This past July, Professor Ernst Josef Fittkau and his family, friends, colleagues and students were able to celebrate his 75th birthday. Fortunately, Professor Fittkau continues to enjoy and pursue his interests in his characteristic energetic manner, therefore this date does not mark any real cutoff in his activities. However, this personal anniversary approximately coincides with another, professional milestone in Fittkau’s life: the completion of 50 years of work involving the Chironomidae. Therefore, let us pay tribute here on these occasions by remembering how much Professor Fittkau has given to our group and field of study, and how many of the tools and services we can take advantage of today we really owe to Fittkau and his collaborators.

To begin with, just look at the newsletter you are reading. In its recent form, CHIRONOMUS was revived by Ulrike Nolte and associates, and it is the current editors who deserve our thanks for continuing to produce this useful forum for communications. However, the newsletter was originally created by Fittkau and Friedrich Reiss in 1967, and Fittkau worked as its co-editor through the end of 1984 when CHIRONOMUS went into dormancy after 25 issues and a total of over 200 pages (see Nos 25 and 67a in the list of Fittkau’s publications at the end of this article).

Even before editing the first newsletter, Fittkau was one of the initiators of another way to exchange information, that chironomid workers from all around the world have enjoyed ever since as a major attraction and institution in our community: in the fall of 1963 Fittkau sent out the invitations for the first International Symposium on Chironomidae, which then took place at Plön in July of 1964. By now we are looking forward to the fifteenth such meeting, to be hosted by Len Ferrington and colleagues at the University of Minnesota in the summer of 2003.

Knowing Professor Fittkau today, one can assume that meeting others and bridging distances between people or territories have always been enjoyable and rewarding to him in themselves, not just necessary means to a professional end. Nevertheless, it is fair to assume that this inclination was reinforced by positive experience made in his younger years. As a beginning student of biology, he was able to take part in the creation of the Limnologische Fluss-Station Freudenthal – a precursor of the current Max-Planck-Institute at Schlitz – which could only be achieved through the collective effort of its founders overcoming the most adverse post-war circumstances.

The ‘down’ side of joining this group for Fittkau – lucky for us – was that he was directed away from the molluscs he had wanted to study, and instead had to work himself into the Chironomidae. (However, Fittkau never has been ‘converted’ completely, as can be seen from his wonderful collection of shells, and from the occasional papers on molluscs recurring here and there among his many publications.) The fauna of the Fulda river, which the Freudenthal group was mainly
studying, was targeted as the topic of Fittkau’s doctoral dissertation, and the great August Thienemann agreed to act as his senior advisor. In 1954, Fittkau became Thienemann’s assistant at Plön (Fig. 2).

Working on the Fulda river material, Fittkau soon realized that for many taxa the scientific names could not be easily determined, and thus meaningful interpretations of the fauna for ecology, biogeography or other applications were also impossible. The main reasons for this were the largely confused, unrevised state of chironomid nomenclature, which at that time was almost exclusively based on often insufficient descriptions of adult specimens, and the numerous apparent ‘incongruences’ between the alternative systematic arrangements derived from imaginal or immature stage characters, respectively. On the other hand, in the combined and more detailed study of direct associations of adult and juvenile specimens obtained from his Fulda rearings Fittkau saw the chance to overcome these difficulties and raise the recognition and use of the Chironomidae in limnology to levels in accordance with the group’s distribution and importance in aquatic ecosystems (see FITTKAU 1961, publication No. 14). Consequently, Fittkau shifted the focus of his work to taxonomy and systematics, and even changed the topic of his dissertation. The resulting revision of the Tanypodinæ (FITTKAU 1959, 1962; Nos 11, 15) was an instant classic in the field, and will remain one of the definitive, basic texts on this third largest of chironomid subfamilies.

This move of Fittkau’s from limnology into taxonomy and systematics followed the realization that “if one wants to practice ecology successfully, the mastery of systematics remains prerequisite” (FITTKAU 1961, No. 14). Incidentally, the history of our field is full of colleagues arriving at chironomid studies on such a more or less voluntary detour from their original paths, and not all of these managed to find the way back out to their intended goals.

In Fittkau’s case, one influential example of a researcher developing taxonomic knowledge for similar reasons was Lars Brundin, with whom Fittkau was able to study the adults of Chironomidae in 1956 and 1958. And like Brundin, Fittkau acquired very special taxonomic expertise, but has always remained much more than a specialist. To see the best of different worlds he has managed to keep travelling, both physically and in an abstract sense – back and forth between the avid collector’s natural fields of dreams and the scientist’s optimally equipped laboratory and library, as well as between the lowland jungles of alpha taxonomy and higher elevation sites and towers allowing more general overviews in ecology, biogeography, or natural history. As recurrent a theme as these travels are throughout Fittkau’s biography, they may be seen as expressing a strong streak of adventurous curiosity and love for nature in his character. Vice versa, these balanced cycles in Fittkau’s activities have certainly kept reinvigorating the convincing enthusiasm for his interests and encouraging tolerance for those of others he has always impressed with in personal meetings, his presentations and publications.

As mentioned above, most of Fittkau’s motivation for taking up taxonomy came from the unsatisfactory state of chironomid systematics at the time (but, unfortunately, we can still not claim to have overcome these problems completely). Hence: “Everyone who is working with Chironomidae knows that our knowledge of this dipteran family, especially its systematization, has hardly reached the level that in most other insect orders had been surpassed already about 100 years ago. The described species are in part so poorly worked up that, for example, it is impossible with the existing literature to identify the chironomids of Europe; from other world regions they are mostly known only fragmentarily. Opposite our incomplete knowledge of the taxonomy stands the great importance which the chironomids are increasingly achieving in various research disciplines ...” (FITTKAU & REISS 1967; publication No. 25a). And: “The time seemed to have come, therefore, to bring together in collaboration the forces of all those working on chironomids, in order to help each other, exchange experience, literature and
material, and thus succeed in overcoming the difficulties at hand.” (FITTKAU 1966b; No. 22).

Thus, in addition to the international meetings and newsletter, Fittkau became one of the driving forces behind several more significant achievements resulting from such collective effort by chironomid workers. In 1976 he co-authored the first comprehensive bibliography of the Chironomidae (publication No. 62), and he was actively involved from the time the idea was first conceived in the production of what must be THE most widely used work on Chironomidae worldwide: the three books with keys and diagnoses for Holarctic genera edited by Torgny Wiederholm (see list Nos 83, 99, 115).

Moreover, Fittkau has worked extensively to provide chironomid researchers and those in related disciplines with new, more and better opportunities to publish their work. For this purpose he founded the scientific journals Amazoniana (in 1968) and Spixiana (1977), and served as the editor or co-editor of several others (e.g. Studies on the Neotropical Fauna, Aquatic Insects), as well as of numerous books, proceedings, journal supplements, etc. For one example of the effects of these activities, see all the papers on Chironomidae published in Spixiana (available on Luc Int Panis’ and Ian Walker’s Chironomid Home Page: http://www.ouc.bc.ca/eesc/iwalker/intpanis/ under “Looking for references?”).

Another influential instrument guided by Fittkau to promote the work of chironomid researchers has been the ‘chironomid center’ first developed in Plön, then moved to Munich when Fittkau became the director of the Zoologische Staatssammlung (ZSM) in 1976. Very few other collections can match the volume and concentration of literature and reference specimens, equipment and knowhow gathered by Fittkau and F. Reiss. Of special merit in this respect is the conservation and introduction into taxonomic practice of the specimens, data files and correspondence from the Thienemann collection. Fittkau was among the first to realize the enormous importance of these materials, and he took part in the tedious but eventually successful process to have its value acknowledged and its use enabled by the International Commission on Zoological Nomenclature (ICZN) (see HIRVENOJA & FITTKAU 1971, list No. 41; ICZN 1980; SPIES 2001).

Numerous colleagues around the world have directly benefited from the chironomid center over the years, either on visits – for a number of which Fittkau secured funding, e.g. from the Max-Planck Society, the German academic exchange service DAAD or the Humboldt Foundation – or by receiving material and information through loans and correspondence. After Professor Fittkau’s retirement and Reiss’ much too early death, the dipterists now working at ZSM have been trying their best to continue these services.

Professor Fittkau’s work as an academic teacher has also served to greatly expand the knowledge and awareness of chironomids, other aquatic insects and the environments they live in. He has given much of his time and opened the resources of the chironomid center and ZSM to around 100 students preparing doctoral dissertations, diploma and other theses under his guidance. A list of those projects completed or started by 1992 can be found on pp. 14-18 of Anonymous (1992).

Parallel to his furthering of chironomid research by attracting and training many new workers, Fittkau has also significantly widened its geographic horizon. Always ready to travel to exotic places, and never returning without interesting specimens, he has been supplying us with a wealth of material that will for a long time remain very hard to work up completely. These collections, along with Fittkau’s achievements in general, have prompted many authors of scientific descriptions to name new genera and species after him – over two dozen alone in several families of the Diptera, but also members of several other orders of aquatic insects, some Acari and a marine snail. Among Neotropical Chironomidae, “fittkauii” in

Fig. 3. E. J. Fittkau in Amazônia, ca. 1960
different generic combinations is the single most frequently occurring species epithet.

Although he has collected on every continent except Antarctica, the one region that stands above all others with respect to Fittkau’s attention is the Neotropics, especially the Amazon and adjacent areas. When Fittkau first came to South America in 1960 (see Fig. 3) – on leave from Plön to lead thelimnology department of the Instituto Nacional de Pesquisas da Amazônia (INPA) in Manaus – very little was known about chironomids from that region.

Although several dozen species had been named in the preceding 150 years, most of them could not be recognised because their descriptions were insufficient and their type specimens lost or useless. From the tropical Amazon only a handful of species were known, and this lack of a taxonomic foundation was particularly dearly felt in light of the enormous importance and diversity of these ecosystems. To remedy this situation, Fittkau spent the following years (1960-1963, and 1965) to collect a tremendous amount of material and environmental field data. Integrating this extensive first-hand experience with that of others and a wide-ranging scientific background, he then developed a comprehensive understanding of the fauna, functioning, and natural history of these ecosystems. Based on these insights Fittkau has tried for the last several decades to alert the world – from laypeople through science and academia to politics and international organisations – to the special beauties, global value and need for conservation of the Amazon and tropical ecosystems in general. Inspite of everything he has been doing for chironomid research, it is fair to say that he has made those efforts his most important activity, and the proportion this topic has assumed in his publications attests to that (see, e.g., Nos 77, 89, 92, 110, 124, 143).

Fittkau’s work on Neotropical Chironomidae in particular reflects all of the means highlighted in the preceding paragraphs, with which he has enhanced research and knowledge on these organisms and their roles in nature. True to his principle of collaboration, he sought from the beginning to find, win over or train fellow workers, especially from South America, and has generously aided and supported everybody willing to share in the necessary tasks. For example, early on he joined forces with Sebastião José de Oliveira, the first Brazilian researcher to study chironomids independently, and the two friends are still enjoying this most long-standing of partnerships (Fig. 4).

As the result of this collective effort co-initiated and promoted by Fittkau, our knowledge of the Neotropical chironomid fauna has greatly increased e.g., the number of described species is now close to 800 (author’s unpublished data) – and continues to grow faster at this time than in any comparable world region, in large part due to the contributions from a very active and hopefully still growing contingent of workers in South America itself. The entire history and development of research on Neotropical Chironomidae have been lucidly recounted recently by Fittkau himself (2001c, No.157; see also No. 160).

Looking in detail at Fittkau’s publications specifically on chironomid topics, we again find numerous most significant contributions to the field. These works range from diagnostic descriptions of single taxa through revisions on various classification levels (e.g. Nos 15, 36, 40, 47, 140) to phylogenetic and comparative examinations of morphological features (e.g. Nos 13, 18, 39), and to faunistic and zoogeographical overviews (e.g. Nos 23+65, 69, 70, 102).

On the descriptive level, Fittkau is the taxonomic author or coauthor of 3 tribes, almost 30 genera, and nearly 100 species – mostly in the Tanypodinae, but also in several other subfamilies. Many of his new taxa have widened our view of just how diverse and exotic chironomid morphology and biology can be (e.g. Nos 7, 16, 27, 54). From his earliest works to this day, Fittkau’s descriptions always impress by his eye for
discovering previously unobserved morphological details, and by his ability to discern those of diagnostic, classificatory or phylogenetic significance. These capacities may well be related to those of the born and trained field biologist who manages to spot and catch the objects most important to his hunt amid a jungle of distractions. And the same talent and appreciation for details also expresses itself in Fittkau’s drawings of always excellent scientific and artistic quality, whose combination of informative clarity and pleasing aesthetics many of us can never dream of matching.

But as much as this attention to detail in observation and presentation is productive and rewarding on its own scale, its main justification to Fittkau again is that it serves the higher purpose of making it easier for others to follow his scientific argument. In a paper on the delimitation of chironomid genera he wrote: “The most noble task for the systematist must be to establish order. The smaller and more cleanly the individual pieces of a mosaic are set, the clearer it becomes. Genera are phylogenetic or monophyletic units. They can contain information not only for the taxonomist, but likewise for those applying them in practice.” (FITTKAU 1968a, No. 26). Thus, a method is of little value until it produces results that are shared with and can be reproduced, understood and used by others. And on the next level, specialist sciences like taxonomy should strive to render and keep their data and systems accessible and useful to progress in more interpretive and applied fields.

As Fittkau has acknowledged (2001b, No. 156a) this basic guideline for his systematic work goes back to the early 19th century founders of dipterology, C. R. W. Wiedemann and J. W. Meigen. “I have ... tried to convey this demand ... to colleagues and students for their emulation” (FITTKAU, op. cit.): to develop an “arrangement of genera and species according to such characteristics as can be found more or less easily by other researchers” (WIEDEMANN & MEIGEN 1818, quoted in FITTKAU, op. cit.).

It was thus only fitting that in 2001 the German Society for General and Applied Entomology honored Professor Fittkau’s “outstanding accomplishments in taxonomic and ecological work on the Chironomidae ... and his untiring research effort for the Amazon region” by presenting him with the Society’s Meigen Medal (see GERSTMEIER 2001).

In his “Memoirs and diary sheets of a biologist”, Thienemann (1959: 403) wrote about Fittkau: “I do hope that he will go on to continue my chironomid studies.” There cannot be the least bit of doubt that Professor Ernst Josef Fittkau has more than fulfilled Thienemann’s wish. True to the legacy of his teacher and predecessor, he has greatly increased not just our factual knowledge of the Chironomidae, but also their appreciation and application in research at large, the geographic areas in which they are being studied, and the numbers of people to whom they are important and fascinating. Moreover, he has been doing his very best to promote all this in the spirit of cooperation and friendship.

Today we can enjoy reaping the benefits from this collaborative environment Fittkau and his contemporaries have sown the seeds for. But let us not take this for granted, as it is not a simple given in all comparable groups of scientists or people, and – like the natural environment we depend on – it is not guaranteed to persist around us without our continued contributions. It is up to us to ensure that this tradition will be carried on.

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LIST OF PUBLICATIONS BY E. J. FITTKAU

Titles are presented as numbered by Professor Fittkau himself, except for a few additions which are recognizable from lower-case letters after the number, e.g. “95a)”.


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**“THE NEWSLETTER GRANT”**

**Three grants each of US$ 500** will be given to scientists or students from Africa, Asia, the former East European states, and Central and South America to enable them to attend the XV International Symposium on Chironomidae in St. Paul, Minnesota in August 2003. To be considered, the applicant should give a presentation at the symposium, either oral or as a poster.

Applications should be sent to Trond Andersen before December 1, 2002, and the allocation will be decided by December 15. It will be understood that applicants do not get their expenses covered from other sources.

**Address for applications:** Trond Andersen, Museum of Zoology, Muséplass 3, N-5007 Bergen, Norway. (e-mail: trond.andersen@zmb.uib.no)