

# The contribution of leisure-time researchers to biodiversity research

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

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

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

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

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

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

#### Disadvantages

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

#### Advantages

- 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, controversial)

## 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 leisure-time researchers:

- training
- 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

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

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

### Membership of naturalist societies:

- naturalist societies offer leisure-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

### Some "popular" groups of organisms enjoying a long tradition of study by leisure-time researchers:

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

### Some groups of organisms studied by small numbers of dedicated leisure-time researchers:

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

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



Philippe Dautenberg  
1849-1935  
Carpet manufacturer  
Malacology  
Wrote important malacological works, described 1895 new taxa and collected 4.5 million specimens



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 moss flora



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



Vladimir Nabokov  
1899-1977  
Writer, linguist  
Lepidoptera  
Described several new genera and species of butterflies



Michinomiya Hirohito  
1901-1989  
Emperor  
Marine biology  
Published well-illustrated books on Crustacea and Hydrozoa



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



Microscope equipment

## A small example from practice: dochterland

Three leisure-time researchers (Jan Bosselaers, Mark Bosselaers, Hans Hendericks) collaborating on subjects relevant to biodiversity and taxonomy

### Subjects:

- Araneae (JB)
- 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

### Collecting excursions:

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

### Publications:

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



Albania (Dautenberg) (B. Mark Bosselaers)



Falanga veneti (Hendericks & Hendericks, 1990)



Computers, cladistics...



Collections



Europe (central) Bosselaers & Jacqué, 2008



Cliffonia minutissima (Hendericks, 1997)

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