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:

Benefits:
- more freedom to take risks (labour intensive work, controverse)
- people with an unbiased view
- involving almost no labour cost
- dedicated people investing substantial energy in the subject
- new technologies not always available to leisure-time researchers

Disadvantages:
- some work of inferior quality impedes taxonomic progress
- in some disciplines, commerce can conflict with science

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, “tropical”, 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:
- pennatulaceans, sponges, ctenophorans, flatworms (Platyhelminthes), annelids, brachiopods, smaller invertebrates (Ciliata, Bryozoa, Strepitopora...), echinoderms, “small phyla” (Gastropoda, Rotifera, Nemertea, Tardigrada, Chaetognatha...), algae

Some famous leisure-time researchers

Philipp Dautzenberg 1849-1915
Carpet manufacturer
Mycology
Wrote important malacological works, described 1485 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
Published well-illustrated books on mosses, including a famous moss flora

Jacob P. Thiysse 1885-1945
Scientific publisher
Birds, ethology, conservation
Founder of the Nederlandse 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

Michimya Hirohito 1901-1989
Emperor
Marine biology
Published well-illustrated books on Cnidacea and Hydroids

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

A small example from practice: dochterland

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

Subjects:
- Amphibia (JB)
- Pseudoscorpionida, Lepidoptera (Tineidae, Psychidae) (HH)
- marine microinvertebrates, fossil Crustacea (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, 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

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