing, digital photo camera's, library, collections, GPS receivers, field equipment

 W. and central Europe, Spain, Greece + islands, Cyprus, Bulgaria, Canary Islands, Madeira, Azores, Jordan, Tunesia, South Africa, USA

Collections

- over 70 smaller and larger scientific contributions
- over 80 new species described













Computers, cladistics...

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