



## Alain Dubois – a batrachologist’s life

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Alain Dubois was born in Paris on 4 June 1948. His parents, Suzanne and Jacques Dubois always supported his interest in animals. So, little Alain spent time searching fish, insects and tadpoles with his family and grand-parents. His first distribution notes date to the early 60ies when he was twelve years old. He was later a member of a secondary school association for young naturalists, SONALYCA (SOCIÉTÉ des NATURALISTES du LYCÉE Carnot), and a fervent reader of the “*Souvenirs entomologiques*” books of Jean-Henri Fabre, whose example made him fond of observation and experimentation. Later, Alain discovered the works of Jean Rostand on experimental embryology and anomalies of amphibians. As a scholar Alain attended the Sunday afternoons in Rostand’s home in Ville d’Avray, regularly, where celebrities of art, literature and science used to discuss on their *oeuvres*. He started working on amphibian anomalies under the guidance of Jean Rostand and published his first scientific work on these subjects (fig. 1).



Figure 1. Alain in the field during schooldays. Left, in 1964; right with his cousin Jean Mallaret in 1966.  
© Pierre Dubois.

### University years

In 1965 he joined the *Faculté des Sciences* at Paris University not only to study biology (zoology, animal physiology, embryology, genetics, ecology) but also psychology and English. As a student, Alain and his comrades collected data on the anomalies of the common toad (*Bufo bufo* [Linnaeus, 1758]) by observing thousands of toads during breeding season, bringing the interesting specimens to his parents home and rearing them in the bathroom. His family has preserved photographs documenting these early years of his research (fig. 2).

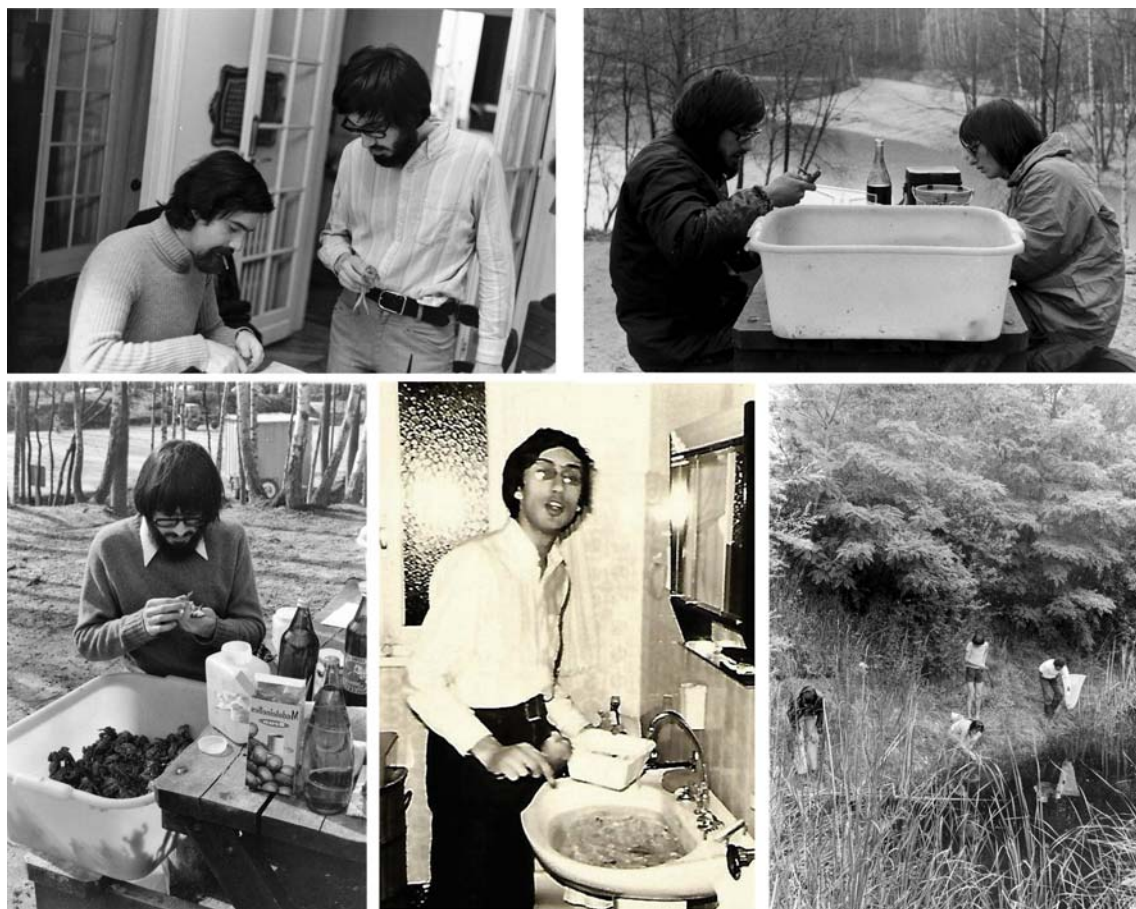


Figure 2. Studies of anomalies of *Bufo bufo*. Upper left, Jean-Louis Fischer and Alain Dubois in the living room of rue Beaubourg flat, Paris in 1972; upper right, Alain Dubois observing toad specimens and Dominique Payen taking notes in Fontainebleau (1972); lower left, Alain Dubois observing toads (1972); lower middle, Alain caring for tadpoles in the bathroom of rue Beaubourg flat (1970); lower right, Alain Dubois, an unknown student, Jacek Metody Szymura and Heinz Tunner frog hunting on the Leitha-Gebirge, Burgenland, Austria (1975). © Pierre Dubois.

During his early university years, Alain participated in the social movements of May 68. In those days it was possible for a young man like Alain to hitchhike (or take bus) from Paris via Turkey, Iran, Afghanistan, Pakistan to India and Nepal. If a young man, interested in frogs, ventures such a travel, his attention is focused on the local fauna. During Alain's 14 months stay in the mountains of Nepal, which were only accessible by walking, he explored them on his own before meeting Corneille Jest of the RCP Nepal of the French CNRS, who acknowledged the seriousness of this

student, by inviting him to join. Alain collected over 10 000 specimens, took precise field notes and revolutionised the knowledge on the amphibians of Nepal, describing numerous new species, clarifying distribution ranges and biogeographical patterns. He also took many photographs of the Nepalese species in the field, which was rather unusual in those days. For this purpose, he used a camera with an integrated flashlight, originally developed for dentists: after all the human mouth and frogs are quite similar in size! Some photos are spectacular, like the title photo of this very volume, showing a frog on a rock in a mountain stream.

Using the material collected in Nepal, Alain prepared his thesis on “*Contribution à l'étude des Amphibiens du Népal: les Grenouilles du sous-genre Paa (Famille Ranidae, genre Rana)*” under the guidance of Maxime Lamotte at the Ecole Normale Supérieure de Paris which was defended in 1976. This thesis is an exemplary revision of a taxonomic group of then poorly known frogs living in the mountain streams of Himalayas (Dubois 1976). His previous studies on the anomalies in European frogs and toads were very useful for Alain when he studied large numbers of Nepalese frogs for an intraspecific variation investigation. It should remain the only analysis of the *PAINI* of the Himalayas outside China. Nevertheless this work is being underestimated because no molecular data are available to support the morphological conclusions (Ohler & Dubois 2006). Alain expanded his taxonomic work to South and Southeast Asia and, in his longing for completeness, aimed at a worldwide approach to amphibian nomenclature and taxonomy (Dubois 1987, 1992, 2005).

This search of completeness has always been a central aspect in Alain's work. Most of us are specialists for a group or a geographic region. Alain has always extended his interest to the more inclusive taxonomic groups, attempting to do taxonomy in a more general way applying the same concepts over a larger assemblage. These efforts caused many changes in the classification of frogs.



Figure 3. Alain working on his thesis at Ecole Normale Supérieure, rue d'Ulm in 1974. © Pierre Dubois.

His contribution to the systematics and nomenclature of amphibians is outstanding, by the number of new taxa described (more than 120 of which more than half are nomina for genus group taxa), yet his major work was on the proposals of classification of amphibians. Based on morphological data collected by observing hundreds of specimens, and finally by integrating the results of molecular phylogenies, Alain proposed working taxonomies which he called *ergotaxonomies*. These classifications are not meant to be a stable structure but a working hypothesis for further studies. As a student in his lab one learns the most important principle of taxonomy by heart: *panta rei*, everything flows.

### *Anomalies*

Most people regard anomalies as exceptions or curiosities (Gollmann *et al.* 1987). Alain studied this subject within a much broader framework. Rostand already used anomalies to understand questions of population genetics. So Alain did not consider those specimens as monsters but tried to understand the pattern of variation and the role of these rare phenotypes in evolutionary studies. He considered them as part of polymorphism, variability and heterogeneity in natural populations (Dubois 1979). As in other subjects, his primary concern calls for a certain methodology, for only a precise analysis of the observed phenomena linked to specific terms allows comparative approaches (Henle *et al.* 2017).

### *Academic career*

Progress in his academic career was fast. Like many others, he experienced a period of short contracts and varied employments during his studies and afterwards, being eventually appointed at the Paris Muséum as technician in 1978. Yet in the following decade he climbed the hierarchy and was nominated *Professeur des Grands Etablissements*, *Directeur de Laboratoire du Muséum* in 1989, as Lacépède or Duméril before. During his time at the Muséum, he held numerous administrative responsibilities on a local and national level, in particular concerning the research and administration of the Muséum and the recruitment of researchers both for the Muséum and nationwide. Due to the Muséum's changing rules and regulations, Alain's responsibilities in the Muséum evolved and enabled him to spend more time on research.

### *Fieldwork and collections*

Alain spent an important part of his career with fieldwork and museum collections. He visited about 20 countries in Europe, Asia and North Africa. Beside his outstanding collection of Nepalese amphibians, he made important contributions to the amphibian collections of France, Greece, Italy, Morocco, Pakistan, Spain and Turkey (fig. 4). His collections are well documented by detailed field notes and more than 20 000 specimens have been integrated into the collections of the *Laboratoire des Reptiles et Amphibiens* of the Paris Muséum. Alain tried to collect statistically significant samples when available and paid special attention to building a tadpole collection. For many specimens, the description of their life colour is available, as well as photos or call records. He treated many of these specimens in his publications and they constitute a valuable material for further studies.



Figure 4. Alain and three boys coming home after collecting *Mertensiella caucasica* (Waga, 1876) in eastern Turkey (1989). © Annemarie Ohler.

### *Teaching and education*

During Alain's career the Muséum was engaged in the development of Master and Doctoral studies. Alain took an active part in the creation of a doctoral course on Animal and Plant Systematics, and was particularly involved in a course on taxonomy and nomenclature, which trains about twenty Master students every year. This training in taxonomy and nomenclature has also been proposed to postdoctoral students and researchers in the frame of the European programme DEST (Distributed European School of Taxonomy) (fig. 5).

### *Conservation*

Since the early 1980ies Alain was aware of the threats on amphibians, if it is harvesting of frogs for human consumption or the destruction of habitat. He coined the term "genetic pollution" to point to the problems created by introduction of "alien" genes into a natural population when doing population reinforcements. His attention goes to maintain the natural history of population genetics and not to disturb the evolutionary signals present in the genomes. More recently he published on the particular needs of taxonomy in the century of extinctions and pleads for collection of specimens as long as it is still possible. Considering the state of biodiversity in nature, he underlines the role of natural history collections in the preservation of biodiversity for future studies.



Figure 5. Alain with participants of the 2014 course on nomenclature of DEST programme in the Jardin des Plantes. © Annemarie Ohler.

### *Editorial work*

Alain has always been very active in scientific publication. Starting at the age of 20, he has been publishing for half a century and has 469 references on his list of publications by now which means an average of almost 10 per year. Beside his own publication work Alain has served as founder of several scientific societies and their journals, such as *Societas Europaea Herpetologica* (SEH) and the journals *Amphibia-Reptilia*, *Société herpétologique de France* (SHF) and its *Bulletin*, *International Society on Study and Conservation of Amphibians* (ISSCA) with the journal *Alytes*, *Association des Amis du Laboratoire des Reptiles et Amphibiens* (AALRAM) and the journal *Dumerilia*, and the journal *Bionomina*, published by Magnolia Press. He is member of numerous editorial boards and a strong supporter of independent and diversified publication in science.

For many years, he has put a lot of effort into the development of *Alytes*, *International Journal of Batrachology*, for he has always regarded the existence of an independent field *batrachology* in research as extremely valuable for numerous reasons. He particularly insisted on the importance of the larval stages in ontogeny of amphibians and the role these species played in developmental biology.

### *Honors*

Alain is not a man hankering after official honours. Yet, as a lover of Italy and the Italian way of life, he is very proud to be a honorary citizen of an Italian town, Fagnano Castello (fig. 6). Near this southern Italian town Alain discovered relict populations of *Ichthyosaura alpestris* in 1982, which he described as *Triturus alpestris inexpectatus*. With the establishment of a nature reserve and the development of a local ecotourism, the discovery of the newt has improved the economic development of the region. Yet the honouring of a scientist by a local major for the discovery of a newt species seems to be quite unique.



Fig. 6. Alain Dubois receiving the key of the city Fagnano Castello as honorary citizen on 1 November 2011, handed over by Dr. Marcellino Gallo, deputy major. © City of Fagnano Castello.

### *Conclusion*

Alain defines his main research subjects as follows:

- evolutionary systematics of amphibians especially anurans of the Oriental and Palaearctic regions, using morphology and morphometry as methods, doing revisions and descriptions of new taxa;
- theoretical works of general interest in zoology, conservation biology, evolution systematics and nomenclature;
- nomenclature of amphibians and reptiles;
- population biology of European amphibians;
- conservation of species and populations of amphibians and of their habitats;
- amphibian bioacoustics.

In this short text only some aspects of his work can be mentioned. Those who want to learn more about these subjects find the complete list of his publications below. This volume is entitled “*Merveilleux batraciens!*”, a motto Alain gave to a series of conferences to present amphibians to the interested French public. The lectures pointed out the diversity of this group concerning various aspects of its external appearance but also of its biology and reproductive modes. We have chosen this title for the *Festschrift*, for we hope the content will reflect the divers aspects of Alain’s career as well as the variety of ongoing research on amphibians.

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#### LITERATURE CITED

- Dubois, A. (1976) Les Grenouilles du sous-genre *Paa* du Népal (famille Ranidae, genre *Rana*). *Cahiers népalais. Documents*, Paris, CNRS, **6**: i–vi + 1–275.
- Dubois, A. (1979) Anomalies and mutations in natural populations of the *Rana esculenta* complex (Amphibia, Anura). *Mitteilungen aus dem zoologischen Museum Berlin*, **55**: 59–87, pl. 1.
- Dubois, A. (1987) Miscellanea taxinomica batrachologica (I). *Alytes*, ‘1986’, **5** (1–2): 7–95.
- Dubois, A. (1992) Notes sur la classification des Ranidae (Amphibiens, Anoures). *Bulletin de la Société linnéenne de Lyon*, **61** (10): 305–352.
- Dubois, A. (2005) *Amphibia Mundi*. 1.1. An ergotaxonomy of recent amphibians. *Alytes*, **23** (1–2): 1–24.
- Gollmann, G., Hödl, W. & Ohler A. (1984) A tadpole from a *Bombina* hybrid population. – A hopeless monster? *Amphibia-Reptilia*, **5**: 411–413.
- Henle, K., Dubois, A. & Vershinin, V. (2017) Commented glossary, terminology and synonymies of anomalies in natural populations of Amphibians. In: Henle, K. & Dubois, A. (ed.), *Studies on anomalies in natural populations of Amphibians, Mertensiella*, **25**: 9–48.
- Ohler, A. & Dubois, A. (2006) Phylogenetic relationships and generic taxonomy of the tribe Paini (Amphibia, Anura, Ranidae, Dicroglossinae), with diagnoses of two new genera. *Zoosystema*, **28** (3): 769–784.

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