This volume is dedicated to Gerry Tremewan, a famous Cornish entomologist who worked on Lepidoptera from the age of 12 until his death aged 85, specialising for over 60 years on the Zygaenidae. A foreword by his son Malcolm is followed by contributions from Emmanuelle Briolat, Roger L. H. Dennis, Eric Drouet, Konstantin A. Efetov, Axel Hofmann, Marc Nicolle, Adrian Spalding, Gerhard M. Tarmann, John R. G. Turner, Zoya Yefremova and Hossein Rajaei. The book lists his complete bibliography of 220 papers and books, all the 68 taxa described by him and the 7 taxa dedicated to him. This special illustrated memorial book also includes Gerry's own memoirs in a separate section entitled Have Net, Will Travel: Reminiscences of an old entomologist.

Hofmann, Spalding, Tarmann & Witt (eds.) **Gerry Tremewan (1931 – 2016)**

Entomofauna

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Axel Hofmann, Adrian Spalding,
Gerhard Tarmann & Thomas Witt (eds.)

Gerry Tremewan (1931 – 2016)
The adventurous life of a Cornish entomologist

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Entomofauna

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Gerry Tremewan (1931 – 2016)

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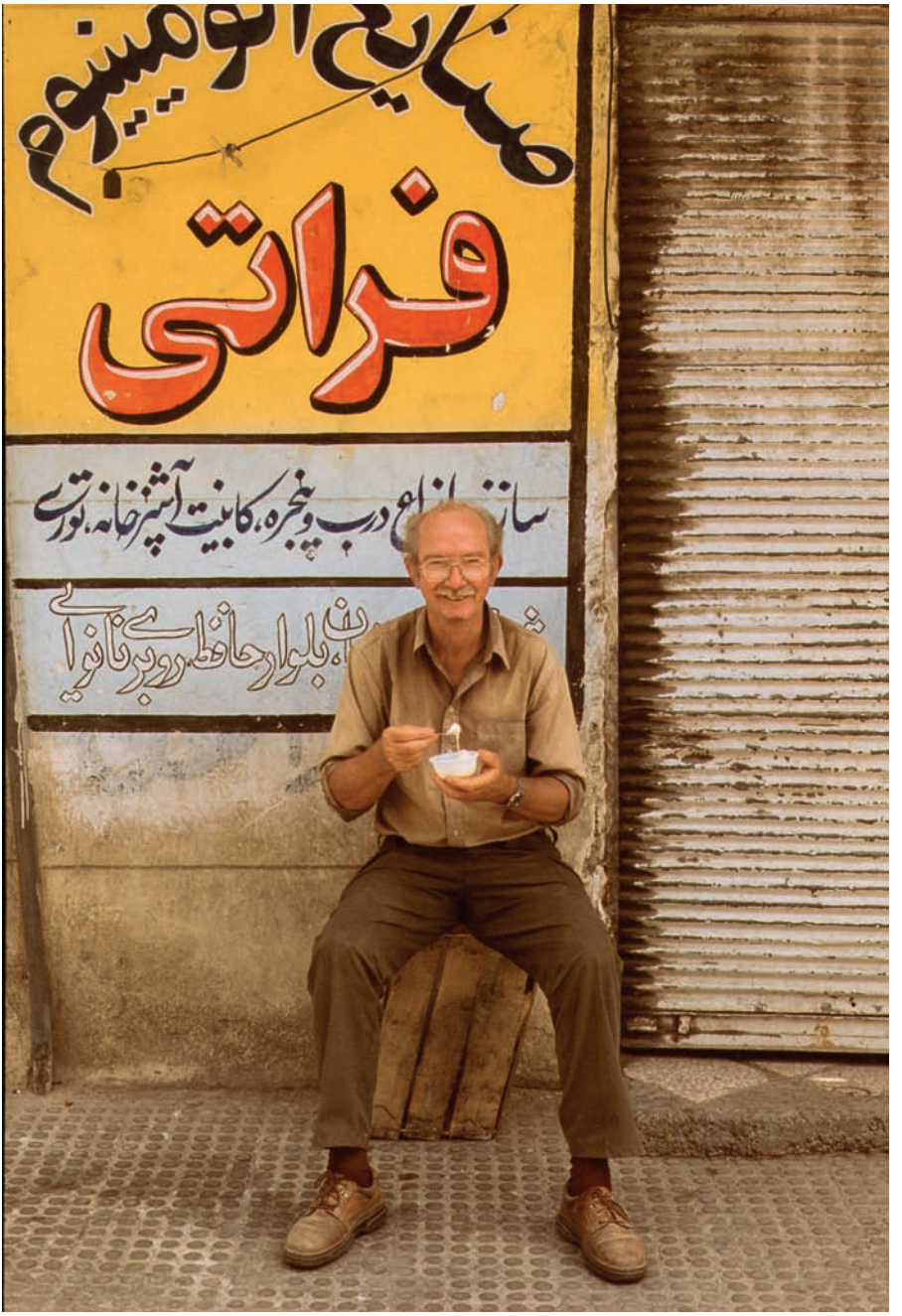
Axel HOFMANN, Adrian SPALDING, Gerhard TARMANN & Thomas WITT (EDS.)

Fig. 2. ***Relaxing with ice cream.*** Gerry at Semnan (Iran: 20.vii.2003). *Photo*: A. Hofmann.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Foreword

These memories evoke a Cornwall long since gone in the modern rush of life. For me these memories are especially precious, stories about my father's early life, my mother and my relatives. I knew him of course as a dedicated father but he was obviously so respected as a scientist and so dedicated to his work as well. These stories are just the start of his memoirs, so many pages of his memorable life written down but so many pages not yet written – so much unsaid - and so the opportunity is lost. We have kept some of his notes in, to provide small examples of his planned writings. At the very least, these words show that he made a real contribution to our knowledge of burnet moths and had a full and varied life, with many friends met and many places visited. I hope you enjoy these words as much as I do, unfinished as they are, as all lives end with words unsaid ….

Malcolm A. Tremewan

Fig. 3. ***Waving Gerry*** at the XIV. International Symposium on Zygaenidae (Tobermory, Isle of Mull, Scotland, 17–21 September 2014) with Ana Nahirnić (left), Axel Hille (laptop), Gerhard Tarmann (descreet smile) and Eric Drouet (full smile). *Photo*: A. Hofmann.

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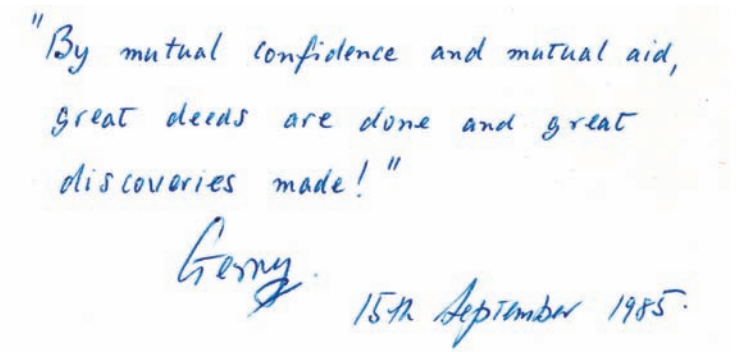

Fig. 4. ***Gerry in the steeply high-mountain world of oreal burnet moths,*** in search for *Zygaena cacuminum* near the type-locality at Shah-Kuh (Iran: Golestan, Kuh-e Gow-Kuhshan, 2,900–3,200 m, 19.vii.1995). *Photo*: C. M. Naumann (archive A. Hofmann).

Fig. 5. ***Last meeting in Gerry's home.*** Gerry, Axel Hofmann, Adrian Spalding; Pentreath, Truro, 20.ix.2016. *Photo*: M. Tremewan/A. Hofmann.

Hofmann, A., Spalding, A., Tarmann, G. M. & T. Witt

Prologue

On 20 September 2016 Axel Hofmann, Adrian Spalding and Gerry Tremewan sat together in Gerry's lounge in Pentreath. All three knew it would be the last time. In retrospect one could say the atmosphere was prosaic, nearly business-like. The only difference to former meetings was that Gerry got more quickly tired. The things we had to decide were well prepared, long discussions unneeded. All open questions concerning the ongoing editorship, the copyright, the index, the bibliography and glossary and many other things of the *Natural History of Burnet Moths*

were answered; the future editorship of the *Entomologist's Gazette* by Adrian was discussed; welcome tea breaks, offered by his son Malcolm, made the afternoon as uncomplicated as possible. Two days later Axel left Cornwall, memory sticks and DVDs of different contents with him. Adrian left for the Amateur Entomologist Society Exhibition at Kempton Park to help on a stall, and it was here (1st October) that he was told that Gerry had died, before a chance to say goodbye and take him out for one last dinner.

Adrian and Axel met again on 17 October at the funeral. Gerhard, who intended to speak some words in the chapel, lay at home in bed with coronary problems. Here, at the wake, Axel informed Adrian about the documents on the DVDs and memory sticks and discussed with him what to do. Already at the funeral it was decided to publish Gerry's auto-bibliography and his reminiscences. Later the original idea of a journal publication turned more and more into a separate book, especially when we got feedback from friends and colleagues on our request for short contributions and pictures. A few weeks later during a working meeting for the monograph in Munich the publisher Thomas Witt heard about our idea and immediately offered a complete supplement of the *Entomofauna* for the memorial book, with colour pictures and pages unlimited.

Meanwhile two obituaries and a memorial note about Walter Gerald Tremewan were published, with one more still to come. Gerry's reminiscences from his youth to the time in the Natural History Museum form the heart of this book, which furthermore contains his curriculum vitae (p. 214), a chapter which he titled 'A brief autobiography' (p. 108) and a short autobiographic description once written in an e-mail to K. Efetov (pp. 26, 27). His great importance for the Zygaenological group is dignified in the epilogue 'In the chapel of Mount Hawke' (p. 182). For these reasons we decided not to include another obituary here.

His reminiscences remain fragmentary and end with his time in the British Museum (Natural History) and his retirement. Subsequent headings and catch-words show that he intended to go on and he regularly told about the joy he felt when doing so. But his intensive work on Mendelian genetics, finally with his PhD doctorate at Aberdeen University (2000–2003), and even more the 'never-ending' project on the three volumes of *The Natural History of Burnet Moths,* were so time con-

suming that he stopped writing his memoirs, with so much left unsaid. In this time also falls his abandoning of playing the classical guitar – he started playing again as he became ill, which gave him great comfort and peace. He never complained about the pain his illness had brought but occasionally complained about giving up these things he missed; such sentimental talks usually ended with one of these oh-so-true platitudes "Ah, well, you can't do everything."

What we can do now, we have done with this book, with great satisfaction for our souls, as a memory of a great friend and entomologist, as a last *Thank You* for a wonderful common time.

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Fig. 6. *What a tree* ... Gerry posing for the camera during the XII. International Symposium on Zygaenidae in Antakya (Turkey: Hatay, 8.v.2010). *Photo*: A. Hofmann.

Fig. 7. *Streetwalk during fieldwork* with Emmanuelle Briolat near the coastal habitat of *Zygaena filipendulae* (Cornwall: Porth Nanven near Land's End, 7.v.2015). *Photo*: G. M. Tarmann.

Emmanuelle Briolat

Learning natural history from the champion of burnets

My PhD about the form and function of warning colours in Lepidoptera began with an incredible stroke of luck – to start a project focusing on the Zygaenidae on a university campus just down the road from Gerry Tremewan's house.

When I first visited him, I had only been working with burnet moths for six months, and conducted a single pilot experiment; I arrived hoping to learn a little more about the best sites for burnet moths in Cornwall, but quickly realised I had found much more. In the two years that followed, Gerry was unfailingly generous with his time and advice; he taught me how to distinguish male and female Zygaenidae using specimens from his collection, drove me to some of the best and well-hidden

localities for field collections in Cornwall, and even identified several specimens from continental Europe for me, sometimes based only on a single photograph of a wing. It was a pleasure to exchange ideas with someone who was genuinely interested in the trials and tribulations, results and new directions of my project. Always keen to get out into the field, he was happily picking his way along the Cornish coastal path on a quest for cocoons just days after surgery. His passion for the Zygaenidae never waned; even in his final days he looked forward to hearing about burnet moth research, from the work discussed at the latest symposium and the progress of a population of *Zygaena filipendulae* he was monitoring, to less glamorous topics such as my mishaps while rearing caterpillars.

In a very competitive academic environment, so focused on publishing papers as often and as quickly as possible, it's easy to lose sight of the critical importance of basic natural history. Yet an in-depth understanding of the phenology, natural behaviour and distribution of the species on which we are working is fundamental, underpinning our ability to identify the most appropriate times, locations and conditions in which to work on these animals, but also guiding us towards asking the most interesting questions and allowing us to interpret our findings in the most relevant ways. Amassing this detailed information is a prodigious task, and Gerry's encyclopaedic knowledge about burnet moths was an impressive testament to his dedication to fieldwork, collecting, breeding and studying these insects throughout his lifetime. His insights were invaluable to me as a complete beginner in the field, and I feel privileged to be among the last in a long line of students and burnet moth enthusiasts who have benefitted from his help.

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Roger Lance Hawke Dennis

Gerry

On January 2nd 2017 it would have been Gerry's 86th birthday and despite early January opening with clear, blue sunny skies it was difficult not to feel enveloped in gloom by his loss. There was something indestructible about him and a sense, when his illness was first made known, of incredulity – of him (and we in turn), having somehow being cheated by fate, with the publication of his magnificent work with Axel being so near to completion. But, of course that is nonsense: he was a realist and had an amazing life. His part in all our lives has been as a keystone of strength: he was clinically rational, honest, direct, tough and brave and ever humorous; he never let life's difficulties divert him from his interests, responsibilities, family or friends for whom he always had deep affection and concern.

His contributions to entomological science have been immense and it is disappointing that he was never formally recognised for them, though he would have always brushed that off as immaterial. Many professional entomologists have been honoured but none with his expanse of knowledge and, in his professional capacity at the NHM, he saved many from unfortunate *lapsus*. His more than 50 years editorship of the *Entomologist's Gazette* is not just a record of endurance but a multitude of records in that it has had such a universal impact in generating the contributions so many others have made, including my own. His personal contribution to the study of that most exciting group, the burnets, has covered every aspect of these extraordinary creatures, the many books and articles soon to be crystallized in the above mentioned magnificent volumes being prepared by, as he often said, his close and dear friend, Axel.

At a personal level it may seem incredible that someone I met only twice in my life should mean so much to me. Over three decades I must have had more and longer telephone calls with Gerry than anyone else, including my own family members. Of

course, we had so much to exchange on Lepidoptera! But, he also had that amazing capacity very few ever achieve, of empathy with others: many of his calls were made just to see how I was getting on as I witnessed year after year slipping by while stuck on this bed, but we soon drifted off to talk about burnets and butterflies, definitions, variation and genetics, at which point we usually both admitted we needed John Turner's help! We telephoned each other to give each other support – as in the 2000s he soon had enough problems of his own – and in doing so I learnt so much of the wider world I could not access, joining - in a virtual manner - into his 'burnet' adventures abroad, the landscapes, mishaps, discoveries, tricky moments with officials which he always brushed aside with amusement, and above all the pleasures he had in the company of his close friends. Many a story he told of NHM days which I can never repeat, but they were often hilarious! Wherever he went I was aware of his astonishing capacity to build deep personal friendships and his ease in social situations; that is a golden gift given to very few; I kept abreast of his many trips to London (the annual Verrall Supper which I doubt he ever missed), long train journeys to Aberdeen when doing his PhD, dinners with Adrian, visits to the museum, attendance of conferences abroad, and his real joy of journeys to foreign lands to do burnet fieldwork.

Beyond his vast contribution to entomology, his greatest achievement in my view was drawing out the deep affection that comes with honest, loyal devotion to one's friends and unselfish enthusiasm for his science. He was a no-nonsense, highly diligent practical scientist, with patience enough to wear out a few saints, certainly beyond anything I could ever muster. As I listened to that familiar soft Cornish burr, his descriptions of his coastal walks, I felt but a step away from my own family's ancestral origins at Mt Hawke[17] and Truro that I felt I would never see, but through Gerry came to know so well.

Roger L. H. Dennis
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[17] Note the third name of R. L. H. Dennis. "The Dennis family married into the Hawke Family at Truro, I suspect sometime in the early 19th century. My great grandfather was James Hawke Dennis and was responsible for providing the funding for Truro's main Cathedral tower in circa 1904 and a bell at St Buryan's Church." (R.L. H. Dennis via e-mail to A. Hofmann; 24.1.2017).

Fig. 9. ***With members of GIRAZ.*** Eric Drouet (left), Marc Nicolle, Louis Faillie, Gerry, Malcolm Tremewan, Bruno Lambert (France: La Flèche, 15.ix.1999). *Photo*: Thérèse Faillie.

Eric Drouet

"Pour Gerry"

As a lepidopterist a visit to the BMNH is a key venue. Having a look at a part of the Charles Oberthür collection and the one by Boisduval is nearly an obligation for people fond of Zygaenidae. To open the door of this institution, the key man was W. G. Tremewan. He did it very kindly on 13th April 1982. This was our first meeting. In 1985, during the Symposium on Zygaenidae held in Linz (Austria), we had the opportunity to better know each other. At this time he was the co-author of a huge catalogue of the Genus *Zygaena*. It is not so often one can meet such a sci-

entific leading light. Nevertheless he seemed humble and detached from the noise around. His calm demeanour had nothing in common with the demonstrative ardour of Clas Naumann and the constant pedagogical approaches of Ernst Reichl, during the Symposium. I considered that as his personal reserve.

In September 1987, he attend the Symposium on Zygaenidae held in Nantes (France) and I had the pleasure to guide him to Dompierre-sur-Mer, on a land where Charles Oberthür collected *Zygaena* and described some taxa and that is also the *locus typicus* of taxa described by Rugerro Verity. Of course he knew perfectly the *Zygaena* species flying at this time, but I had been a little surprised to see how carefully he collected some *Z. transalpina* and *Z. fausta*, a little worn at this time, to keep a memory of them and to try to launch a breeding programme. Then, after a memorable dinner on a boat that sailed on the Erdre River, in Nantes, I felt that the atmosphere relaxed. He became the Gerry that most of the zygaenid people had known. From the last day in Nantes, I keep in mind the image of Gerry climbing the JJ Rousseau Street, the pocket of his jacket swollen with a bottle of Muscadet wine I offered him in memory of the Symposium. He was walking peacefully away and I did not know whether if I should meet him again.

The dialogue continue from time to time, and in the 90's, as "amateur simplex" I had the honour of him asking me to contribute to his systematic catalogue of the Zygaeninae (1996) and to be in charge of the France territory. Thank you for this, Gerry and Axel.

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Fig. 10. Konstantin Efetov with Gerry in the Tyrolean Alpes, 20.ix.2012. *Photo*: A. Hofmann.

Konstantin A. Efetov

550 letters from my dear friend Gerry Tremewan

In 1989 I expected to describe a new species of *Zygaenoprocris* from Central Asia on the base of two old specimens (collected probably in the end of XIX century) deposited in Zoological Institute (St. Petersburg, at that time Leningrad). I wanted to discuss this discovery with a specialist. So I decided to write a letter to Mr Gerald W. Tremewan because I knew his important publications on the Zygaenidae. This was the beginning of our friendship that continued for nearly 30 years. During this period Gerry (as he was known among friends) sent me more than 550 letters, some of which I want to publish here in his memory.

Personally, I saw Gerry for the first time in September 1993 in the Zoological In-

stitute and Museum Alexander Koenig (Bonn). Then we met many times: during Symposia on Zygaenidae (Grietherbusch, 1993; Portree, 1996, Innsbruck, 2000 and 2012; Dresden, 2003; Simferopol, 2004; Lyon, 2006; Sofia, 2008; Hatay, 2010) and SEL Congress in Rome (2005). We had also excellent days in mutual scientific expeditions with our friend Gerhard Tarmann in the Crimea (9.vi.–16.vi.1995), Turkey (12.vii.–25.vii.1999) and Italy (8.vi.–20.vi.2010 and 28.vi.–13.vii.2011).

However, let us return to our first contact. In January 1990 I received an envelope from Great Britain by mail with a very kind letter on blue semitransparent paper. The text is below.

19th January 1990

Dear Dr Efetov,

Thank you for your letter of 12th December 1989. Although I am interested in all subfamilies of the Zygaenidae, I have specialized only in the Zygaeninae, consequently I do not feel competent to answer your questions on Procridinae. However, I have sent a copy of your letter and the drawings to my colleague Dr G. M. Tarmann, Tirolean Landesmuseum Ferdinandeum, Innsbruck, Austria. He is a specialist on the world Procridinae and should have no problem in answering your questions. I have asked him to reply directly to you.

The book "A Guide to the western Palaearctic Zygaenidae", to be published by Apollo Books, is still being written by my co-authors (C. M. Naumann, G. M. Tarmann) and myself. We hope to have it ready for publication within the next two years. As far as the U.S.S.R. is concerned, it covers the area as far east as the Uralskiy Khrebet.

With best wishes for 1990.

Yours sincerely,

W. Gerald Tremewan

This letter was also the first stone of the building of my friendship with Gerhard Tarmann.

Of course, later after our personal meeting, Gerry began to call me Kostya.

4th January 2001

Dear Kostya,

Thank you so much for your kind birthday wishes. I have to say that I do not feel 70 years old, so may it long continue! Thank you also for the photograph; I had forgotten all about it but now, of course, I remember having it taken. It brought back good memories of the symposium.

On Sunday I leave for London and will fly to Munich on Monday, then down to Innsbruck to work with Gerhard. I shall return to Cornwall on 24 January.

Once again, very many thanks for your kind thoughts and regards to you and your family.

Gerry

3rd February 2001

Dear Kostya,

Many thanks for your message. Yes, I had a wonderful and relaxing time in Innsbruck, visiting the opera, Salzburg (Mozart Museum, Natural History Museum, etc.) and curating the Tirolean Museum Zygaenidae for Gerhard. Poor Gerhard was (and still is) extremely busy with official work so that sometimes I rarely saw him. However, we did manage to finalise our paper on the biology of *Adscita obscura*, but only on the Sunday before I left for Cornwall! I am planning to publish this paper in April with colour plates.

I trust that you and your family are well. Personally I am OK and have only slight

health problems. I have been extremely busy with my thesis (now 190 pages on computer) and will be going to Aberdeen in early March to discuss my progress with my supervisors. Then direct to London to work with Gerhard at the BM for three days, then back to Cornwall.

Best wishes,

Gerry

8th April 2001

Dear Kostya,

I am spending as much time as I can working on my thesis. It is hard work but at least I am enjoying it. It is much more interesting than editing for a certain professor! In early March I visited the university at Aberdeen and both of my supervisors were pleased with my progress. I hope to complete the thesis within the next 18 months.

Best wishes to you and your family.

Gerry

A very good joke from Gerry:

25th September 2001

Dear Kostya,

Many thanks. I am so busy at the moment that there are not enough hours in the day. Someone suggested that 'I should retire from retirement', but if I did this then I would be bored.

Best wishes,

Gerry

When I sent Gerry a copy of my new book 'A Review of the Western Palaearctic Procridinae', he answered:

27th April 2002

Dear Kostya,

Many congratulations on what I can only describe as a superb book that will be essential to anyone for the determination of forester moths. You must have worked very hard indeed and when I did the editing for you I did not realize at the time that it would become a book. I think the production is excellent with beautiful figures and well-printed text. Thank you so much for a free copy.

A week ago I completed my thesis (380 pages) and I have sent a copy to each of my supervisors. Subject to any comments that they may make I hope to send two final copies to the University office before I go to Iran on 28 May. You will, of course, get a free copy of my thesis the next time we meet.

Best wishes to you and your family.

Gerry.

In 2002 Gerry became a Doctor and sent this message about the graduation ceremony to me and Gerhard Tarmann:

1st December 2002

Dear Kostya & Gerhard,

Yesterday, Sylvia, Malcolm, Mathew and I got back from Aberdeen, having attended my graduation ceremony at the university on Friday. It was a very enjoyable day for everyone, especially me although I felt slightly self-conscious as I was dressed in a scarlet gown and wearing the traditional hat during the ceremony. What is more important is that I now officially have my degree of Doctor of Philosophy.

Once again, my thanks to you both for all the help and support that you provided.

Best wishes,

Gerry

Even when Gerry is writing about his health problems, he cannot do it without jokes:

7th December 2002

Dear Kostya,

I have to rest completely for 48-36 hours following a couple of days in hospital where I underwent intensive coronary tests (angiography). The results are that there is slight narrowing of the coronary artery (owing to wear and tear and old age!) but the cardiologist tells me that I should not worry and that no treatment is necessary at present or unless the condition worsens, which is unlikely providing I eat sensibly and keep my cholesterol level down. In other words, very few dairy products but an occasional beer or red wine (or perhaps a pretty young girl!).

Best wishes,

Gerry

On 15th December 2002 I wrote to Gerry:

Dear Gerry,

My son together with Gerhard and me have created a new site in INTERNET devoted to the new series of books on the Zygaenidae. In this site the information about editors will be included. For this we need your photo and short information about you (0.5 page). Would you be so kind to provide me with these data?

With best wishes.

Yours very sincerely

Kostya

And Gerry sent me this following information about himself:

17th December 2002

Dear Kostya,

Herewith a few words about myself. Feel free to change or delete anything but should you do so please let me see the final draft. Moreover, if you think that more detail should be added, let me know.

Best wishes,

Gerry

Dr W. Gerald Tremewan was born at Mt Hawke, a village near the city of Truro, Cornwall, Great Britain, on 2 January 1931, and was educated at Redruth Grammar School and Cornwall Technical College. He obtained the degree of Doctor of Philosophy from the University of Aberdeen, Scotland, for his research on the genetics of the geographical and individual variation of *Zygaena* species, a group that he has studied for more than 50 years. Now retired, he was formerly employed as a research scientist and scientific editor in the Department of Entomology at The Natural History Museum, London (formerly the British Museum (Natural History)). With reference to the Zygaenidae, he is interested in their biology, ecology and genetics, especially the *Zygaena* species. In order to enhance his study of the latter group, he has travelled widely throughout Europe, North Africa, the Middle East and the Himalayas and, whenever possible, continues to visit these regions. In addition to Entomology, he is interested in Ornithology, Botany, general Natural History and Conservation. He is a life member of the Institute of Biology (London), a Life Member of the Cornwall Wildlife Trust, a Member of Societas Europaea Lepidopterologica, a Member and past President of the British Entomological and

Natural History Society, a Life Member of the National Trust (for England), a member of Sociedad Entomolygica Aragonesa, the Editor of *Entomologist's Gazette* (a quarterly journal on Palaearctic entomology), an Associate Editor of Moths and Butterflies of Great Britain and Ireland, and a former Editor of Noctuidae Europaeae. Other interests include classical music, especially that from the XVI and XVII centuries, and the classical guitar, which he plays moderately well.

In 2003 we (Gerry, Gerhard and me) were editing the volume of 'Proceedings of the 7th International Symposium on Zygaenidae' and I have received this very kind message from Gerry:

11th January 2003

Dear Kostya,

Both Gerhard and I appreciate all the work that you have done with this volume, not only with its production but also in correcting scientific errors that I was unaware of. Very many thanks. I hope that the volume will be published by the end of this month so that I can pick up my copy when I am in Innsbruck.

With very best wishes to you and your family.

Yours sincerely,

Gerry

30th March 2003

Dear Kostya,

Very many thanks for your congratulations on our Golden Wedding Anniversary. We had a dinner reception in the Old School Pub at Mt Hawke, the school that I first attended when I was five years old (now a pub) and the village where I was

born. Axel was able to attend and sat with two Cornish lepidopterists so they had plenty to talk about! It was indeed a great evening.

Axel returned home yesterday and we had a very good and productive week working on our book, but of course there is still much to do! At the moment I am feeling rather tired and recovering from so much concentration working on the computer.

I am delighted that you like my thesis. Regarding Russian spellings, I will remember this when preparing it for publication.

Best wishes and thanks.

Gerry

24th June 2003

Dear Kostya,

Many thanks for your recent message. The Proceedings volume arrived this morning and may I offer you many, many congratulations on producing such a fine work. Congratulations also to the printers and everyone concerned. My sincere thanks to you also for the hard work that you have put into the editing and for picking up many things that I missed (in the latter respect I am getting old and sometimes I find it very difficult to concentrate).

Yes, our trip to Italy/Sicily was very productive and as you probably heard from Gerhard, we both obtained new biological/ecological data. I now have cultures of *oxytropis* and *romeo* (a few from Sicily). A good percentage of the *erythrus* larvae were parasitized but the parasitoids are interesting and I think that possibly some are new host records. The single larva of *rubicundus* was also parasitized by *Cotesia zygaenarum*, but nevertheless this is the first parasitoid record for this species. We were actually too late for larvae of *rubicundus* so we will have to go about two weeks earlier next time.

I had big problems with my left leg when in Italy and the first week I could hardly walk on the slopes. However, since my return to Cornwall the problem has greatly improved so that I have decided to go to Iran after all. I hope that all will go well.

When I told my doctor that painkilling drugs were of no use at all but that alcohol helped a great deal he laughed and said that this was due to relaxation of the muscles. Now he has provided me with a new drug that relaxes the muscles so that walking is not so painful.

My very best wishes to you and the family.

Yours sincerely,

Gerry

Gerry wrote me a very kind letter after the IX Symposium on Zygaenidae that I organized in my university in Simferopol on 7–10 October 2004:

15th October 2004

Dear Kostya,

Once again, my congratulations on providing everyone with an excellent symposium. Moreover, thank you so much for your many kindnesses and help during my visit, which made my stay in Simferopol so enjoyable. It was a pleasure to meet your lovely daughter who, when I last saw her, was just a little girl! Her English is very good so that we were able to talk about many things. I was delighted to find that she has, like me, an interest in the classical guitar and I was impressed with her playing. She so much wanted me to play but I could not remember anything without the music, not having played since I retired 13 years ago! It has been just a question of too much entomology! Hearing her play has stimulated me to play again, which I have always found very relaxing, and I promised her that I would practice, so that I could play to her when we next meet!

Kindest regards.

Gerry

Fig. 11. Konstantin Efetov between Eyjolf Aistleitner (left), Gerry and Gerhard Tarmann (right), (Turkey: Hatay, Antakya, 5.v.2010). *Photo*: A. Hofmann.

When in 2014 I congratulated Gerry to his next birthday and wished him health and happiness, he answered:

3rd January 2014

Dear Kostya,

Thank you so much. I will try to be healthy – as for happiness, slightly difficult at the moment. But I have a good family and so many good friends, including yourself, so much appreciated.

Best wishes,

Gerry

I was so proud.

Another message from Gerry:

15th July 2014

Dear Kostya,

I am OK at the moment, thank you, although a little sad, as it will be the second anniversary of Sylvia's death on 1 August. But life must go on and I am moving on, as she made me promise to do. I get up at 06.00 hours and work until 22.00 h every day, work in the garden, edit *Entomologist's Gazette*, entomology etc. Also I go for long walks along the coast. Over the weekend I finished preparing all the specimens that I collected on my trip with Gerhard. So you see, I am always busy and do not have enough time in the day. And how are you? I hope all is well.

Best wishes to you and all my friends in Simferopol,

Gerry

In December 2014 I have sent Gerry the photos taken in the Crimea and he answered:

30th December 2014

Dear Kostya,

I can't remember whether I thanked you for the two lovely photos you sent of you and me, if not, then very many thanks. I well remember the huge hole in the ground (we call it a sinkhole) with you holding my hand.

Best wishes – may I also take this opportunity to wish you and your family a very happy, peaceful and prosperous 2015.

Gerry

When I sent Gerry my best regards in January 2015 he answered with a very good English joke:

3rd January 2015

Dear Kostya,

Many thanks for your best wishes. Yesterday evening my son and grandchildren took me for dinner at an Indian restaurant in Truro – very enjoyable.

From now on I have decided to reverse the numbers in my age, so I am now 48!

Best wishes,

Gerry.

My reaction was in the same style:

4th January 2015

Dear Gerry,

Many thanks for your message.

O! In the next year we shall be of the same age: 58 years old! :)

With very best wishes.

Yours sincerely

Kostya

And finalizing this contribution I want to mention that three taxa of Zygaenidae were described in honour of Gerry by me and Gerhard Tarmann (see p. 212):

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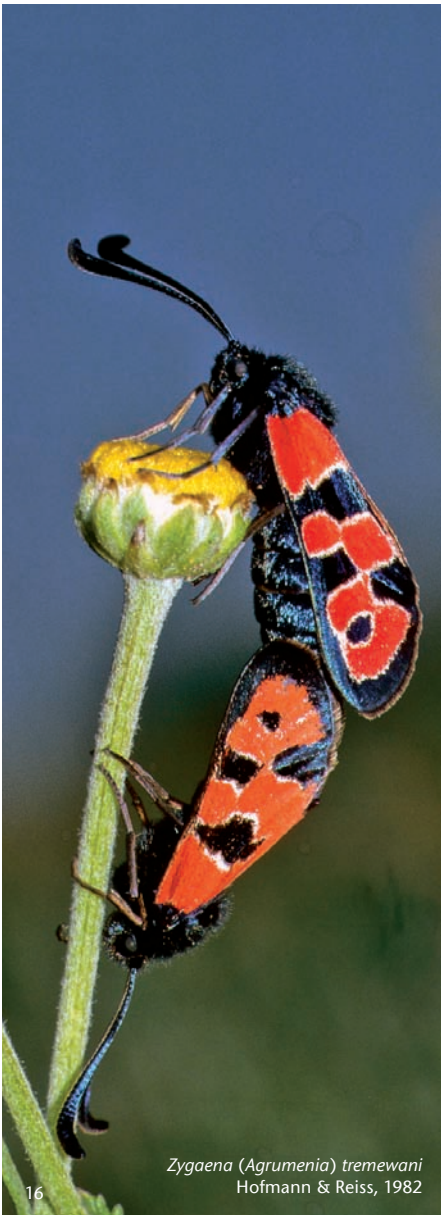
Axel Hofmann

With Gerry on tours: Two unforgettable moments

"120 holotypes" (Tunisia, June 1981)

Since the late 1970s I was in postal contact with Gerry Tremewan and in May/June 1981 we had been on tour for the first time, it was the beginning of 35 years lasting intensive friendship. Together with Günter Reiß I flew from Stuttgart Airport to Tunis. Gerry was already there. "Hallo Mister Tremewan" [with German accent], "Forget that, I am Gerry". Three burnets enthusiast on a three weeks-tour in Tunisia, it was a wonderful experience for me, the newcomer of the group. And Goddess Fortuna was elegantly on our side. Never anymore I saw such burnet-rich habitats in this country; wherever we stopped, wherever we walked: burnets. The highlight was the Jebel Chambi (1,544 m) region near Kasserine, the highest area in this small country. In an especially interesting landscape near the small hamlet "El Hamad" southeast of Thala we stayed for several days, the diversity of biotopes was too rich and fascinating for only a flying visit. End of May, beginning of June six species of burnet moths were on the wing, one (*Zygaena marcuna*) even new for Tunisia. To prevent too much collecting competition we usually walked at a distance from each other, just so that a loud call could be heard. "A strange *algira* here", "Yes, but worn", "What is it", "Must be aberrant forms". In the evening in the hotel we showed the daily's yields of pinned specimens to each other and saw that each of us had 2 or 3 of these "strange *algira*" in his series of true *Z. algira*. Unfortunately all flown and worn, especially the males looked like flattered wrecks. There was already a suspicion that it might be something else, as the majority of unambiguous *Z. algira* looked fresh. Back to Germany I immediately dissected a male genitalia and informed my two "tutors" about the result: "Definitively no *Z. algira*, surely closer related to *Z. alluaudi*", an endemic of Morocco. It was clear that the "new" was a

Figs 12–15. In the 1980s in North Africa. 12–14, Jebel Chambi region (Tunisia, 25.v.1981); 12, **Axel Hofmann** (left) with Gerry and Günter Reiß (Fig. 14). 15, After the Tajine at Lahcem's restaurant at Tizi n'Tichka, 2,000 m (Morocco, 21.vi.1989). *Photos*: A. Hofmann.



16 *Zygaena* (*Agrumenia*) *tremewani* Hofmann & Reiss, 1982

new species for the eastern Maghreb or even for science. But how can one do a description exclusively based on such worn specimens?

The following year Günter Reiß and I decided to go to Algeria and after an adventurous travel with taxis, hitchhiking and walks we crossed the southern border with Tunisia near Tebessa - just for a short visit in "El Hamad"; now one week earlier than the year before we hoped to find at least a few fresh specimens of this burnet moth, to designate the holotype and on which a serious description could be based. Before we left Germany Gerry wished us "at least one perfect specimen for the holotype". But what a surprise: The species was common, in perfect conditions. Copulae, attracting females, nectaring moths, sometimes three or more on one scabious – it was like a dream. We collected hard! The following evening in the hotel Cillium in Kasserine I decided to inform Gerry with a postcard - telephone was not available and internet did not exist - about our luck. "Gosh, how can I write what we found" I asked Günter. "Write: Dear Gerry, we have 120 holotypes…"

Back home to Germany Günter and I described the new species and dedicated it to our common friend: *Zygaena tremewani* Hofmann & Reiss, 1983.

"A piss would help!" (Morocco, June 1989)

After a three-days-stay in higher altitudes of the High Atlas, with pleasantly warm days and cool nights, we left Oukaimenden (2,650-3,200 m) and drove down in the arid plain towards Marrakech (500 m). The day before we made a long excursion up to the pass which leads to the Tachdirt valley, a classic biotope since the days of Le Cerf, Schwingenschuß and Zerny. In the evening we decided to have a civilized bye-bye-meal at the restaurant *Chez Juju* and got an excellent *Tajine au citrone*, drank a bottle (or two) of red wine, discussed the former days and planned for the next week. The night we did not sleep too long….

Our main focus on this tour was on the biologies of burnet moths, especially on the photo documentation of missing preimaginal biologies for our Natural History book of as many species and local forms as possible. For that reason I had already been in Morocco and Algeria for three months with my van. Gerry came by airplane via Tanger where I picked him up on 7 of June and he accompanied me the next three weeks in June. We usually slept in the car, only occasionally went in a hotel or camping place, mainly to have the urgently needed shower. Every night, before we could crawl in our sleeping sacks, the car had to be rearranged as hundreds of cultures and bottles with host-plants occupied nearly the complete back part of the van. Whoever does it, knows that rearing on tours is time consuming and a continuously stressful job. The car had always to be stopped in shady places, fresh host-plants are needed at least all three-four days, the boxes regularly have to be cleaned, taken care that no condensation occurs in boxes with freshly emerged larvae, females for ovipositing had to be placed in the late afternoon sun, not to forget the documentation and to photograph all these stages etc…Mid of June the 'breeders success' on this long tour culminated in a daily job of 2-3 hours.

On 21st June we had to leave the lovely Oukaimenden as host-plants of many cultures were no more available and cultures got critical; I had not cleaned the boxes for two days as I decided to wait with the cleaning until fresh fodder could be offered.

At this time of the year the endless lowland plain between the High and the Middle Atlas, the Haouz, can be an extremely hot locality with temperatures over 45°C

during the afternoon. No wind at all was blowing, we sat exhausted in the car already after two hours driving and many more before us. Sweat was running down, the shirts were wet without activities. We both did not talk too much these hours, everyone was wandering with his mind back to the left high mountains. For an hour or more I was intensively searching for a shady place to stop the car and clean and feed the larvae. But no inviting site was to be seen from the driving car on the asphalt road. I turned my expectations down, at least shady. Even that was difficult to find; either it was open land, semi-desertic without palms or trees or intensively used cultivated land, with farmers working on it. To stop there would mean, you get visitors, sitting in and around the car and asking you questions as long as you stay there. After a while I decided to take the next best (or not) place. Some hundred metres beside the main road we found a silent place, at least partly shady under a single thin palm tree. I immediately started with the larvae, Gerry knew it would need two or more hours and decided to sit on a camping chair outside of the hot van. He had to press his head against the car as this was the only shade he could get. I had to sit in the car, with all the boxes and instruments and because a slight squall could blow the larvae on the tablet away. A farmer leisurely worked with an obviously old wheelbarrow near our "emergency camp", but did not take notice of us. The only sound was the quiek-quiek-quiek of his wheelbarrow. It became more silent when he had passed our van, and became louder when he approached. Nothing else – only quiek-quiek-quiek, louder and quieter, for an hour or more, we did not speak anything, just sweat. I was not sure that Gerry noticed this noise or not. I was not even sure that I had noticed it, but it must had made me nervous as I suddenly whispered, more to myself "Oh, God, give him oil" and got a loud – almost shouted – "A piss would help" by Gerry. Nearly startled I looked out of the van and saw a discrete smile in his sweaty face, telling me that in his imagination he already did that.

Later when we continued the tour we realised this was the only kind of conversation we had for hours. No idea how often this story made us laughing in the following quarter of a century.

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Figs 17, 18. Skiing down the boulder scree on all *five* at the type-locality of *Zygaena naumanni*. When Gerry - here at the age of 82 - saw me taking the camera he just had to laugh at the old entomologist's behaviour. „If my grandchildren could see that…" [now they do] (Iran: Esfahan, Khonsar 10 km S., 8.vi.2013). *Photo*: A. Hofmann.

Fig. 19. ***Picnic in the Sarthe departement*****, Gerry between Marc Nicolle** (left) and his father Jean Nicolle (France: Les Mées, 7.vi.1998). *Photo*: L. Faillie.

Marc Nicolle

My Gerry Tremewan

First meeting

My first meeting with Mr W.G. Tremewan took place in France in June 1998. Then, for our second one, only one day later, this was simply with Gerry. Just to say what an easy man to live with he was. Simple and direct.

So, in June 1998, he and his wife Sylvia were invited to Louis Faillie's home in La Flèche to spend some days, visit the touristic places of the area and some good local habitats of burnet moths and additionally discuss at length their common passion in the English/French (or French/English) language - without forgetting to

test and to taste Thérèse and Michèle Faillie's (Louis's wife and daughter) cooking. As a newly converted burnet amateur and a rather close colleague of Louis, I was invited also to spend a week-end in Louis and Gerry's company. A bunch of memories so present in my head nearly twenty years later with these two masters, no more with us now.

And also the beginning of a new centre of interest for Louis and myself. During the visit to the last biotope in those two days, I took the two friends to a place close to Le Mans, where I knew a population of *Zygaena filipendulae*. In early June, no moths were on the wing but we were able to collect some last instar larvae on *Lotus corniculatus* plants which were given to Gerry. Some days later, after Gerry and Sylvia had returned to Cornwall, I learnt from Louis that among the *filipendulae* adults that hatched, there were also one or two samples of *Zygaena carniolica*.

Indeed a few years earlier, *Z. carniolica* had been discovered in the same department of Sarthe, some kilometres to the north-east. Both localities had the common point to be located quite close to motorways, with embankments abundantly implanted with bird's-foot trefoil. This gave us the idea, Louis and myself, to explore systematically these motorway verges which resulted in the evidence that in this part of France at least, this particular type of habitat appeared quite suitable for burnets and favoured colonization routes for several *Zygaena* species.

Unforgettable week of field work

A few years later (June 2009 – in the following millenium), I had the chance and the privilege to share several days with Gerry in various parts of France and in Sardinia. We had together taken the opportunity of an annual meeting of the French GIRAZ group in the south of France to organize a trip including a visit to the Tyrrhenian islands of Sardinia and Corsica and their endemic burnet species - *Zygaena corsica*.

We started driving through a large part of France, visiting biotopes in the Auvergne, then Languedoc (spending a couple of days within the GIRAZ group) followed by Provence (with the Sainte-Baume range), all habitats where we could observe some local classical species, either as adults or as larvae.

Fig. 20. Marc Nicolle (left) with Gerry in discussion (Bulgaria: Sofia, 19.ix.2008). *Photo*: A. Hofmann.

And then, this was the island tour landing in north Corsica early in the morning of 23 June so we could reach the centre of Sardinia in the evening, in a little hotel of the Gennargentu range. After a couple of days in that area, searching for and studying *Z. corsica* in its habitats, both of us drove back to Corsica via the ferry where after some unsuccessful attempts to discover new populations of the moth, we finally did a similar job with the known population at the col de Teghime near Bastia.

Sharing these ten days with Gerry has been a real pleasure to me. I got to know the two faces of his personality : the man (the human I should say) and the scientist. Discussing one thing and another with him made the time flow quickly and quietly: family, life, France/England relationships, the British Museum (at that time) ... and of course, burnets and their environments with the immense knowledge he had accumulated from his multiple experiences and contacts with past and present giants of Zygaenidae science (field-trips particularly in Iran and Morocco, taxonomy, entomologist colleagues, anecdotes of all kinds). I was also impressed by the scientist : his precise program for the comparison of Sardinian and Corsican populations, the implementation of this program, the synthesis of the observations. All was very instructive for me, more or less a self-educated amateur. I remember particularly his day-to-day discipline of recounting of the significant features of the field-work on his diary. But once this was done, there was time to relax and enjoy life: drinking a glass of beer or wine (or two glasses) according to local practices, appreciating the indigenous food, complimenting the waitress in a quiet manner,

Fig. 21. ***After refreshing*** in Santa Lucia di Mercurio (France: Corse, 28.vi.2009). *Photo*: M. Nicolle.

with his discrete smile and a solid sense of humour (British humour naturally!). Whereas I know that he was already suffering from painful neuralgia in eating and talking. A perfect fellow in short.

What remains now? Memories (only good memories), photographs, the feeling of having been lucky enough to share moments with a gentleman, a man of his type, the vision of the smile on his face and his papers with a special consideration for the one dedicated to *Zygaena corsica* in Sardinia and Corsica.

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Fig. 22. ***On Gerry's 80th birthday.*** **Sharing a drink with Klaus Sattler**, a close friend and long-standing colleague at the British Museum (Truro, 2.i.2011). *Photo*: Edith Sattler.

Klaus Sattler

An early memory of Gerry Tremewan

In the beginning there was *Zygaena freudei* Daniel, 1960, and although he was not involved in the description of this species it was in connection with it and other *Zygaena* species that the name Tremewan, horribly mispronounced but spoken with some respect, first came to my notice. I was given to understand that 'Mr Tremewan' was a budding specialist of the Zygaenidae at the world famous British Museum (Natural history) in London,

I had graduated from university in 1959 and, in early 1960, coinciding with the description of *Z. freudei*, arrived in Munich to take up my first post as a microlepidopterist at the Zoologische Staatssammlung. Having preserved from childhood days a fleeting interest in the burnet moths (Sattler 2003) I was fascinated by this new

species. Although the genetically quite diverse genus *Zygaena* no doubt hides to this day many unresolved problems, the European fauna was at that time already so well explored at the species level that the discovery of a supposedly new species seemed a small sensation. Four specimens had been collected in Spain in 1959 by one of my new colleagues at the Staatssammlung, the coleopterist Heinz Freude, after whom this remarkable new taxon was named by another new colleague, the seasoned Macrolepidoptera curator Franz Daniel.

As by co-incidence I was on the verge of going on a collecting trip to Spain, jointly with my hemipterist colleague and friend from university days in Kiel, the late Reinhard Remane, and my younger brother, Gunter Sattler, and as the type-locality of *Z. freudei* was on our planned route, I requested locality details from the collector which he willingly provided. Freude apparently had picked up the type series, two males and two females, during a brief roadside stop on waste ground ('Ödland') somewhere north-east of the city of Alicante along the main road towards Benidorm. In mid-May 1960, almost to the day a year after the discovery of *freudei*, we explored suitable habitat north-east of Alicante and indeed succeeded in collecting some specimens.

When in 1961 I paid my first visit to the British Museum (Natural History) I took a *freudei* specimen along for the museum collection and thus not only became personally acquainted with Gerry Tremewan, an Assistant Experimental Officer in the Entomology Department and responsible for the Zygaenidae, but was immediately involved with him in an animated discussion of this fascinating taxon, to which I could contribute my own observations.

Thanks to Freude's description, that included some helpful minor landmarks, we had been able to collect our specimens at the type locality or at the very least quite close to it in one of the dry river beds just off the main road from Alicante to Benidorm. When, at the same spot, we also found *Z. occitanica* (De Villers, 1789) in numbers, I considered it strange that Freude had not taken some examples of that taxon as well, and this omission may have been a reason why Daniel had left *occcitanica* completely out of his consideration. Our suspicions were aroused when my brother found a mixed copula of *freudei* and *occitanica*. He immediately posed

the question 'is that the problem's solution?' but I urged caution as interspecies pairings are not uncommon in *Zygaena*. As it happened, Daniel had compared *freudei* primarily and in some detail with *Z. carniolica* (Scopoli, 1763) and had also illustrated the male genitalia of the unrelated *Z. ignifera* Korb, 1897, another red Spanish burnet. When I voiced my surprise that he had made no mention of *occitanica* Daniel did not seem particularly concerned. In view of our field observations I dissected a male *occitanica* to compare with *freudei* yet did not find any significant differences in the genitalia, even though Daniel, to whom I showed the slides, claimed to see some. One has to bear in mind here that Daniel himself never made any dissections. In this case he had merely studied slides of the male genitalia, probably no more than one each, of *freudei* and *carniolica* (and a few unrelated *Zygaena* species, including *Z. ignifera*), which had been prepared for him by the French noctuid specialist Charles Boursin, who at that time happened to be working in Munich on the Staatssammlung Noctuidae.

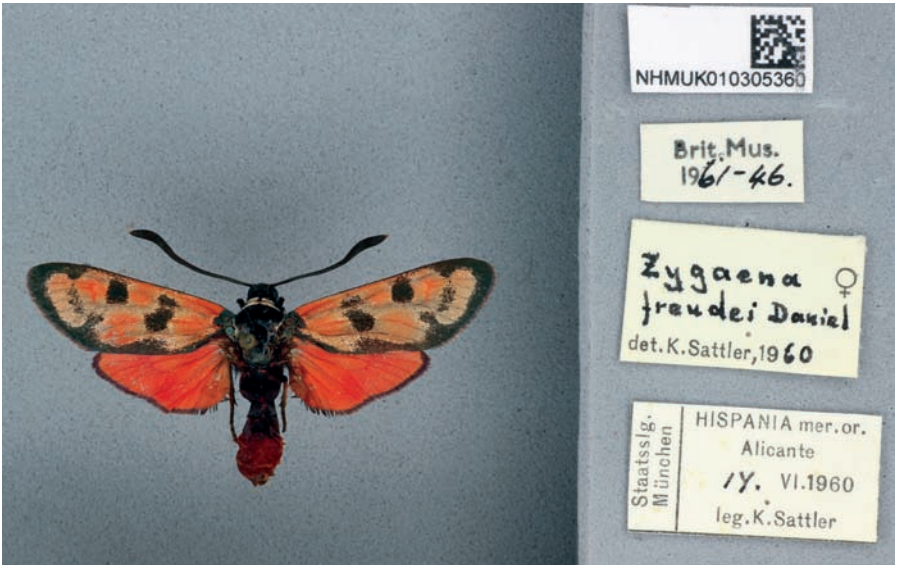

Fig. 23. ***The object of our first scientific discussion.*** *Zygaena occitanica freudei* Daniel, 1960, taken just a few weeks after its description as a new species. *Photo*: David Lees.

I do not remember whether Gerry and I reached any firm conclusions on that occasion but our first discussion was followed by many more on this and a broad range of other subjects after I myself joined the British Museum (Natural History) (now Natural History Museum, London) in 1966. The proximity of *freudei* to *occitanica* rather than *carniolica* was soon recognized, and although it was still recorded as a species by Reiss & Tremewan (1967), that status was disputed by other zygaenid specialists such as G. Reiss and H. Burgeff. It was first reduced to a subspecies of *Z. occitanica* and is now considered to be an aberration of the latter, albeit an interesting one.

Little did it occur to me at the time that this first discussion with Gerry on *Zygaena freudei* would lead to years of collaboration on non-zygaenoid, mostly bibliographical subjects and a greatly valued, life-long, close friendship.

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Fig. 24. ***At the Verral Supper***. **Adrian Spalding** (right, without glass) with Gerry and John Turner (London, 4.iii.2009). *Photo*: A. Hofmann.

Adrian Spalding

Gerry Tremewan in Cornwall

First time

I first met Gerry in 1989 in the Natural History Museum. I had submitted a short paper to the *Entomologist's Gazette* on moths in Devon and whilst I was in the Entomology Section of the Museum researching moths from Ecuador I thought that I would pop into his room to meet him and see whether any editorial changes were required. Little did I know at the time that we would become firm friends and that

I would ultimately end up as Editor of the *Gazette*. He was very welcoming and encouraging – when we got to know each well later on he claimed to remember the meeting. Whether he did or no, I do remember it, how his tidy his desk and how dark the room. Later I used to visit his study at home - with its floor to ceiling cabinets, neat piles of books and journals on the floor, desk lamp, paintings of Zygaenidae presented to him by Zygaenid enthusiasts, and a photo of a topless girl playing the classical guitar (Gerry was an expert guitar player) - and the kitchen (full of transparent boxes with tiny Zygaenid larva) – and the lounge, where his wife Sylvia sat always in the same chair by the window. After her death, Gerry took to sitting in the same chair, and he would occasionally cook a chicken curry for us both.

Monthly dinners

When he retired to Cornwall, where he was born, we met again and formed the habitat of dining together, once or twice a month, starting at the Old School House pub in Mount Hawke, formerly the building where Gerry went first to school. We went there regularly, sitting in an alcove where we talked privately about entomology and people and could not be heard and where we could escape the loud music. We were always nearly the last to leave. We moved restaurants when the Old School House changed hands and after several trials we found a Chinese restaurant in Hayle where the food was good, the staff were friendly and one waitress in particular was both beautiful and intelligent. Gerry took his wife Sylvia there as well and I accompanied them both, with their son Malcolm, on Sylvia's last restaurant meal before she died. I took my own family there on birthdays. Gerry and I competed for the waitress's attention; he was convinced that she preferred him, I thought that she preferred me!

The Indian Restaurant

One of Gerry's favourite restaurants was an Indian restaurant in Truro. About a year ago I went there with Gerry and, deciding to have something different, asked

Gerry what a particular fish curry dish was like. Gerry said it was very good, so I had it - and was very ill during the night and the following day. I mentioned this to Gerry and he said "that's funny I was ill when I had it as well!" I said that I would never go there again, despite him constantly pressing me to change my mind. When he was in hospital I promised him when he got better that I would take him there. It was not to be. So – on the eve of the funeral I went there with his son Malcolm and his great friend Axel to fulfil my promise - the fish dish was no longer on the menu, which I was pleased about, and I had a lamb dansak - but again I was ill during the night!

Kate Pestkowska called Gerry "our dear rogue with his bobble hat and spirit of a 25yr old." We stayed with her when we dined at the annual Verrall Club dinner in London. It was a long way back by double-decker bus to her house after a good meal and plenty of red wine, and the last time we went (March 2016), even Gerry (then a mere 85) looked tired.

Looking back, it now seems very odd that, as two entomologists, we spent our time together eating, drinking and talking, not walking in the countryside with nets looking for moths. I have always loved the Zygaenids, the honorary butterflies, but my own path took me into the night; I believe that there are very few Zygaenid species that fly at dusk (such as *Zyganea nocturna*). Although Gerry occasionally ran a light trap in his garden, we never sat around a light trap over a white sheet in the woodland rides, upland grasslands and sand dunes of Cornwall; Gerry used to call it "working the light", an expression I have never heard elsewhere. I very much valued his expertise and knowledge and often discussed my long-term research on the nocturnal *Luperina nickerlii* with him. Every two years Gerry would ask whether I wanted to attend the International Zygaenid conference and each time I said would love to but could not as it coincided with the peak *nickerlii* field season.

We did have a few field trips together. Gerry had heard that Roger Dennis was bringing out a book on the butterflies of islands (Dennis & Shreeve, 1996) and we thought we could contribute; in addition, Gerry was keen to see whether *Zygaena filipendulae* and *Z. trifolii* had reached the small islands of St Michael's Mount and St Georges Island just off the south Cornish coast.

Off we went to St Michael's Mount on 1st June 1995, walking across the causeway at low tide, round the back of the castle with special permission from the National Trust, and eating a good lunch of crab sandwiches sitting at picnic table looking across Mount's Bay to the small town of Marazion. I found the small cases of *Luffia lapidella* everywhere (the presence of the flightless females, cryptic on the lichen-covered rocks, indicated that they were here when the Mount was still joined by dry land to the mainland) and Gerry found a strong colony of *Zyganea filipendulae* and two larvae of *Z. trifolii*, one of which (a male) proved when it emerged to be an example of the rare six-spotted form (Tremewan 1995). The *filipendulae* were very early, their condition suggesting to Gerry that they were flying as early as 25th May; Gerry and I talked of writing a joint paper on the changing phenology of burnet moths in Cornwall, something we shall now never accomplish.

In 1996, we caught the boat from the small fishing town of Looe to St. George's Island and found *filipendulae* flying amongst *Maniola jurtina* and *Aphantopus hyperantus* – these zygaenid records were the first for these islands. We intended to visit Mullion Island, for which we needed a boat to cross the narrow tidal channel from Mullion Harbour; to my regret we never did this, a chance now gone for ever. And now there will be no Gerry at the Verrall dinner and I will do the only thing I can – drink a glass of good red wine to his memory.

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Fig. 25. ***Two close friends on their last tour.*** **Gerhard Tarmann** with Gerry in the Alpi Orobie (Italy: Passo San Marco, 14.vii.2016). *Photo:* Melania Massaro.

Gerhard M. Tarmann

Memories on field trips with Gerry

10–31 May 1987

Field work in Morocco with two great Zygaena *men*

I always had wanted to go to Morocco to collect all these wonderful endemic zygaenids known from there. Moreover, I was keen to discover something about all

the unknown biologies of the North African Procridinae. However, things are not so easy in that part of the world. One needs a lot of experience to be successful. The habitats are extremely isolated and without some primary knowledge it is hard work to find something.

Therefore I really considered myself to be a lucky man as my German mentor Dr Karl-Heinz Wiegel, who had been many weeks in Morocco, collected extended material there and published information on the biology of several species, asked me to organise a trip to Morocco. It was a great fortune that Gerry Tremewan, who also was several times in Morocco for field work, wanted to come with us.

On 10 May 1987 we met in Agadir in one of the new tourist hotels with the 'oriental' name 'Ali Baba'. Already this evening we could see that we were a good team The two great old men were full of knowledge, expectations and spirit and I was eagerly listening to their stories about the 'rules' and the 'difficulties' in this country. Dr Wiegel allowed everyone in Germany whom he liked to call him 'Herr Wiegel' (without the title 'Dr') and I was proud to be one of these privileged person who could address him as Mr Wiegel. He had only one leg due to a war injury. Therefore he wanted a room for his own and Gerry and I shared the second room. The deal was that we always divided the bill for the hotel into three parts to compensate for Mr Wiegel's extra costs. The next morning we picked up the small Renault R4 that I had hired. I was the driver, Gerry was the navigator in the front seat beside me and Mr Wiegel was sitting in the rear supervising and commenting the progress of our trip. Our first target was to find the nominotypical *Zygaena maroccana maroccana* which had the reputation to be very rare and almost extinct. Gerry claimed to know a place near Essaouira, the old Mogador. This species was discovered there and Mogardor is its type locality. Mr Wiegel and I were keen to see that place, of course.

It was raining when we started in Agadir and this was the first surprise for me. I had only seen cloudless pictures from Morocco so far. We drove up the western coast northwards. The rain was heavy and did not stop until Essaouira. The road was extremely slippery and I had to drive very carefully. It was already noon when Gerry suddenly and out of nothing asked me to turn right. The landscape was boring agricultural land and nothing that looked like a habitat for *Zygaena* was seen for me and also not for Mr Wiegel who was as surprised as me. We were slightly

south of a village with the name Ounara. After only about 100 meters Gerry suddenly asked me to stop at the left roadside. 'We are here', he commented shortly. I parked the car beside the road where a little ravine came down from a field. Then we went out. The rain had just stopped and the temperature was nice (26℃). A westerly wind was blowing. Gerry slowly walked up the short slope to the field and we were following. What a surprise when we came to the field. It was an abandoned crop field and it was covered with *Ononis natrix*, the larval host-plant of *Z. maroccana*. When we looked closer we saw one specimen of *Z. maroccana* resting beside the next. A great number of specimens were sitting on these plants, singly and in copula. Moreover, there were also plenty of *Z. favonia littoralis* around that could be observed laying eggs on *Eryngium* plants that were scattered between the *Ononis*. We had another deal between us three. I was collecting all *Zygaena* for Mr Wiegel to compensate his handicap, Gerry collected alone and I received all green Procridinae from both of them in return. This day there were no green foresters seen, but enough *Zygaena* to delight us. We collected for about two hours. Then we went on. The two senior collectors had decided to stay overnight at a famous place in the mountains where they both had been before.

There was nothing to collect on the whole way between this wonderful place south of Ounara and Marrakesch. In Marrakesch we took the road to Tanahaoute-As-ni-Tizi n' Test and in the late afternoon we came to a village named Ouirgane. Just over the bridge that crosses the river there is a hotel and restaurant with the interesting name 'Auberge ou sanglier qui fume' (resthouse to the pipe smoking boar). This place was owned by a French lady, Madame Hélène Thévenin-Frey. What a beautiful place! There were several houses built as pavilions in which the rooms were situated and a main house with the reception and the restaurant at the entrance. The whole place was a large flowering garden with water and springs. Madame was not here. She had another property in Marrakesch where she was staying at the time. The keeper recognised Gerry immediately and we got a pavilion on our own with two rooms and a nice bathroom. The meal in the evening was superb and we had a good bottle of red wine. Then we dealt with our specimens and our notes. Mr Wiegel and Gerry had put several females for laying eggs into small boxes and all had to be labelled and cared for.

Fig. 26. ***Like two converts towards Mekka*****. Karl-Heinz Wiegel** (left) and Gerry searching on *Rumex* sp. for larvae of *Adscita mauretanica wiegeli* (Morocco: High Atlas, Oukaimeden, 2,600 m, 20.v.1987). *Photo*: G. Tarmann.

The following days we collected in the Great Atlas mountains in various localities with good success. On one of these trips we met a couple from Vienna that were also collectors. When we greeted them and asked who they were we only got the short unfriendly answer in eastern Austrian dialect from the man: 'Gorbatsch. Kennt jeder.' (My name is Gorbatsch. I am well known by everyone.). As these two clearly did not want to have us near we left quickly. The world is full of strange people and we laughed still years later about that short comment from this crazy collector. When I visited Mr Wiegel in Munich in the following years this phrase was often part of a game between us two. When I pushed the doorbell at his house and he asked through the loudspeaker at the door who was there, I announced myself as 'Gorbatsch. Kennt jeder.', and it was clear for Mr Wiegel who wanted to visit him. Highlights of these days were *Z. maroccana goundafica* that we found below the Kasbah Tagoundaft and good series of *Z. algira* around the Tizi n'Test.

Then we visited the Anti Atlas where again Gerry claimed to know one extremely good locality that he had discovered in 1983 on a trip together with the hymenopterologist Ken Guichard. On the way into the mountains we collected at

Col de Kerdous, a well-known locality for zygaenids, and found good series of *Z. maroccana kerdousensis, Z. favonia littoralis* and *Z. loyselis mesembrina*. We stayed overnight in Tafraoute at the large Hôtel Les Armandier on top of the hill. The whole night we could hear the monotone praying from the adjacent Koran school down in the valley that reminded us of the strange intonation and rhythm on a steam engine climbing a mountain. Gerry was not very amused because he could not sleep all night and was really angry in the morning. I had slept marvellously and so did Mr Wiegel. However, a good breakfast gave Gerry some consolidation and then we started for Gerry's 'super locality' to see what we would find there. The road to this place is in a fantastic landscape. Stone blocks of granite the size of a house, some in the shape of large balls, form a unique landscape. After about 15 km driving southwards we reached a pass-like plateau at about 1650 m. This place is called Tleta de Tasserirt. There is a lot of good vegetation and grass and flowers. As it must have rained also here during the last days the place was full in blossom. And it was also full of *Zygaena*. *Z. maroccana kerdousensis* was here in masses and also *Z. favonia littoralis* in numbers. We collected the whole day and the two *Zygaena* men were in their element. But also here there were no green foresters around. I walked high up on the hills but could not find anything. In 1983, Gerry and Ken Guichard had collected 1 male and 1 female of *Jordanita algirica* at this place. But at that time *Z. maroccana* was just out with a few fresh specimens and today it was already too late in the season.

We stayed some days in the Anti Atlas and found good *Zygaena* on various localities. The two great old men knew every locality and we also found some new ones. After this we went back into the High Atlas from the South. For this we tried to follow the old caravan trail from Ouarzazate via Ait Benhaddou and Anemiter to Telouet. This 'road' was meant for camels, horses and donkeys and it had not improved recently and was really a challenge for our car. The landscape was extremely scenic but the road was unbelievable. Sometimes it ascended so steeply on step-like rocky ground that Mr Wiegel and Gerry had to get out of the car and I took that part alone with the accelerator fully pressed down and with high speed just to keep the engine going. We received the award for our 'braveness' soon. When we crossed the river just some kilometres south of Anemiter there was a wonder-

ful flowery meadow with orchids. There we discovered a very nice population of *Zygaena trifolii*. This is the southernmost locality of this species in Africa. It was nice to watch the joy that my two friends had when they chased the pretty quick flying specimens which were on the wing almost continuously. I helped as well as I could. Of course I also looked for *Adscita* here but there was still nothing to find. Between Telouet and the Tizi n'Tichka road there is the type locality of *Zygaena glaoua* Wiegel, 1973 (now a subspecies of *Z. youngi*). But there things have changed dramatically within the last 15 years and we did not find any *Z. glaoua*. The area is heavily grazed and reforested and the meadows had almost disappeared. Instead we found a lot of other *Zygaena*. Then we returned via Tizi n'Tichka to Marrakesch and Oirgane where we settled for some more days in the' Sanglier qui fume'. We revisited our localities around and finally I found one female of *Jordanita algirica* just south of the Tizi n'Test that laid eggs into my box. However, we still had not found the larval host-plant.

The last day in this region we went up to the famous mountain place Oukaimeden. Both Gerry and Mr Wiegel had been here several times, Wiegel once for several weeks when he discovered the biology of *Zygaena johannae*. I was keen to go there because this is the famous type locality for *Adscita mauretanica wiegeli*. It was Wednesday, 15 May 1987, when we came up to Oukaimeden. We immediately started all three to search the wet meadows for larvae of *Adscita*. The place was full of *Rumex* and soon we found the first feeding marks of *Adscita* larvae. Then we found the adult larvae and this was really a highlight. The larva is very similar to that of our *A. statices* and also the feeding marks are more or less the same. This is interesting because *A. mauretanica* is a very isolated species that has completely different genitalia from all the other *Adscita* species. I made exact notes and habitat photos and we took a number of larvae which we altogether tried to describe in the evening. We also found larvae of *Z. johannae* and *Z. aurata* on *Eryngium*. We stayed overnight in an 'auberge' at 'Madama Juju', whom both of the friends knew well. We were treated like old friends and received excellent food and good wine. What a good day!

Then Gerry and Mr Wiegel started to worry about my catches so far. They already were more than satisfied with their result. But I still had only found a single *Jor-*

danita female and some larvae of *A. mauretanica*. They suggested going to the Middle Atlas next where we should be able to find more green zygaenids. Of course I agreed happily and we went. We drove a whole day northwards and reached finally Ifrane when it was just going to get dark. Again it was Gerry who knew good accommodation. The hotel 'Perce Neige Samir' he had used already earlier. It was still in good shape at that time with nice rooms and good food. However, only five years later it was a rotten place and a shock for us when I stayed there again together with my son on another trip to Ifrane. When trying to feed the larvae Gerry found that in his suitcase a box with larvae of *Z. alluaudi* had opened and the larvae, the droppings and the plants had spread over all his clothes and other belongings. Gerry was always a gentleman but on that evening he swore like a factory worker from whom one had stolen his cigarettes.

Early next day we started first to Azrou to see Mr Wiegel's famous locality where he had collected 99 specimens of *Z. zuleima* in one day in 1961. But also here the landscape had changed significantly. In 1961 this was a marshy area with flowery meadows with a small creek and along this creek this species was extremely common. Now there was no water at all, there was a road, grazed plains and nothing that looked like it was 26 years ago. Wiegel was genuinely shocked. We found some better localities up on the Balcon d'Ito but no localitiy suitable for *Z. zuleima*. And there near El Hajeb I found finally *Jordanita algirica* in numbers, with ovipositing females, copulae and the larval-hostplant *Carthamus calvus*. There were also *Zygaena* around and we all were happy. The observation that the females of *J. algirica* lay their eggs always in the north to north-east direction on the larval host-plants to protect them from the sun gave us the opportunity to search for eggs on *Carthamus* plants on many localities where the plant occurred. And we really found more localities and eggs just based on this information. Both Gerry and Mr Wiegel were first uncertain about my theory but then they were impressed to see how well this worked. That was just the biological work both of them liked as much as I.

We visited also most of the well-known localities in that area. In the Mischliffen crater I was again very lucky and found adult larvae of *A. mauretanica mauretanica,* and this time not on *Rumex* but on *Helianthemum*. This was a sensation for

me, of course, because it showed that one and the same species can have different larval host-plants belonging to different plant families at different localities, and this was totally new for *Adscita*.

Now we found Procridinae everywhere. On Col du Zad the Austrian collector Ernst Reichl had collected a series of *Jordanita rungsi* some years earlier in July. We had a look at that locality, and really, again on *Carthamus calvus* we found adult larvae of this species for the first time. The number of our larvae was increasing and the feeding and describing together with all the other notes about observations took 1-2 hours every evening in the meantime.

We still had a few days left and went back to the Great Atlas. Again we did the tour around the mountains, first over the Tizi n'Test, then south of the mountains to the East almost to Oarzazate and back over the Tizi n'Tichka. On this way we collected *Z. trifolii, Z. felix, Z. algira, Z. maroccana, Z. aurata, Z. favonia* and *Z. loyselis* and again a few green foresters. At one river we had to cross the whole riverbed as the piste was under water. But the riverbed was full of round stones and it was normally unpassable for a Renault R4. However, we only had the chance to pass or go back about 60 km. So Gerry went out and spoke to some of the boys that are everywhere around in the field in Morocco and one is always surprised where they may come from. He explained to the boys that we have to cross the river. Together they went barefoot through the water and we could see that it was not very deep but deep enough to cause troubles for our Renault. The depth was around 40cm and the river had a current. I suggested that both friends leave the car and I try to enter the river with high speed. The boys were ready to push if I could not make it. However, Mr Wiegel, as an old German soldier who never runs away, insisted in staying in the car and do the adventure with me together. I drove back for about 200m. Fortunately the piste was straight. Then I pushed the accelerator and we gained speed. I entered the river with about 80km/h. The car jumped over the water like a flat stone that is thrown into the river in an acute angle. I made it almost, but just about 5 meters from the other riverside we were finished. However, about 6-7 boys pushed with loud noise and we finally ended up on the other side of the river without greater damage and without wetting the engine. 'Good job!' Mr Wiegel commented shortly. Gerry came in, we thanked the boys, distributed some presents and went on.

Finally we went back to Agadir. But now the question was: how to pass the customs with the bags full of living larvae? First Gerry went and he obviously had made it. But with Mr Wiegel, who was slow due to his leg, we were as suspicious as a black camel in the desert. Moreover, exactly on that day older custom officers were training young employers how to check the luggage of the passengers. There was no other way as to show the larvae. Mr Wiegel, whose French was better than mine, started to explain at length that we are important scientists etc. etc. The officer was not impressed at all and asked simply for a permit. I saw that I had to intervene quickly. With all my poor French knowledge I started to tell the main officer that this is an emergency case. We just had found all these larva feeding in the orchards about 100km inland and destroying the crop quickly. We have to go to Munich immediately with them to get a proper determination that we can do something against the catastrophe. There was no time to lose for bureaucracy. If he did not let us through he will be responsible for major damage in the agriculture of his country. He feared troubles but he had to keep his authority. Therefore he explained quickly to the younger employers that in emergency cases one also can make exceptions. And off we went. Mr Wiegel was speechless. He shook his head and with a broad laugh in his face he said to me 'Unbelievable, you are a genuine criminal'. But he was very relieved to sit in the plane with all his specimens. I must admit I had little bad feelings because collecting was not forbidden at that time in Morocco and permits were only needed in protected areas. Our zygaenids were on no red list. But we would have missed our plane and could have lost our specimens and all our work. There were no problems in Germany and we finished one of the best collecting trips I have ever had in my life.

When we told this story later to Gerry he also was impressed because he had noticed that just when he was already through the customs the officers had come to train the younger colleagues and he was terribly worried about us two.

This trip had brought Gerry's interest to North African Procridinae. In the next years we worked intensively on that topic in the collections of the Natural History Museum in London and in other museums and collections in Europe and I had another trip to Morocco. Moreover, the museum in Innsbruck received the collection of Francis Dujardin that contains exceptionally rich material in that group from

North Africa. In 1995 we published together a revision of the North African Procridinae in the *Entomologist's Gazette* 46.

Saturday, 29 May 1999 (on a collecting trip with Gerry to southern Anatolia).
An unusual and the definitely last night ever in Osmaniye.

The day had been excellent. We had visited one of Gerry's favourite collecting places in Turkey, on a pass about 7 km N of Saimbeyli, the former Hadjin, in the Toros Mountains, a locality known since Staudinger's times. We had taken good series of zygaenids, amongst them fresh specimens of *Zygaena diaphana* Staudinger, 1887. This is its type-locality. Especially exciting was that we also could observe the oviposition of *Adscita statices drenowskii* (Alberti, 1939), for the first time ever and take good photos of the eggs in nature on *Rumex acetosellae*. Whenever on fieldwork it was Gerry's aim to discover something about the early stages and the larval host-plants of a species and so it has been mine and therefore our trips were always in good harmony. Totally satisfied we hoped to be able to reach the Nurdağ Geçidi (today Kušçubeli Geçidi) in the Amanus Mountains, another favourite place that Gerry had visited in the earlier days. There we hoped to find a place for the night.

However, on the way down from the mountains in a southern direction we had to queue behind several huge harvesting machines that rolled slowly down the narrow mountain road to the plains. There was no way to overtake them and they never stopped to let the long row of nervously tooting cars pass. It was almost dark when we finally reached the plain and Osmaniye, the capital of that area. So we were forced to find a hotel there.

Osmaniye is the centre of an agricultural province about 70 km East of Adana. It is far from the touristic routes and it is one of the most unattractive places in Turkey. Situated in the southern plains it is also one of the hottest towns one can imagine. Desperately we searched for accommodation but the few hotels and guest houses were all occupied. Finally we could find a 'hotel' only with the help of a policeman. It was situated just in the centre on the market place. But what a building! It was

the narrowest house I have ever seen in my life. The breadth was exactly equal to that of one room. The building had four floors and therefore four rooms. In front of each room there was the staircase with a steep and narrow stair. Of course, only the room in floor four was available. We had no choice and took it for this night. We really had a job to carry our luggage up these four floors. The room was so small that the bed filled it completely. A small niche was the so-called 'bathroom' with a basin and the toilet beside, both almost touching the bed. Much to our surprise there was warm water (possibly heated by the sun on the roof). However, the flush of the toilet was not working and when we examined this shortcoming we found that the handle ended just in the middle of nowhere. No connection – no flush. Moreover, as we opened the door to the cupboard in the wall we faced in 5 cm distance the bricks of the wall. It gave just space for sticking a poster to the wall but no more. Our mood sank remarkably. Moreover, we both were hungry and thirsty. And if Gerry could become angry it was when he did not get anything to eat and to drink. But first the collected specimens and the larvae had to be done, of course. There were always clear priorities. There never was a discussion about that. Just as we had spread the little boxes with the larvae over the bed and started to do the cleaning and feeding the light went off. Gerry began to swear while I was running down to the car for the headlamps. As we finally, totally covered in sweat, had manged to do our job the light had still not reappeared. By the way this was not the fault of our hotel, the whole town was black. When the light came back eventually we darted down to the road and entered the first small restaurant where we could get at least some food. What a surprise! The cook could even speak English and offered us steaks which we happily accepted. Happy about that good turn of our fate we ate and drank beer and finally went to bed. As we were really tired we slept in spite of the heat and the noise on the road.

Exactly at 5 ò clock in the morning we were literally blown up by a horrible noise just in front of our window. In a distance of only two meters from the open window (a fact that we had overlooked in the dark) the loudspeaker of the minaret of the mosque beside the hotel howled his 'Allah Akbar' into our ears. This was too much for Gerry. He jumped out of the bed and cried into the loudspeaker while holding his hands over his ears: 'Shut up! Shut up!' But nobody listened. We could not es-

cape and suffered. Truly 'shaken' we left Osmaniye after a Spartan breakfast and swore both never to put a foot into that crazy town again. However, the collecting on Nurdağ Geçidi was excellent and Osmaniye quickly forgotten.

9–26 July 1999

A strong team in Anatolia.

More than 4300 km on the search for distributional borders and unknown biologies.

For many years Gerry and I have had contact with our Russian friend Konstantin A. Efetov, Professor of the Crimean University in Simferopol, who worked for many years intensively on the zygaenids, especially on the territories of the former Soviet Union. In 1995 we had met in the Crimea all three together and Gerry liked the extraordinary beauty and the exciting biotopes in the Crimea that Konstantin showed us. Already then we had planned to have a joint collecting trip to Turkey one day. But it took us four more years to make this true.

In 1999 two books were published by us. The first one was 'The Western Palaearctic Zygaenidae' (Naumann, Tarmann & Tremewan) and the second 'Forester Moths' (Efetov & Tarmann). In both books a lot of information could be published for the first time. However, when compiling the data for the typescripts we clearly had the feeling that still too many things were completely unclear or unknown. Such unknown information has a strong fascination for most scientists and it was not different with us. We therefore decided to stick to our agreement of 1995 and go to Turkey together and simply look in the field for the truth, for so far unknown distributional borders and especially for unresolved biologies. Again it was Gerry who was most keen in finding additional information about eggs, larvae, pupae, habitats and habits of species as he already had the dream to write a book about the life history of *Zygaena* together with his German friend Axel Hofmann one day in which they would summarise all their observations.

Gerry and I met in Ankara on the evening of Friday, 9 July 1999. I had already taken the hired car as my plane was much earlier than Gerry's. Unfortunately Konstantin could not come before 12 July. We therefore started for a first survey into the

landscape looking for potential habitats of zygaenids. That evening we only went a short step eastwards until Kirikkale and stayed overnight there in a small hotel. As always, a good beer after a day of travelling and a good meal cheered us up. We were happy to be together again and had a lot of ideas and questions about our moths. The next day we started full of energy and expectations into the field. However, this summer was hot and on the hills and mountains south of Kirikkale only worn Satyridae butterflies were found and no zygaenids. The season was already over here for our moths. Therefore we went further into the hills to a locality called Beynam where Gerry had already been. This is a remarkable place. The locality is situated at 1200 meters in a small valley where a creek runs down from the densely forested hills. Where the poor gravel road crosses the creek there was a large willow that perfectly gave shadow. Here we parked our car. A southerly exposed extremely diverse steppe slope on the edge of oak and *Crataegus* bushes mixed with *Phragmites* and *Rubus* scrub along the creek gave the place immediately the impression that this must be a good habitat for zygaenids. And it was. The place was green and full in flower and we immediately took *Zygaena purpuralis, Z. carniolica, Z. loti* and *Z. ephialtes* and all were around in numbers. The foresters were much rarer. However, one male of *Jordanita chloros* on a *Scabiosa* flower and a single male of *J. subsolana* disturbed from a thistle showed us that the season was also coming to the end here. However, if it was late in the season the time should be perfect for *Rhagades amasina*. We therefore concentrated on the *Crataegus* bushes as this was considered by us as a potential larval host-plant. The larva of this species was described by me in 1983 after Clas and Storai Naumann had sent me some eggs from a female from Turkey that they took on their trip in in 1982. I could rear the larva on *Prunus spinosa* in Innsbruck and published a description of the biology of this species. However, nobody has ever seen a larva in nature and the larval host-plant was still not known. Field work was hard that day under the burning sun. There was a slight steppe wind from the east and the thermometer showed 35°C. The first *Rhagades* specimen came out of a *Crataegus* bush at around 16.00 and so unexpectedly that I could not get it. However, the dark habitus of the moth clearly indicated that it must have been *Rh. amasina*. Both Gerry and I were thrilled and the heat was quickly forgotten. In the next hour we worked the bushes centimetre by centimetre and really could only find two females that were resting

on the *Crataegus* twigs (later determined as *Crataegus pentagyna*). Excited we took them alive to take photos and hopefully eggs. We searched also for eggs on the leaves, the twigs and the stems, but without result.

After this good news we searched hard for a nice hotel. It was already later afternoon. We found one finally on the road back to Ankara three kilometres south of Gölbaşi. This hotel with the name Uluşan was newly built and seemed to be a very well-used place by wealthier people from Ankara that came here for the weekend with their families and friends. Today it was Saturday and therefore we had a job to convince the keeper to give us a room. However, after a long discussion he finally gave in although all rooms were booked (in the hope that someone will not come) and we could move in. There was also a restaurant on the first floor. What a nice place! A large terrace gave a marvellous view over the lake in the valley and the illuminated swimming pool of the hotel where people enjoyed themselves in the water. It was like in a dream between the palm trees. The food was superb and the wine excellent for Turkish standard. We both were relaxed and happy and had a wonderful sleep afterwards.

The following day we returned to our good locality at Beynam. We collected 10 species of zygaenids and observed *Rhagades amasina* flying around *Crataegus* in good numbers. We took another seven females for oviposition. The species is active in the late morning and in the early evening. Between 12.00 and 17.00 the place looks dead. It is simply too hot and the moths hide in the shadows. This applies for burnets and foresters.

Next day, on Monday, 12 July, Konstantin arrived and we picked him up from the airport. After having dropped the luggage in the accommodation at the hotel Uluşan we immediately went to our locality at Beynam. Konstantin most of all wanted to study *Rhagades amasina*. He was especially interested in the chaetotaxy of the L1 larvae as he had discovered large differences between the different genera and subgenera of Procridinae (in contrary to the very uniform situation in Zygaeninae). Moreover, he needed adult larvae for the determination of the karyotype as the related *Rhagades pruni* has a very outstanding haploid number of chromosomes, vic. 47. This differs significantly from the average number of 31 in most Procridinae. Therefore it was essential to examine other *Rhagades* species.

When we came to the locality Konstantin immediately found eggs of *Rhagades amasina* on the underside of the leaves of *Prunus spinosa* and a little bit later also of *Pyrus eleagnifolia* and *Crataegus pentagyna*. We worked the area on this day and also on the next day and collected lots of valuable information about the habits and the biology of several species. For *Rh. amasina* we found three different larval host-plants (oviposited eggs on *Pyrus eleagnifolia*, *Prunus spinosa* and *Crataegus pentagyna*) and took enough eggs so that we could be sure to be able to rear this species from the egg in numbers and examine the larvae and the chromosomes. Later Konstantin studied the karyotype of this species on the base of our material and the result was extraordinary: the haploid number of chromosomes was only 12‼! The chaetotaxy of the first instar larvae was also unique.

After this success we went on towards the east. Our next stop was Cappadocia, an Eldorado for zygaenid fans. Many extraordinary whitish forms appear in various species and are most probably an adaptation to the creamy white volcanic rocks of Cappadocia. We reached Ortahisar at 19.45 and took accommodation in the nice family hotel Yakut that is situated on top of the hill and has a huge garden. For all of us this was the first time of collecting in this famous area. Gerry was here earlier and so was I but it was always at a time where we could not collect zygaenids. Next day, on Wednesday, 14 July 1999, we found an almost perfect place for field work on the way from Ortahisar to Nevşehir in a valley to the left where a spring was at roadside and the old road went into the hills. The creamy white *Zygaena carniolica kappadokia* was there in millions. And all of them were fresh. They were sitting in huge numbers on the flowers of a yellowish *Scabiosa* but also on the rocks and in the vegetation. We took a number of reference specimens but mainly concentrated on the other species that we found and on their habits. This time we found females of *Rhagades amasina* ovipositing on *Crataegus pentagyna*. Moreover, we found almost defoliated trees and bushes of apples and pear (*Malus* sp. and *Pyrus* sp.) and feeding marks on *Prunus spinosa*, *Crataegus pentagyna* and *Pyrus eleagnifolia*. The damage on the apple and pear trees was remarkable and the larvae of *Rh. amasina* seem to be able to defoliate these trees almost completely. It is interesting that this species never has been recorded as a pest. Obviously such intensive feeding in orchards only happens from time to time when the population density is exploding.

We also found exiting populations of *Z. formosa, Z. olivieri, Z. loti* and *Z. filipendulae* and even four specimens of the rare *Z. laeta*. We stayed two days in Cappadocia. In the evenings we wrote our observations down. After this a cool beer was always welcome. The food was good at Yakut's and the keeper, his wife and their slightly disabled son were really nice hosts.

The trip has started very well and we were happy. Now it was time to consider what to do next. One of our main targets was the biology of *Adscita italica storaiae*, a population that I had described as a species from north-eastern Turkey (and now is considered to be a subspecies of *A. italica*). This was possible because I had received again a few eggs from Clas and Storai Naumann and could rear the larvae in captivity on *Rumex acetosa* and obtain some adults. However, nothing was known about its habits, biotopes and the real larval host-plant. Moreover, *A. italica storaiae* has a very limited distribution and is replaced by *A. statices statices* in the North and *A. statices drenowskii* in the West. The distributional borders of all of them in eastern Turkey were unknown.

We discussed whether we all agreed to go all the way east to the province of Kars, but all of us were keen to find *A. italica storaiae* and learn more about *Rumex*-feeding *Adscita* in the eastern part of Turkey. On the way we stopped several times but only at two localities (at Büyükgümüşgünnear Pinarbaşı, East of Kayseri, and at Taşlıdere South of Sivas) did we collect with success. Daily thunderstorms in the afternoons and the evenings made the collecting difficult. On Sunday, 18 July (by the way, Konstantin's birthday), in the early afternoon we reached Sarıkamış, a famous collecting place in the province of Kars. The weather was perfect and the temperature nice at 2200 m elevation. Sarıkamış was not at all an attractive place. There was a large military camp and the roads and the houses were dirty and full of young soldiers. But there is also a nice historical stone-built railway station and the town must once have been more important and more beautiful. We changed money and bought bread. Besides this we noticed that every second house here in this road was a brothel. We hesitated to look for a hotel here. However, a nice policeman recommended us to look outside the town in a ski resort called Çamkar. This big and modern hotel is situated on a hill on the edge of extended pine forest (çam = pine, kar = snow). A ski lift leads from here to the top of the mountain. A

broad ski piste and several new snow groomers showed us that this really is an important place for winter sport. However, the hotel was empty in mid-summer and more or less closed but the manager or owner offered us a room with half pension for a high but still acceptable price. In any case this place was an ideal base for our planned collecting trips. Therefore we stayed.

For the rest of the afternoon we surveyed the area. About 14 kilometres to the Southeast on the road back to Erzurum we found a good locality at an elevation of 1950 meters. It was a small green valley full of flowers on the edge of a high plateau with open pine forest. The zygaenids were not common but we collected eight different species. Gerry and I did not find any *Adscita* and we wanted to leave this locality. We returned to the place where Konstantin was collecting and saw him very happy. Konstantin was very lucky on his birthday and had found one female of *Adscita italica storaiae*. He put it in the box with the leaf of *Rumex acetosa* and obtained eggs in half of an hour (later it became clear that these were the only eggs of this species that we obtained during the whole trip and Konstantin gave me half of them for rearing). What a success already on the first day of our stay here in the Northeast! We stayed until the sun disappeared behind the mountains. Back in the hotel we did our notes and cared for the eggs and larvae while it started to rain outside with flashes and heavy thunder. In the restaurant our table was already set and two elegant waiters in black suits were waiting for us. The meal was rich and excellent and the beer perfect. As always, Gerry and I shared a room. Konstantin had the other room. Like in Morocco years ago, we divided the price for the two rooms into three parts so that each of us had to pay the same price. This evening we did not talk much. The long trip, the field work in the fresh mountain air, the elevation, the good food and not only one beer gave us a deep sleep soon.

The next morning was marvellous. Bright sunshine and the glittering drops of the nightly rain on the pines were reflecting the light. When we arrived in the hall of the hotel a large table was set for us and we had a very rich and wonderful breakfast. Two pretty young girls served us tea and coffee and watched us with visible pleasure eating like forest workers. With new power we went back to our good locality from yesterday. There we found more *Zygaena* species and Gerry collected another female of *Adscita* (most probably also *A. italica stroraiae*). *Adscita* is really

rare here. We tried two more localities but only in the afternoon at a locality about 6 km to the West of the first locality did we find three males of *A. italica storaiae* and one male of *Jordanita subsolana*. But we also found a nice series of *Zygaena osterodensis* and larvae of *Z. carniolica* on *Onobrychis*. Moreover, we made lots of interesting observations.

At the last locality Gerry was looking for more *Zygaena carniolica* larvae. Konstantin and I met some wood workers that invited us to a cottage in the forest and insisted that we have a drink with them. They served us tea and wanted to know what we were doing here in this remote area. They really looked like robbers with their tools and beards. However, field workers have a fine instinct and it was clear for us that these people were trustworthy. We told them that we are looking for poisonous moths and this was a sensation for them. We showed them the animals and they were excited. Later an elderly man entered the cottage. He was treated with high respect. He turned out to be the local mullah. Slightly later 5 of his seven sons arrived (he had 9 children). After all of them knew that we were important foreign scientists that deal with poisonous moths we were allowed to go and proceed with our work. Gerry had already waited for us a while and was relieved to see us again.

This evening we arrived in our hotel late. It was already 21.00 when we had our dinner in company of the waiters in livré. Again it was excellent. This evening we decided that our stay here was finished. We wrote our notes and carefully packed our specimens, eggs and larvae for the trip before we went to bed.

The next day was Tuesday, 20 July 1999. After breakfast we started and went back on the main road along the picturesque Aras valley to Erzurum. The place was full of military. Initially we wanted to go southwards to Muş but we were stopped by the soldiers who informed us that this region was not allowed for tourists at that moment due to problems with PKK rebels. We had no choice and turned back to the main road that connects Erzurum with Erzincan. But we found a nice locality for collecting 7 km to the West of Aşkale in the hills shortly after noon. Gerry collected a good series of *Zygaena filipendulae* with confluent spots and commented immediately that this looked like an undescribed subspecies. He was right. In 2005 Gerry and Axel Hofmann described the confluent populations of eastern Anatolia

as *Z. filipendulae wiegelorum* and took a female from this locality as holotype that was collected by Gerry on this very day (20 July 1999).

Later in the afternoon we found another excellent collecting place 28 kilometres east of Zara in the northern edge of the province Sivas where the landscape is full of karstic sinkholes. Seven species of *Zygaena* and three males of *Jordanita subsolana* could be taken there. Surprisingly we did not find any locality for and not a single specimen of *Adscita* from the *statices*-group. To find the distributional borders between *A. statices drenowskii* and *A.italica storaiae* will be a hard job for the future and will take many years of field work.

After a long drive we reached Sivas after dawn and fortunately the nice keeper of the petrol station recommended to us the Köşk Oteli in the centre of the town that had a good price, was nice, clean and had very good food and cold beer. We ate and drank and discussed with pleasure our latest successes. Then we fell exhausted into our beds.

In the morning we were delighted to see that the larvae from the eggs of *Rhagades amasina* from Beynam had emerged after 9 days. The little larvae are very quick and Konstantin had a job to guard them on his bed. One day of 'drying' is needed before one can describe the chaetotaxy because the setae darken slowly and the pattern is only constant after a day of drying. We also cared for our specimens, eggs and larvae. Also our notes had to be done and this took substantial time. Only when all was finished did we have breakfast. Then we went southwards and visited again our already known nice localities above the old railway station of Taşlidere and at Büyükgümüşgün. In both localities we collected good series of interesting species.

About 30 km to the West of Gürün we stopped for a short while and I looked at Gerry's female of *Adscita* (*A. italica storaiae*?) that I had put into a box for obtaining eggs. The box was wet inside because of the heat in the car and the fresh *Rumex* leaves inside and I tried to let some fresh dry air into the box through a narrow slit between the box and the cover. The unbelievable happened! A sudden strong wind struck the box and although the opening was extremely narrow a vacuum was produced by the wind passing by that sucked the female out of the box. And

off it went. I was speechless and shocked. The box was not open but the precious specimen was gone. I was swearing and jumping but there was nothing to do. What a stupidity! My two friends were very kind to me and gave me consolidation. However, nothing could replace the gone female.

In the evening we reached Kayseri and took accommodation in the old town. Kayseri, the old Caesarea of the Romans, is a nice town and has an interesting historical centre. We found a hotel in the city and with a good meal and a few beers my bad mood improved quickly. From Kayseri it is easy to ascend the extinct volcano Erciyes Dağı (3916 m) by a good road that goes up to an elevation of 2200 meters. Two *Zygaena nevadensis* had been found somewhere here by French collectors a few years ago and Gerry especially was extremely keen in finding this species. We tried hard and found several potential localities on the next day and one really nice place at an elevation of 1900 m with very good vegetation but unfortunately no *Z. nevadensis*. The locality was situated in the North-East of the volcano between two valleys on the edge of a *Populus tremula* forest. At least we found five burnet and three forester species and all the specimens were fresh. The most interesting specimens were four males and four females of a very small *Adscita* that looked somehow like *A. geryon* but with more translucent hindwings. As the habitus was not at all that of *A. statices drenowskii* that could be expected here and the females laid eggs on *Rumex acetosella* later in captivity we had the slight hope of having found a very interesting isolated new species. Much to our disappointment we had to accept after dissection that it really was only a completely crazy tiny mountain population of *A. statices drenowskii*.

In the afternoon we stopped collecting on Erciyes and proceeded southwards towards the Toros Mountains. There, high up in the mountains, Bernard Mollet had found *Adscita capitalis*, a strange *Adscita* with strongly clubbed antennae. This was our next target. At 19.45 we reached Ereğli, a farming centre on the northern slopes of the mountains and took accommodation in Köşk Oteli in the centre. Here everything was cheap and the good farmer's food was rich - just as we liked it.

The next day was Friday, 23 July 1999. We found the road into the mountains thanks to Bernard's good description. The first part is the normal gravel road from Gümüşköy to Madenköy. On the pass at 2000 meters a fairly good piste leads west

to an abandoned hotel and further on up to an elevation of 2700 meters. Behind the former hotel at 2500 meters where the road winds in U-turns upwards we saw *Helianthemum canum* in flower, the larval host-plant of *A. capitalis*, and stopped for collecting. The weather was perfect. Gerry immediately found a very interesting small *Zygaena loti* with a flight like *Z. exulans* in the Alps, buzzing low over the ground. Konstantin and I found, much to our delight, *Adscita capitalis*. They were on the wing around noon and are very quick flyers that are not easy to catch. And they were rare. We all three worked the whole day (8 hours). The result was a small series of *Z. loti* and two males and 4 females of *A. capitalis*. We were happy but not satisfied as we also hoped to learn more about the biologies of these two species. Therefore we returned the next day. We went slightly higher and there was more *Helianthemum*. Again we worked for 8 hours. This time we found *A. capitalis* ovipositing on its larval host-plant *H. canum* and we also took some photos of living specimens. We collected a nice little series of that species at that locality. However, Gerry found less *Z. loti* than the previous day but he also found that there was no known larval host-plant of this species occurring here. Only a small *Ononis* was present. This species was later determined as *O. adenotricha* . Whether this is really the larval host-plant or not could not be confirmed so far but it is not completely impossible.

Suddenly a car stopped and a man with a net appeared. It was Mr Carbonell, a well-known French entomologist who was on the way home from Iran with his wife and son. Mr Carbonell had cooperated with Bernard Mollet for some years, but he did not know our names. When we said that we are zygaenologists, he answered that he knew only one zygeanologist, viz. Bernard Mollet. We had never met Mr Carbonell before. It was him who had collected *A. capitalis* first on this very locality and told this to Bernard. He was going up to the higher mountains because Bernard Mollet had found a strange population of *Zygaena formosa* there with a few specimens and Mr Carbonell wanted to receive more material.

The result of these two days of exciting field work was really exceptional in a retrospective view. On all three species of zygaenids that we collected there papers were published. In 2005 Axel Hofmann described the exceptional *Z. formosa* population from higher up on the Bolkar Mountains as *Z. formosa molleti*. Gerry and I pub-

lished a paper on the interesting small *Z. loti* that turned out to have been already described earlier as a distinct subspecies by Burgeff in 1914 as *Zygaena loti senilis*. This only could be confirmed by examination of Burgeff's types in Zürich where Gerry and I went together before our publication in 2003. Moreover, Konstantin, Bernard Mollet and I published a summary of all our observations and knowledge about *Adscita capitalis* in 2010, after the historical material of Drenowskii from Europe had been re-discovered in the Museum in Sofia.

On this evening in Turkey we were not aware of all of these interesting results. Nevertheless, we were happy and celebrated our good field work in the restaurant of the Köşk Hotel in Ereğli in the way we always did.

The next day, Sunday, 25 July 1999, was the last day for Konstantin in Turkey. In the morning we cared for our eggs and larvae and the collected specimens and wrote our notes. It was exactly 12.00 noon when we started for Ankara. It was an exceptionally hot day and the traffic was terrible. Thousands of trucks moved in a long line towards North in our direction and it was the same in the opposite direction and overtaking was almost impossible. However, after four hours we reached the Uluşan Hotel south of Gölbaşi and Gerry and I checked in. A final drink together and then we drove Konstantin to the airport.

Konstantin was sad that the trip was coming to an end and that he had to leave us that day. He really had enjoyed our company and the excellent field work. Vehemently he reminded us that we must publish all of our new discoveries and in general also all of our knowledge as soon as possible. We agreed to do our best but as all things need their time this was not possible within the next few years. Although a lot has been published in the meantime, some things still are waiting to be published even nowadays, almost 18 years later.

When we had dropped Konstantin at the airport and had said good bye Gerry and I returned to our hotel. It was such a nice warm evening. Again we had dinner on the terrace with the wonderful view on the illuminated swimming pool and garden. After two beers each, one for 'cooling down' the other for 'warming up', we ordered the speciality of the day 'Uluşan Surprise'. Of course, this went together with a good bottle of red wine and gave us joy and power. The coffee and two 'Yeni

Raki‘ (anis liquor) each came ‘from the house’. After all this we were in the best mood and had a really enjoyable relaxed evening and a wonderful sleep afterwards.

Next day we went to the airport early in the morning and separated after we had dropped the car at the car rental and excitedly summarized that this was really one of the best trips ever that we had together.

Wednesday, 3 May 2000 (again in Turkey with Gerry and Bernd Ploessl)
Arrested as terrorists

Trips with Bernd Ploessl, an eccentric roof maker in Innsbruck and well-known amateur collector, have always something special and Gerry liked this. The three of us had decided to do another trip to southern Turkey to discover more unknown biologies of green and red zygaenids. We found a small modest hotel on the sea shore of Cevlik near Antakya, close to the Syrian border. Bernd is also a night collector and set light traps. While he climbed up the hill behind the village Gerry and I had more than one relaxed beer in the small restaurant in front of our hotel together with the owner of the hotel and restaurant. These personal contacts are always interesting and informative. This one was especially important as we would learn soon. People are always interested when we tell them that we are studying ‘poisonous moths’. Moreover, someone from the Natural History Museum in London and two crazy guys from Austria are a rare combination in that area.

Behind Cevlik the terrain ascends steeply to the mountains and is densely covered with Mediterranean scrub. The access is difficult. However, when Bernd returned he claimed to have found an absolutely superb place for the trap, a completely free round concrete place at a clearing with a wonderful view over the vegetation. He had placed the trap just in the centre of the concrete circle and expected good catching. We went to sleep late.

Shortly after 6 ò clock in the morning Bernd raced in our room and just could say that he had been arrested by soldiers. They were immediately behind him, heavily armed, and they only had allowed him to come to the hotel because he did not understand a word and he had told them that ‘the boss’ is in the hotel. So they wanted

'the boss' and the 'boss' was me. I had to dress quickly and was also taken away. Much to our luck they completely had overlooked the quiet gentlemen Gerry who had not said a word, had not moved and just lay well covered by the white sheet in his bed. We were taken on gunpoint into the barracks of Cevlik and put into a guarded room, Bernd with the light trap in his hand. What had happened?

The nice concrete circle with the wonderful view turned out to be the top of the local water reservoir. Later in the night a farmer had come down from the mountains and saw a blue light on top of this water reservoir. When he came nearer he saw a black pot, a cable, a silvery switch and a black battery. No wonder that he thought a bomb had been placed by some terrorists to blow up this important infrastructure of Cevlik. Therefore he called the police and they called the army who had better specialists for such a situation. A colonel with 5 soldiers was ordered to encircle the place carefully and take care that nobody got hurt. Moreover, the local commandant of Cevlik had called the headquarters and asked for a special commando to come from the town of Antakya to disable the bomb. But what a surprise! In the morning suddenly a stranger came through the bushes and entered the place from a small sidewalk. Bernd heard a commando and the moving of the guns and just could manage to put the stub into the hole of the funnel of the light trap to prevent the specimens to escape and then lifted his hands as high up as he could. On gunpoint he was taken to the town and to the hotel. Now we were sitting in the barracks, heavily guarded by soldiers and in a not so easy situation. I told the soldiers who we are and that there were only moths in that pot but they only shook their heads and thought that this was a very stupid excuse. The commander and the colonel made a very satisfied face and probably imagined already the number of the stars on their uniforms growing.

In the meantime Gerry had got up. He went to the keeper of the hotel who was the brother of the mayor of Cevlik and both explained the situation to the mayor. All three together appeared in the barracks and the local commandant did of course know the mayor of the town. They confirmed that this was just a light trap and we had to open it and in fact the trap was full of moths and other insects. It is difficult to describe the faces of the soldiers and their commandants.

But the case was not over. We had to wait for the special commando from the head-

quarters. They came after an hour. An angry discussion could be heard and we had to explain everything again and switch on the light of the trap. The commander of Cevlik and the colonel who had lain a night in the bushes with his solders were 'not very amused' and had now not only us and this crazy situation but also the special commando to deal with. Without Gerry, the keeper and the mayor we certainly would have been put into jail at least for some time, just to punish us for this inconveniences. But finally the mayor convinced the soldiers that everything is good and that we were his personal guests and we swore to leave Cevlik on the same day and never ever put a light trap anywhere here in this area.

With a good meal in our restaurant and several cool beers we finally celebrated Gerry and our freedom. Even the specimens were still in the trap – and it was a good catch.

The last trip together with Gerry – Italy 1–16 July 2016
'As long as we live we do it!'

A collecting trip with an 85 year old friend may seem difficult in the eyes of non-entomologists. But trips with Gerry never were complicated. They were always relaxed, full of expectations, discussions, nice talks and immensely inspiring. This time we wanted to explore the Italian western Alps from Liguria, southern and western Piedmont northwards to Aosta and eastwards up to the Alpi Orobie (Bergamo Alps). Seen from our point of view as Zygaenologists this part of the Alps had been explored mainly in the earlier days of Entomology but little has been done in the last 80 years. In the 19th and early 20th century a flourishing industry was established in many of the Piedmont valleys of the Alps and new railways brought workers and goods but also the first tourists and collectors deep into the inner of the mountains. During the last 50-60 years tourists mainly passed these parts of the Alps on their way to the coast. Many industry complexes had to close and the railways were replaced by roads with individual and bus transport.

Gerry and I had worked a lot during the last years on the biogeography of the Southern Alps, the Apennines and the Balkans and one of our main interests was

Fig. 27. ***Enjoying the Primitivo at the Italian.*** **Gerhard Tarmann** (left) with Gerry and Axel Hofmann (Germany: Breisach, 17.i.2010). *Photo*: (A. Hofmann).

Fig. 28. ***Beautiful people.*** **Gerhard Tarmann** (right) with Feza Can (mid) and Gerry in Antakya (Turkey: Hatay, 6.v.2010). *Photo*: A. Hofmann.

the distribution of the melanistic morphs of *Zygaena filipendulae*. We already published a first overview in the *Entomologist's Gazette* 2013 about that problem in a paper called 'A zoogeographical and taxonomic analysis of *Zygaena filipendulae*(-Linnaeus, 1758) in the southern regions of the Alps, the Apennines and the northern Balkans'. Moreover, I wanted to search for possible hybrids between *Adscita statices* (Linnaeus, 1758) and *A. alpina* (Alberti, 1937). Both species have a vicariant area in the Alps but produce hybrids on localities where they come near to each other. Hybrids are known on the northern distributional border of *Adscita alpina* from Austria, northern Italy and Switzerland, but almost nothing is known from the southern contact area. Already in May this year 2016 I was lucky to find at least on hybrid population in the Ligurian Alps near Triora in the Argentina valley. Therefore we wanted to work in that area. Moreover, we wanted to test new sex attractants for Forester moths that were created by our friend Professor Konstantin A. Efetov in the Crimean Federal University in Simferopol. These substances have been shown to attract a large number of species all over the world and were most efficient for some of the so-called rare or rarely collected and observed species in the Alps like *Theresimima ampellophaga*, *Rhagades pruni*, *Adscita statices/alpina* and their hybrids, *Jordanita subsolana*, *J. notata* and others. And last but not least Gerry wanted to collect *Zygaena exulans* in the high mountains of the Alps, *Zygaena osterodesis saccarella* in the Ligurian Alps and receive eggs.

On 1 July we started in Innsbruck. At first we attended the 36th friendship meeting of the Alpe-Adria Entomologists in Fliess in Tirol that was organised this time by the National Park Kaunergrat in Tirol and our colleagues of the Tiroler Landesmuseen in Innsbruck. Gerry was the oldest participant and very heartily welcomed from the organisers and the colleagues. Due to the not so good weather the zygaenids were rare during these two days. However, we had a longer time of collecting before us and made our way to the South through the Inn valley of Tirol into the Engadin in Graubünden (Grison) in Switzerland and further via St. Moritz, the Maloja Pass to Lake Como. The few stops did not bring results as in that elevation and due to the bad weather during the last weeks it was a late year for burnets and foresters in this part of the Alps. Therefore we proceeded down into the Po plain, crossed it in southern direction and entered the Ligurian Alps on their northern

edge where the river Tanaro leaves the mountains. We took our base in a hotel just beside the motorway exit at Cevo, one of the formerly important industrial and agricultural centres of the region with a nice historical centre. From there it was easy to prospect the area during the next days.

Already on our first day of real collecting we had our first highlight. On a small side road near Bagnasco, only 10 km to the South of Cevo, we stopped under a chestnut tree and climbed a roadside meadow up to a small plateau. It was a misty morning and even some rain came out of the clouds. The meadows were wet and so were the bushes and trees. However, there was a lot of *Prunus spinosa*. I wanted to make a joke and announced to Gerry that now I am going to discover an unknown forester species for the Ligurian Alps, vic. *Rhagades pruni*. This species is unknown from the whole Apennine Peninsula and was considered to be extinct in Piedmont. The last specimens had been taken around 1906 near Torino. *Rh.pruni* has never been found since in Piedmont and Lombardia. The easternmost records in this part of the Alps are known from the Alpes Maritimes in France. 'I buy you a beer, if you get one!' was Gerry's answer. However, I fixed Konstantin's 'super' attractant 'EFETOV-S-S-2' with a club on my hat and went towards the *Prunus* bushes. I had not even done three steps when the first *Rhagades pruni* male hit my face. I was so shocked that I did not get it at first. But it returned and several more. Gerry was about 10 meters behind me when I told him that he already can start to count his money because I always keep my promises. What a delight for both of us! Gerry was always happy if something interesting was observed or collected. He immediately began to search for females in the bushes but the population density was low and we did not find females. But we found excellent burnets and amongst them a population of *Zygaena filipendulae* with almost entirely black morphs. What a good start into this rainy day!

It must be noted that the Italian roadsides can be tricky for someone who is not a young sportsman. Very often the edge of the road is fortified with a steep wall that is so high and steep that one cannot climb it at all or it is at least one meter high; above the wall there would be a steep slope with a grassy or bushy environment. For a man with 85, even if he was all his life an experienced field worker, this is a challenge. Gerry had developed a special technique for this trip and I saw it for

the first time this year. He did not even try to put his feet up on the upper edge of such walls. He put his entire body on the upper edge of the wall and rolled himself slowly into an upright position. He was remarkably quick when he did this. When he was standing upright he walked slowly upwards on the slope and collected. Downwards he did the same and only sometimes he needed my help. I truly admired him for this.

We worked the whole area and our results were excellent. In the evenings we returned to our hotel in Cevo where we had a good parking place, an excellent dinner and enough space to do our notes and care for our living material. Of course we had more than the one beer that Gerry owed me for *Rhagades pruni*, every evening we had inspiring discussions and a lot of ideas for the forthcoming days.

It was not easy to search for the distributional limits of and hybrids between *Adscita statices* and *A. alpina* in these mountains. The area is extremely densely forested and larger clearings with the larval host-plants *Rumex acetosa*, *R. acetosella* and *R. scutatus* are rare. It took us some time until we found the first and only male of an *A. alpina* south of Ponte di Nava in the Tanaro valley on the way to Nava and the Passo di Nava into the Aroscia valley. However, this discovery showed that the distribution of this species reaches southwards deep into the Ligurian Alps and was not restricted to the northern foothills of these mountains. Based on the knowledge of hybrids that I took this year at the end of May near Triora this was only logical but the proof was a challenge. Now it was crucial to see how far *Adscita statices* is intruding into Liguria coming from the West. We put all our hope into the sexual attractants that we had from Konstantin A. Efetov. His substance EFETOV-S-2 is very attractive for both species and the hybrids as we knew already. So far we knew only two males of *A. statices* that have been taken in the Ligurian Alps where the determination is confirmed by genitalia dissection. One locality (Colle del Garezzo) is high in the mountains and for this place it was still too early in the year but the second locality near the French border can be reached easily by car and the time was right and therefore we went there (Colla Melosa). We stayed in the mountain cottage on the pass. It was pretty inconvenient and remarkably expensive. The place was full of tourists and mountaineers with mountain bikes and with heavy equipment for trekking. We hesitated to run around on the meadows with our nets

between the people and felt pretty uneasy. Moreover, we were not able to find a single specimen, not even with the attractants.

The success came one day later. We had checked a number of excellent localities but without seing *Adscita statices*. Burnets were around in numbers and at least some interesting material could be obtained. On the way back to Triora coming from the South-West we took a shortcut over Monte Ceppo and used the narrow mountain road from Bajardo to Molini di Triora. Close to the top of the mountain we suddenly saw a mountain meadow and stopped where a small footpath went up on the left side of the road. It was already afternoon and the weather was going to change. However, the meadow was a dream. In short time we collected a good series of the rare *Adscita dujardini*, some *A. geryon* and with the attractant EFETOV-S-2 three males of *A. statices*. *A. statices* is larger than *A. alpina* and already in the field it was almost clear for me that this was not *A. alpina*. But it could not be excluded that these three males could be hybrids. Therefore we had to wait until we came home to Innsbruck and had the chance to dissect these specimens to see that they really were *A. statices* and not hybrids. No females were seen. But the task for the two days was fulfilled and we were more than happy.

Now it was time to target *Zygaena osterodensis saccarella*. This was one of Gerry's main wishes but also mine. In 1978 Balletto & Toso described an isolated population of this species in a remote part of the Ligurian Alps. The remarkable fact is that this population is complete encircled by populations of the closely related species *Zygaena romeo*. Both have a vicariant area and sympatry is not really known. However, in this case sympatry was suggested by Balletto & Toso. On Wednesday, 6 July 2016, we started early in the morning from our hotel in Cevo. It was a cloudless day. At first we stopped shortly at our good locality Bagnasco and took some more *Rhagades pruni* on the attractant EFETOV-S-S-2 and a few burnets. Then we followed the Tanaro river upwards until Ponte di Nava. From here on we looked along the road towards Upega on every flowering bush of *Vicia cracca*, one of the preferred nectaring pants of both *Z. romeo* and *Z. osterodensis*. But first we only found single specimens of *Z. lonicerae* on these bushes. At the place where the Tanarello river enters the Tanaro coming from the South there is a small bridge. We crossed this bridge and followed a fairly poor gravel road into the gorge of the Tanarello.

After a few kilometres there is a clearing and the road divides into two at another bridge that crosses the Tanarello. This locality is called Ponte Sciairant. We had to park the car here because the road became impossible for our Volkswagen camper in both directions at that crossing. It must have rained heavily during the last night and all was muddy and the wheel tracks were filled with water. Gerry was in his element. He jumped out of the car like a young boy and disappeared quickly deeper into the valley. I searched first on a meadow above the bridge that looked like a good habitat for Procridinae. But all my work up on the rocky meadow and also the search along the road, even with the sexual attractants on the head, did not bring a result. I found only *Z. loti*, *Z. transalpina* and *Z. lonicerae*, one specimen each. After an hour Gerry has not returned (we mainly agree for an hour before we meet again) and I began to worry. I followed him into the valley. The road was terrible, muddy and full of water. I walked very quickly. As I did not find him after 15 minutes of very quick walking I started to call him with loud voice. No answer. At the edge of the road the rock dropped deep into the gorge at several places and I really started to feel very uneasy. I returned to the car and hoped that he may have taken another way back or I had passed him on the road when he was somewhere in the bushes. But there was no Gerry around. Half an hour later he came. In his face was a very satisfied grin. Carefully he opened the box and there was it: a perfect female of a *Zygaena osterodensis*. He had taken it further in the valley on a *Cirsium* flower. Of course he then had searched the whole area and went further into the valley but this specimen was the only one he could get. However, we had one specimen. And this specimen definitely looked like *Z. osterodensis*, with elongate wings and three well-developed red streaks on the forewing upperside. Nevertheless, we still were suspicious. It also could have been an aberrant *Z. romeo*. A single specimen was simply not sufficient.

Therefore we left the Tanarello valley and drove back to the main road. We went on in the direction of Upega and stopped at several good looking localities but did not find another specimen of *Z. osterodensis* or *Z. romeo*. When the village of Upega came into sight we stopped again and checked the nice meadows on both sides of the road. And it was a good decision. On a local place in the meadow we found a population of *Z. romeo* that looked somehow strange. Several specimens had the

red streaks connected and looked like small *Z. osterodensis*. Could this be a hybrid population? We got together 8 specimens. But we still had the impression that these specimens belong to *Z. romeo* and not to *Z. osterodensis*. In the meantime it was mid-afternoon. Huge clouds arose on the sky and a nasty wind came up. However, we still had not reached Baletto & Toso's type-locality La Salse. This locality is on the other side of Passo della Coletta. On the pass the wind was strong and the sky was cloudy. Nevertheless we stopped as I had seen something green in the air. And really, it was a Procridinae that escaped from a *Cirsium eriophorum* plant. I put the attractant EFETOV-S-2 on my hat and really, 2 males of *Jordanita subsolana* came within the next minutes, but no more. The wind was too strong. However, we also collected a nice series of *Adscita geryon* around flowering *Helianthemum* and a very black male of *Z. filipendulae*.

In the meantime it was after 6 o'clock in the afternoon and the weather was cloudy and rain seemed to come in soon. The wind had not eased. We reached La Salse but did not find good habitats around the village. The road goes on from La Salse towards Valcona di Sotto and passes a large *Larix* forest. In the middle of this forest a burnet on the wing crossed the road just in front of us. I pushed the brake and we darted out of the car like mad. I got the specimen – and it was a perfect *Z. osterodensis saccarella*! Now Gerry turned and in the same moment he had another one that was sitting on a grass stem beside the road. Together we collected in one hour 13 specimens. Then we had to stop because it started to rain. There was no doubt that this was clearly *Z. osterodensis*. The specimens have long, elongate wings and are larger than *Z. romeo*. The red streaks in the forewings are not interrupted. What good luck! We both had not expected to find anything in this 'boring' *Larix* forest. What a good end to this day! Gerry was absolutely delighted.

The way back to Cevo was long and we arrived not until 9 ò clock in the evening, exhausted but happy. Gerry was hungry and thirsty, like always after a good day. We had a perfect meal in our hotel and the keeper called us in the meantime 'ragazzi' ('boys') and served us excellent food with good Piedmont wine followed by espresso and a grappa. After this we had another grappa and a 'limoncello', both 'on the house' and Gerry commented this with a broad grin: 'Russel would be disgusted' (Russel was Gerry's medical doctor whom he liked and respected very much).

Together we agreed: 'As long as we live we do it!' And this was meant for good field work, enjoyable company, good science, good food and wine and all what we like together.

After this success we left the Ligurian Alps and went on into the Cottian Alps further to the North. It was now Gerry's wish to collect *Zygaena exulans* in the high mountains. We knew a locality on Colle Valcavera and Colle Fauniera. The weather was more or less o.k. but it was mainly cloudy and misty. However, we found the species at 2300m just before we arrived at Colle Valcavera. The first males had just emerged. Also here the season was late. It was amazing how Gerry with is 85 years old managed to climb up and down the slopes in this elevation. When he was chasing a burnet he obviously forgot all about his age. Only when the soil was very rocky one could hear him sometimes slightly moaning when he slipped and hit an edge of a pointed rock. Shortly after Colle Fauniera we stopped at 'Peter's pool' as Gerry used to call the small lake beside the road where Peter Huemer had found hundreds of drowned *Zygaena exulans* in the water some years ago. In fact there were a few dead specimens in the water also today but by far not so many as in Peter's photos which he showed at the 13th International Symposium on Zygaenidae in Innsbruck in 2012.

Then the clouds hit us and we were covered in mist. It became suddenly dark. Visibility was below 10 meters. Very slowly we proceeded on the narrow mountain road down into the Valle di Marmora. The road was incredibly steep. Near Marmora-Arata we stopped again and collected a good number of burnets (*Z. loti, Z. romeo, Z. transalpina, Z. lonicerae*). Then we searched for accommodation. This was a challenge. We could not find a single place and had no other choice but to leave the valley and take a business hotel in Dronero already outside of the mountains. This hotel with the nice name 'Draconerium' was perfect and had a lovely garden where the dinner was served.

So far, our trip was really successful. We discussed what to do now. Gerry wanted to see some more nice places in the Alps in Piedmont. We therefore decided to visit the Valle di Susa. This valley is famous for its good biotopes and exceptional flora and fauna. I had passed the valley several times on the way to or from France but I never had collected there. Therefore Gerry's suggestion was just right for me and

we went there on the following day. In the morning it was raining heavily and this went on from Cuneo until Torino and even a short part into the Susa valley. However, the Susa valley is supposed to be a so-called 'inner Alpine dry valley'. And it was. The clouds disappeared and when we arrived at Oulx the sky was almost cloudless. But there was again no hotel in Oulx and also not in Salbertrand and the adjacent villages. It took us a long time until we finally got a room in a historical hotel at roadside (old road) in Chiomonte further down the valley.

Gerry liked this place from the first moment on. The room was very modest but the view from our window over the valley to the opposite mountains was wonderful. The keeper was a nice man and the food was perfect and much cheaper than elsewhere. This evening we had again a job to do our material and larvae and write up our notes. It was amazing with what diligence Gerry always did his notes. We both tried to write as much of what we had observed. This has turned out to be extremely helpful later when one cannot remember the details any more. With good notes all is much easier. This took almost two hours. On the little terrace we had a final beer, discussed the catches of the last days and then went to bed.

This evening Gerry had talked a lot about the book on the biology of *Zygaena* that he is going to publish together with Axel Hofmann. He explained about the joy that he felt when he tried to summarise all of his knowledge about the habits and the biology of a species and how different these observations can be in different parts of the distribution. I am also very much looking forward to see this book published. Gerry had some doubt that he will live long enough to see all three planned volumes published. But he was grateful and proud that Axel put so much energy into this project. At that moment nobody thought that Gerry's life would end so quickly and earlier than the publication of even the first volume of this great work.

Our first day in Susa was again a success. It was Friday, 8th July 2016. We decided to go towards Salbertrand, a place that was well known for exceptional Lepidoptera and also zygaenids. The road climbs a small pass on the way from Chiomonte to Salbertrand and just after this pass there is a road to the right that leads into the mountains. We took this road and stopped at the first U-turn because I had seen a burnet flying. It was a worn male of *Zygaena romeo*. But the locality was nice. Above the road there was a clearing with a lot of flowers and thistles and bushes of

Prunus spinosa. With the attractant EFETOV-S-S-2 on the hat we went to this clearing. What a joy it was to see that again one male of *Rhagades pruni* came to my hat. This was the second record in Piedmont for about 100 years. Praised be the sexual attractants of our friend Konstantin! But the population density must be extremely low. There was only one single male. We collected a few burnets and then went on. Higher up at Eclause we saw extremely nice biotopes. We parked the car and started our search. *Zygaena* was here in good numbers and in several species. The sexual attractants did not bring a result here. We decided to return to this locality on the next day. Then we tried to find collecting places higher up but without real success. So we returned to the main road and looked for localities in the main valley. But this was also not successful. Therefore we went back to our hotel and had a nice evening there.

Next day we were back and collected at first a good series of *Jordanita subsolana* on EFETOV-S-2 at the first locality and two *Rhagades pruni* on EFETOV-S-S-2. But the real surprise was the second locality. Also there we found *Rh. pruni* in numbers attracted by EFETOV-S-S-2 and also *Adscita mannii*. So we had now a third locality for *Rh. pruni* and good reference material from Piedmont. *Zygaena* was common in a number of species. Gerry worked the whole day and walked the steep slopes up and down like a young man. He was in his element.

In the afternoon we made an excursion into a side valley deeper in the mountains and collected at Pian del Colle, a place on a pass road into France. The place must have been excellent some years ago. However, now it was heavily grazed, a large golf course had been built and a lot of holiday homes for tourists. The collecting was difficult and poor.

We therefore decided to go northwards to Aosta the next day, a region where I had wanted to collect for a long time. We started early next day and reached the Aosta valley at midday. This valley is surrounded by extremely high mountains and very isolated. But it is densely populated and every square meter of soil is used for something. Again it was a challenge to find a hotel. Eventually we found one at Nus. The Hotel's name was Dujany. The kind keeper gave us a nice room and suggested that we could have half-pension for almost the same price than only bed and breakfast. We agreed and hoped for a good local Aosta meal in the evening. In the afternoon

we tried our luck around Nus. But collecting here is really difficult. We found a few localities and collected some material but nothing really exciting. It was the same next day although we went as well on the Grand Saint Bernhard pass and also on the Little Saint Bernhard. The landscape was breathtaking but the result extremely poor.

In the evening we discussed various things together and had another excellent meal. Gerry was not really hungry this day and complained that he was slightly tired. No wonder, we had made at least 4000 meters in elevation difference this day and this is something, not only for a man over 80. 'I think I am getting old', Gerry commented and finished the sentence with 'Klaus Sattler would now comment: "Gerry, you are old!" '. Thus was Gerry's sense of humour, always with a touch of self-irony.

The next day we left Aosta. It was raining heavily. We wanted to go to Bergamo and the Alpi Orobie (Bergamask Alps) to see the collections in the Natural History Museum and collect in a very undercollected area for zygaenids. We had already made arrangements about that visit in the museum. The colleagues in Bergamo are always extremely helpful and had organised accommodation for us in a nice hotel in the old city of Bergamo close to the museum. The guest room of the museum had been considered to be too inconvenient for Gerry as it is situated on top of an historical tower and there is no lift to reach the room.

We entered the Alpi Orobie at their south-western edge at Lecco and went up into the Val Sassina. The rain had stopped shortly but the clouds started already to accumulate again. Via Cassina Valsassina and Mogio we ascended the Passo Culmino San Pietro. On the way up we collected some burnets in a bend with meadows but got completely soaked on the way back to the car. Therefore we entered the little restaurant on the pass where a fire was burning and we could dry our wet cloths. The place is a real mountain cottage where everything is dedicated to hunting. Stuffed animals were placed on the walls and photos of hunters. A meal with meat from deer with mushrooms and a good beer cheered us up quickly. A few 'mountain men' observed us with interest. An espresso after the meal with a double portion of good grappa gave us the final 'heat' to proceed on our way. We searched the whole top of the range around the building as there was just a short break in the rains but it was all wet around and only within the denser parts of the forest

we could find a few specimens on flowers. This situation did not really improve the whole rest of the day and we decided to look for accommodation in one of the next villages. We had arranged our meeting in the museum only for the next day. In Vedeseta we stopped at the main place beside the church as we saw some people sitting in the foyer of a small hotel and restaurant. There was a free room and we took it. The rain had come back and it was raining all evening and night. The morning was little better and we had no choice but to go directly to the city of Bergamo without collecting.

In the Museo di Scienze Naturale Enrico Caffi, which is situated in an old palazzo in the old town of Bergamo on the hill, we met the director Dottore Marco Valle, and the manager of the Lepidoptera collection Dottora Melania Massaro. Both were extremely helpful and we could see the historical collection of Antonio Curó (1828–1906) who was an Italian engineer and entomologist that lived in Bergamo. It was great joy to screen through the very well preserved drawers and we found some extremely interesting historical specimens. Several *Rhagades pruni* from the surroundings of Torino are in the collection and, most interesting of all, two very well preserved specimens of *Zygaena osterodensis* from Valtellina on the northern edge of the Alpi Orobie around Morbegno in the province of Sondrio. The specimens may have been collected in the year 1869 when Curó was in that area. It was now clear where we would go the next day!

In the evening Marco Valle drove us to the hotel. Our car could stay parked in front of the museum with special permission of the town of Bergamo. Gerry was delighted and we were both in good spirit. Such old collections are really inspiring. In Valtellina, where Curó had taken *Z. osterodensis* nowadays only *Z. romeo* is found. What a sensation it would be if we rediscovered *Z. osterodensis* after almost 150 years. With an extremely good (and expensive) meal on the main piazza of Bergamo we dreamed of our possible discoveries and were looking forward to the next day. In the night there was a heavy storm that brought icy air from the North and even brought some of the old trees in the city down. The next morning was cold and still windy.

We met Melania after breakfast at San Pellegrino. She was going to join us for this day and drive in front of us with her small car to guide us to the best localities.

The weather was not really exciting. It was clear but very cold. We wanted to go to Passo San Marco first and look for *Zygaena exulans*. When we arrived there the temperature was very low and it was stormy. We had a marvellous view into the Swiss Alps in the North that were covered in new snow. Nothing could be found. Therefore we went down towards the Valtellina and the locality where Curó had found *Z. osterodensis*. But finding good habitats in this area nowadays is really difficult. Melania was perfectly organised. She was in permanent mobile phone contact with a botanist and we were guided to several nice localities near Morbegno which we surely had not found without Melania. Curó's old locality may be complete overbuilt by houses today or, if it was higher up, be dense forest. However, on the localities we found we got some interesting burnets, e.g. a nice series of six-spotted *Z. viciae*. Unfortunately there was no *Z. osterodensis*. If this species still exists here one needs time and patience to discover it. So we parted after a nice day from Melania who went back home. Gerry and I went on to see the last locality of *Z. cynarae waltharii* that I know and where I took a pair in 1998. It is in Val Corteno on the eastern slope of Passo Aprica that leads from Valtellina to the Val Camonica in Lombardia. Gerry was keen to see this almost extinct subspecies alive. On the eastern side of Passo Aprica near Corteno Golgi we found the nice hotel 'Parco' beside the road where we stayed for the night. The weather was still cloudy and windy and cold.

On the next day the weather had improved and it was a sunny day. With great expectations we went up to my good old localities where I had taken not only *Z. cynarae* but also *Adscita dujardini* and *Jordanita chloros*, both extremely rare species for this part of the Alps. But what a shock! When we arrived on the locality everything had changed dramatically. At first we were not even able to locate the place. The little footpath to a small chapel did not lead to a chapel but to a house where goats are reared. I checked the terrain and tried to remember. The place must be somehow lower where the chapel was. So we went back and at a small wall in a dense forest I had some kind of remembrance. We followed an abandoned and hardly visible path and really, after a while, we came to a clearing and on the edge of the clearing there was the old chapel. But the whole biotope was overgrown by bushes and trees and only small spots from the earlier steppe vegetation were still visible

around a few rocks. We did not find anything, no *Z. cynarae* and no *A. dujardini*. Therefore I suggested going to the locality of *Jordanita chloros* on the other side of a valley. On a really dangerous and extremely narrow concrete band that was the 'road' up to the place we made our way up. Fortunately no car came down while we were going up. On a little plateau and a small hill we found the same situation as before. Everything had changed. The locality is no more a steppe slope but overgrown with hundreds of high plants of *Galium aparine* and the iron Cross that is standing there is the only landmark that showed me that we really were on the right place. Completely frustrated we went slowly down. Gerry was genuinely terrified when I tried to keep the wheels of the car on the narrow concrete band while the slope dropped deep into the valley almost under our wheels. He desperately held himself onto the handles in the car and was very quiet. When we reached the asphalt road in the valley he commented shortly: 'Superb experienced mountain driving'. That was all. But one could see how relieved he was that we were back to civilisation.

After this we went again into the Bergamask Alps but now from the north-western edge through Passo Vivione. Also here collecting was difficult because one hardly could leave the road anywhere to stop and park. It was Friday, the 15 July 2016, and the pass road was full of mountain bikers and motorcyclists. This was dangerous and we had to drive extremely carefully and slowly. On the pass we had a good meal in the cottage there. The place was full of people as the weather was fine again. On the pass there was nothing to collect for us. The meadows are very marshy and there were no burnets or foresters around. On the way down on the other side we found several nice localities and collected a number of burnets, amongst them also *Zygaena romeo* (but not *Z. osterodensis*). But this was like it should be. *Z. osterodensis* may also still live here somewhere in little colonies like we saw it in Liguria with *Z. osterodensis saccarella*. But how to find them!

In the evening, we returned to our hotel and had a relaxing evening with lots of discussions how things can change so rapidly these times and species disappear. It was our last day before our return to Innsbruck and we had, of course, more than one nice beer together. It was really time to go home. The larvae on *Eryngium* were almost starved now as we had not found this plant anywhere within the last days. The last locality where we saw it was in the Valle di Susa. These larvae are essential

as I am rearing them from eggs obtained in June in the mountains of the Peloponnese (Taygetos, Parnon, Chelmos, Killini). This time Gerry did not bring larvae from Cornwall. He was therefore more relaxed about the host-plants, but I was worried.

On Saturday, 16 July 2016, we started early in the morning. I wanted to make a last present to Gerry and decided to take the longer road via Passo Aprica–Sondalo–Bormio and Umbrail Pass to Austria. The Umbrail Pass in the Swiss Alps is one of the localities where *Zygaena exulans* has always been found in masses. To go into the Alps from whichever direction on a Saturday in mid-July when the weather is fine is a hard job. We creeped slowly in an endless queue to Bormio and up to the Umbrail pass which we reached at at midday. Much to our disappointment there was not a single specimen of *Zygaena exulans*. The place was like ever, the host-plants *Loiseleuria procumbens* in good shape, but almost no Lepidoptera were around. We stopped again on the way down to Müstair and Taufers but also without success. Therefore, we stopped shortly in Taufers and collected an hour on the wonderful steppe slope at the beginning of the Avigna valley. There burnets and foresters were around in large numbers. However, this is a well-known locality and nothing new could be expected here.

In the afternoon, we stopped at a nice locality called Gurschl situated in the Inn valley at Roppen in Austria. This is the locality where I discovered the first *Zygaena minos* in Tirol in 1973. It is still a very good locality for burnets and I still take *Pimpinella saxifraga* here when I am rearing larvae of *Z. minos* as this locality is only 30 minutes by car away from my home in Völs near Innsbruck. Gerry collected a nice female of *Zygaena ephialtes peucedani* and was delighted. It was the last specimen in his life, collected at the end of a remarkable career as a scientist who had devoted his life to the research of zygaenids, especially their biology, ecology and genetics.

At that moment, we did not know this. We arrived happily at my home in late afternoon. My wife Monika had prepared a nice meal and we had good wine together. In the evening, we recalled our trip and drank Gerry's wonderful single malt that he had brought for me when he arrived. We agreed that I come to London again next March to the Verrall Supper like this year and that we then will have again a few nice days together. In the morning, the airport taxi came and we said 'Goodbye!', not knowing that this was the last time forever.

Fig. 29. ***The three co-authors on the Mendelian genetics*** of *Zygaena dorycnii araratica.* **John Turner** (left) with Axel Hofmann and Gerry (Scotland: Isle of Mull, 20.ix.2014). *Photo*: N. Ryrholm/A. Hofmann.

John R. G. Turner

Very old friends

Gerry was my oldest friend in entomology. He stands out in the memory for his courtesy, kindness, objectivity and—not all that common among scientists—a lack of competitiveness. It made him a pure delight as a collaborator.

By coincidence, in the last week I discovered a long-forgotten file of the first letters we exchanged, and was surprised to find that they were from my undergraduate days in 1961. He was compiling *Zygaena* distribution records, and I sent him some rather desultory records for Merseyside dating from my days as a juvenile bug-hunter. His letters were kind, and friendly, and informative, and he suggested I should visit him in Byfleet after I moved to Oxford.

In the vast and slightly intimidating Gothic cathedral that is the BM, he was always a welcoming presence when as a graduate student, visiting to work on the collections, I made my way up to his floor. It says a great deal about his modesty that it must have been years before he told me his main professional field was the microlepidoptera. The proposed visit to Byfleet materialised. Naïve and inexperienced in many things, it took me far longer than I expected to lumber all the way from Oxford in the Zoology Department's Land Rover. Lunch was unforgivably delayed, but Gerry gave no hint of being inconvenienced.

We then worked together in a slightly inconsequential way on *Zygaena* genetics. Gerry would hibernate my caterpillars for me. As I took my main research away to *Heliconius*, we inevitably lost touch somewhat over the years, and Gerry himself didn't really get going again with *Zygaena* genetics until the 1970s. We came together around the millennium, when he found time to write up his results and I had sufficiently retired to give him a hand with some very knotty problems. As always he was a delight to work with; this continued when I found myself collaborating with Gerry and Axel on *Zygaena dorycnii*. Along the way, before and after, he was always a fountain of information when holidays took my family and me to the Highlands, and I thought it would be nice to visit some *Zygaena*. As editor of the *Entomologist's Gazette*, he made submitting and revising a paper into a pleasurable experience.

An act of kindness which I shall always appreciate, was the invitation to be his guest at the Verrall Supper, which somehow I had missed out during a long career. As I said, my oldest friend in entomology. The memory remains, of a wonderfully kind, modest and knowledgeable man, who loved both *Zygaena* and his fellow humans.

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Fig. 30. ***In Ul'yanovsk*. Zoya Yefremova** with Gerry and Victor Ivan. Zolotuhin, (Vadim Zolothuin's father) (Russia: Middle Volga, vii.1996). *Photo*: C. M. Naumann, archive A. Hofmann.

Zoya Yefremova

Memories

Turkey

In 2001 I met Gerry during fieldwork in eastern Turkey. We went to a restaurant to have a common lunch. There were only a few people in the restaurant. Gerry ordered two glasses of beer and a chicken. Beer was brought immediately. In a few minutes a waiter came and started explaining something to Gerry. Gerry said that the waiter asked for some help. They took our car and left. I stayed at the table alone. Time passed slowly I was drinking my glass of beer. In an hour I had nothing to do but to drink the second glass as it was rather hot. When Gerry finally appeared he said that they had gone to the neighboring village to catch a chicken. It took the waiter an hour to find the suitable one and half an hour to chase and catch

it. Then Gerry noticed the empty glasses and asked where his beer was. I answered that I had drunk it. Gerry was annoyed as he was tired and hot after chicken hunting and in the end he got an empty glass.

Ulyanovsk

Once we were on a fieldwork in Ulyanovsk region. We were brought to a village and a driver promised to pick us up at the same place on the road. In the forest we collected lots of moths and parasitic wasps. When we got out of the forest we found out that it was another village. I knocked on the door of the nearest house to ask the way. An old woman came out and when she started explaining me way she suddenly spotted Gerry standing nearby. She broke off short and headed for him. To my great surprise she explained that a man is always smarter at finding directions than a woman no matter what language he speaks.

London

Very often when I visited London to work in the Museum of Natural History I met Gerry. We occasionally went for a walk through the suburbs of London to the wonderful hills covered with woodland. Once on such a trip we saw a man in the distance. It was hard to make out what he was doing there. Gerry immediately made a suggestion that the man was an entomologist and moreover he knew Gerry. It was strange for me to hear that. When we came up to him Gerry started talking to him. The man really turned out to be a field naturalist and lover of butterflies. Gerry also asked him if he had ever published any articles in the *Entomologist's Gazette.* The man answered in the affirmative. Gerry said with pleasure that he was the editor of that journal and introduced himself. The man was embarrassed and said he did not expect to meet Dr Tremewan there. Having said good-bye we continued our way. Gerry said 'What did I tell you, he knew me!'

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Hossein Rajaei

The Lepidoptera collection of WALTER GERALD TREMEWAN is now in State Museum of Natural History, Stuttgart, Germany (SMNS)

An agreement between Dr Walter Gerald Tremewan and the former curator of Lepidoptera collection at SMNS (Dr Christoph Häuser) was signed on December 15th 2000. Under this agreement, the State Museum of Natural History purchased the Tremewan collection including prepared specimens and the cocoon collection with all drawers, larvae preserved in alcohol, seller's diaries (field notes and breeding notes) and relevant entomology books, letters and slides.

According to this agreement, the collection remained in the possession of the seller under a long-term loan and he would care for the collection as long as he was able to work on the material and expand the collection.

One month after the death of Gerald Tremewan, Daniel Bartsch and I found our way to Cornwall. We made an appointment with Mr. Malcom Tremewan (the son of Gerald) on 06.xii.2016. With the great help of Malcom and his life-partner, Sally Butler, it took half a day to pack the whole collection and related accessories (slides, literature etc.) (Figs. 25–30). The collection arrived at its final destination in Stuttgart on 07.xii.2016.

We decided to keep the Tremewan collection separately and not to integrate it into the main collection. This will allow successive researchers to following the systematic arrangement of this collection. Gerald Tremewan had kept lots of material in wooden boxes or other smaller boxes (over 80 boxes in total). Although it was obvious that he worked until the last day of his life, it was clear that he couldn't manage to incorporate all those boxes into his main collection. This was done by Daniel Bartsch over two full weeks after arriving the collection to Stuttgart. After it, the whole material counted.

At the moment all zygaenid material (34,863 specimens) of the Tremewan collection are sorted in 231 boxes (Figs 31, 32); the pupae and/or cocoons of 80 species can be found in 14 boxes (Fig. 33). Additionally, we archived around 2360 scientific

Fig. 31. ***After fieldwork in southern Iran.*** **Hossein Rajayi** (left) beside Jörg Meineke, Axel Hofmann, Gerry (standing) and Mustafah Salehi, v.2004. Photo: (A. Hofmann).

slides that Gerald had made during his many expeditions. Moreover, the collection includes 154 alcohol tubes comprising larvae and pupae. He also wrote a lot during his scientific trips and about the breeding experiences for the hybrid studies. Those entire diaries, scientific notes and breeding reports have been written in 21 notebooks, which are also archived in SMNS (Fig. 34). He also collected a small collection of the host-plants, pressed and mounted them on white sheets (57 sheets) (Fig. 35). This small herbaria collection is integrated into the herbarium of SMNS. In total over 5,000 letters of Gerald Tremewan with other scientists are archived in SMNS (Fig. 36).

The quantity of the genera, species, subspecies and specimens are summarized in Table 1. Additionally, a list of taxa with type-series are presented in Table 2. The photos of wings and labels of holotype specimens are depicted (Figs 37–**54**).


32


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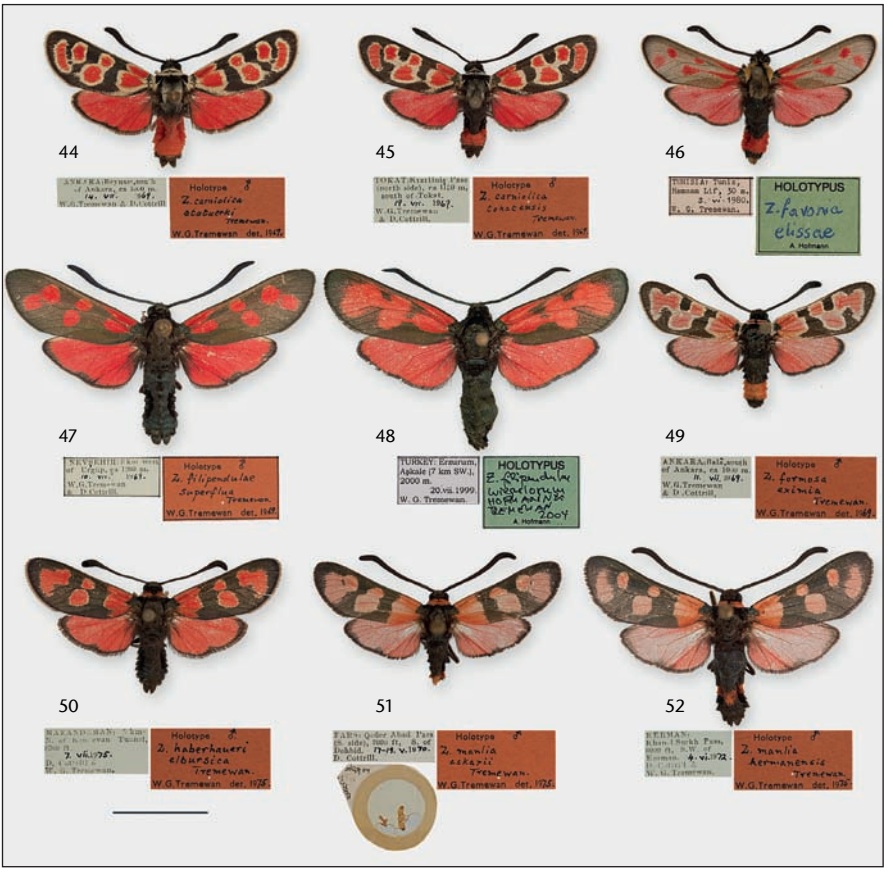
Figs 38–43. ***Collection Gerald W. Tremewan in Stuttgart.*** 38, Tremewan's Boxes are now incorporated in the collection as a separate collection; 39, All specimens of the Tremewan collection are in top condition; 40, Pupae and/or cocoons of 80 species are in the Tremewan collection; 41, In total there are 21 notebooks containing the scientific notes of Gerald Tremewan; 42, A small collection of plants dried by Gerald are now in Herb arium of SMNS; 43, A letter, written by Gerald Tremewan, and over 5000 other letters are archived in SMNS.

Figs 32–37. ***Cornwall***. 32, The house of Gerald W. Tremewan; 33, Workplace of Gerald until his last day of entomology work. Some material was still on the preparation boards; 34, A cabinet with the boxes at the collection room of Gerald Tremewan; 35, Malcom Tremewan and Sally Butler at the entrance of the collection room; 36, Hossein Rajaei carrying the boxes to the transporter; 37, Daniel Bartsch packing the boxes in the transporter.

Table. 1. List of taxa with the quantity of specimen, species, subspecies and type series accordingly. (Abbreviations: HT, Holotype; PT, Paratype).

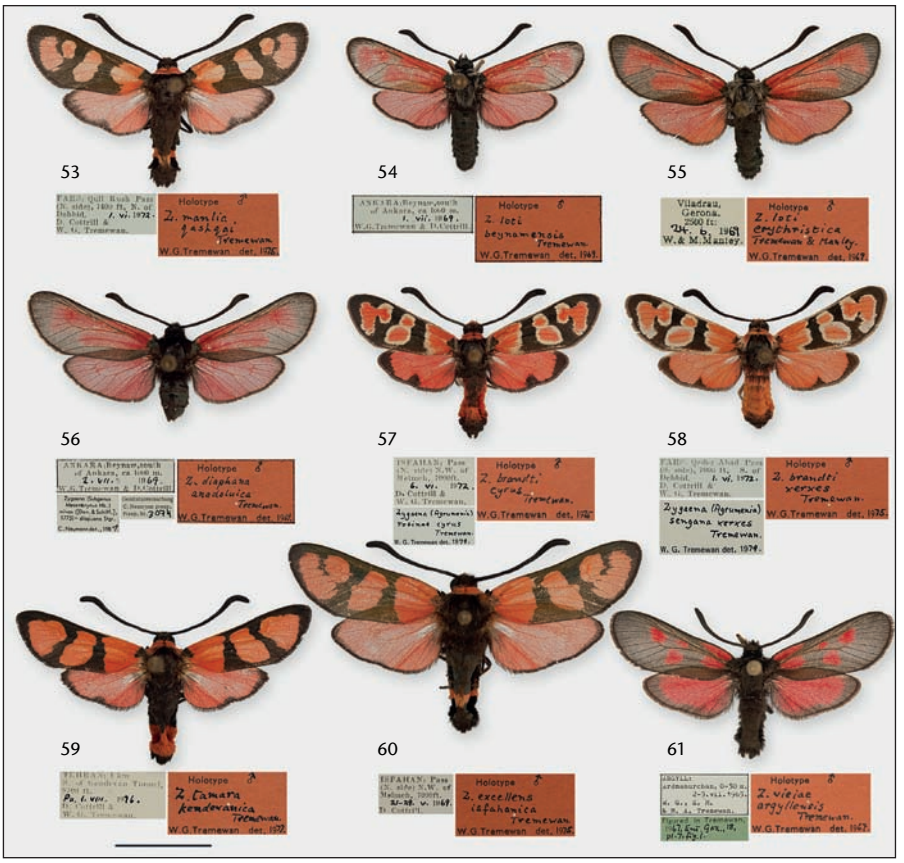
List of Taxa	Number of specimens	Number of species	Number of Subspecies	Type
Adscita *algirica*; *A. geryon*; *A. bolivari*; *A. globulariae*; *A. manni*; *A. mauretanica*; *A. notata*; *A. reisseri*; *A. hispanica*; *A. statices*	549	10	-	
Neurosymploca *atomaria*	2	1	-	
Praezygaena *caschmirensis*	92	1	-	
Reissita *simonyi*	34	1	-	
Rhagades *amasina*; *R. pruni*	53	2	-	
Zutulba *namaqua*	2	1	-	
Zygaena *afghana*; *Z. aisha*; *Z. algira*; *Z. alluaudi*; *Z. alpherakyi*; *Z. angelicae*; *Z. anthyllidis*; *Z. araxis* (ssp. *araxis*; ssp. *kurdi*); *Z. armena*; *Z. aurata*; *Z. beatrix*; *Z. brizae* (ssp. *brizae*; ssp. *bernhaueri*; ssp. *tbilisica*; ssp. *ziganacola*); *Z. cacuminum*; *Z. cambysa*; *Z. carniolica* (ssp. *carniolica*; ssp. *amasina*; ssp. *apuliana*; ssp. *atatuerki*; ssp. *kappadokiae*; ssp. *tokatensis*); *Z. centaureae*; *Z. chirazica*; *Z. cocandica*; *Z. contaminei*; *Z. corsica*; *Z. cuvieri*; *Z. cynarae*; *Z. dorycnii*; *Z. ecki*; *Z. ephialtes*; *Z. erythrus* (ssp. *erythrus*; ssp. *actae*); *Z. escalerai*; *Z. esseni*; *Z. excelsa* (ssp. *rosei*); *Z. exulans* (ssp. *exulans*; ssp. *apfelbecki*); *Z. fausta*; *Z. favonia* (ssp. *favonia*; ssp. *elissae*); *Z. felix* (ssp. *felix*; ssp. *barraquei*); *Z. filipendulae* (ssp. *filipendulae*; ssp. *danielihonoris*; ssp. *schuberti*; ssp. *superflua*; ssp. *wiegelorum*); *Z. formosa* (ssp. *formosa*; ssp. *eximia*; ssp. *hesselbarthi*; ssp. *molleti*); *Z. fraxini* (ssp. *fraxini*; ssp. *slabyiana*); *Z. fredi* (ssp. *fredi*; ssp. *syntopica*); *Z. fusca*; *Z. ginnerreissi*; *Z. graslini*; *Z. haberhaueri* (ssp. *haberhaueri*; ssp. *elbursica*; ssp. *kobachidzei*); *Z. haematina* (ssp. *haematina*; ssp. *aurora*; ssp. *firuzica*; ssp. *kordestani*; ssp. *lorestanensis*); *Z. hilaris* (ssp. *hilaris*; ssp. *nicaeica*); *Z. hindukuschi* (ssp. *cishindukuschi*) *Z. huguenini*; *Z. ignifera*; *Z. johannae* (ssp. *johannae*; ssp. *charlottae*; ssp. *turbeti*); *Z. kermanensis* (ssp. *kermanensis*; ssp. *askarii*; ssp. *qashqai*); *Z. laeta*; *Z. lavandulae* (ssp. *lavandulae*; ssp. *altolavandulae*; ssp. *huescae*); *Z. lonicerae* (ssp. *lonicerae*; ssp. *insularis*; ssp. *jocelynae*; ssp. *major*); *Z. loti* (ssp. *loti*; ssp. *beynamensis*; ssp. *erythristrica*; ssp. *soriacola*); *Z. lydia*; *Z. loyselis*; *Z. manlia*; *Z. marcuna*; *Z. maroccana* (ssp. *maroccana*; ssp. *saounica*); *Z. maroccana* (ssp. *irhris*); *Z. minos* (ssp. *minos*; ssp. *alanyca*; ssp. *anadoluica*; ssp. *diaphana*; ssp. *tavanica*); *Z. mirzayansi*; *Z. nevadensis*; *Z. niphona*; *Z. nocturna*; *Z. occitanica* (ssp. *occitanica*; ssp. *burgosensis*; ssp. *huescacola*; ssp. *tourrettica*); *Z. olivieri*; *Z. orana* (ssp. *orana*; ssp. *sulcitana*); *Z. osterodensis* (ssp. *osterodensis*; ssp. *asiatica*; ssp. *bitlisica*; ssp. *caucasi*; ssp. *ikizderica*; ssp. *kenteina*; ssp. *saratovensis*); *Z. oxytropis*; *Z. persephone*; *Z. peschmerga*; *Z. problematica*; *Z. pseudorubicundus*; *Z. punctum* (ssp. *punctum*; ssp. *kalavrytica*); *Z. purpuralis*; *Z. rhadamantus* (ssp. *rhadamantus*; ssp. *isabelae*; ssp. *caroniana*); *Z. romeo*; *Z. rosinae* (ssp. *rosinae*; ssp. *cyrus*); *Z. rubicundus*; *Z. rubricollis* (ssp. *rubricollis*; ssp. *flavicola*); *Z. saadii*; *Z. sarpedon* (ssp. *sarpedon*; ssp. *andorica*); *Z. sedi*; *Z. seitzi*; *Z. sengana*; (ssp. *sengana*; ssp. *xerxes*); *Z. separata*; *Z.*	33,930	99	125	18 HT; 744 PT

sogdiana; (ssp. *sogdiana*; ssp. *flaugeri*; ssp. *separate*; ssp. *storaiae*; ssp. *vernyjensis*; ssp. *wazhmakai*); *Z. speciosa* (ssp. *speciosa*; ssp. *osseii*); *Z. tamara* (ssp. *tamara*; ssp. *fahima*; ssp. *kendevanica*; ssp. *kerendica*; ssp. *mahabadica*; ssp. *placida*; ssp. *zuleiqa*); *Z. theryi*; *Z. transalpina* (ssp. *transalpina*; ssp. *centripyrenaea*; ssp. *marujae*); *Z. transpamirina*; *Z. tremewani*; *Z. trifolii* (ssp. *trifolii*; ssp. *muspratti*; ssp. *pajinii*); *Z. truchmena*; *Z. turkmenica* (ssp. *turkmenica*; ssp. *isfahanica*; ssp. *pjotri*); *Z. viciae* (ssp. *viciae*; ssp. *argyllensis*; ssp. *rassei*); *Z. wyatti*; *Z. youngi*; *Z. zuleima*.				
Zygaenoproctis *brandti*; *Z. chalcochlora*; *Z. duskei*; *Z. persepolis*; *Z. taftana*.	58	5	-	
Total	34,863	120	125	19 HT; 744 PT



Figs 44–52. ***Holotype specimens in the Tremewan collection (I).*** 44, *Z. carniolica atatuerki*; 45, *Z. carniolica tokatensis*; 46, *Z. favonia elissae*; 47, *Z. filipendulae superflua*; 48, *Z. filipendulae wiegelorum*; 49, *Z. formosa eximia*; 50, *Z. haberhaueri elbursica*; 51, *Z. kermanensis askarii*; 52, *Z. kermanensis kermanensis.* Scale-bar, 1 cm.

Taxa	Type series	Taxa	Type series
Z. algira f. *flava*	1 PT	*Z. loti beynamensis*	HT, 7 PT
Z. araxis kurdi	4 PT	*Z. loti erythristrica*	HT, 32 PT
Z. brizae bernhaueri	3 PT	*Z. loti soriacola*	6 PT
Z. brizae tibilisia	4 PT	*Z. maroccana saounica*	7 PT
Z. brizae ziganacola	1 PT	*Z. maroccana irhris*	2 PT
Z. carniolica apuliana	5 PT	*Z. minos alanyca*	5 PT
Z. carniolica atatuerki	HT, 72 PT	*Z. minos anadoluica*	HT, 24 PT
Z. carniolica kappadokiae	6 PT	*Z. minos tavanica*	2 PT
Z. carniolica tokatensis	HT, 14 PT	*Z. occitanica burgosensis*	3 PT
Z. cuvieri	3 PT	*Z. occitanica burgosensis* f. *lutea*	9 PT
Z. erythrus actae	3 PT	*Z. occitanica huescacola*	6 PT
Z. excelsa rosei	7 PT	*Z. occitanica tourrettica*	5 PT
Z. exulans apfelbecki	1 PT	*Z. occitanica tourrettica* ab. *octonotata*	1 PT
Z. fausta	13 PT	*Z. orana sulcitana*	6 PT
Z. favonia elissae	HT	*Z. osterodensis bitlisica*	1 PT
Z. felix barraquei	1 PT	*Z. osterodensis ikizderica*	1 PT
Z. filipendulae danielihonoris	3 PT	*Z. peschmerga*	6 PT
Z. filipendulae schuberti	2 PT	*Z. problematica*	1 PT
Z. filipendulae superflua	HT, 34 PT	*Z. punctum kalavrytica*	1 PT
Z. filipendulae wiegelorum	HT	*Z. rhadamanthus caroniana*	1 PT
Z. formosa eximia	HT, 14 PT	*Z. rhadamanthus isabelae*	4 PT
Z. formosa hesselbarthi	1 PT	*Z. rosinae cyrus*	HT, 21 PT
Z. formosa molleti	1 PT	*Z. rubricollis flavicola*	24 PT
Z. fraxini slabyiana	2 PT	*Z. sarpedon andorica*	2 PT
Z. fredi syntopica	2 PT	*Z. sengana xerxes*	HT, 21 PT
Z. haberhaueri elbursica	HT, 38 PT	*Z. sogdiana flaugeri*	1 PT
Z. haberhaueri kobachidzei	10 PT	*Z. sogdiana ssp.*	8 PT
Z. haematina aurora	2 PT	*Z. sogdiana storaiae*	1 PT
Z. haematina firuzica	39 PT	*Z. sogdiana vernyjensis*	2 PT
Z. haematina lorestanensis	2 PT	*Z. sogdiana wazhmakai*	4 PT
Z. hilaris	2 PT	*Z. speciosa osseii*	2 PT
Z. hilaris nicaeica	2 PT	*Z. tamara fahima*	1 PT
Z. hindukuschi cishindukuschi	23 PT	*Z. tamara kendevanica*	HT, 35 PT
Z. johannae charlottae	5 PT	*Z. tamara zuleiqa*	6 PT
Z. johannae turbeti	1 PT	*Z. transalpina marujae*	14 PT
Z. kermanensis askarii	HT	*Z. tremewani*	15 PT
Z. kermanensis kermanensis	HT, 11 PT	*Z. trifolii muspratti*	8 PT
Z. kermanensis qashqai	HT, 40 PT	*Z. trifolii pajinii*	1 PT
Z. lavandulae altolavandulae	2 PT	*Z. turkmenica isfahanica*	HT, 37 PT
Z. lavandulae huescae	12 PT	*Z. turkmenica pjotri*	7 PT
Z. lonicerae jocelynae	4 PT	*Z. viciae argyllensis*	HT, 28 PT
		Z. viciae rassei	1 PT



Figs 53–61. ***Holotype specimens in the Tremewan collection (II).*** 53, *Z. kermanensis qashqai*; 54, *Z. loti beynamensis*; 55, *Z. loti erythristrica*; 56, *Z. minos anadoluica*; 57, *Z. rosinae cyrus*; 58, *Z. rosinae xerxes*; 59, *Z. tamara kendevanica*; 60, *Z. turkmenica isfahanica*; 61, *Z. viciae argyllensis*. Scale-bar, 1 cm.

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Table. 2. List of taxa (disregarding the actual taxonomy) with type series in the collection of Tremewan (numbers shows the quantity of paratypes, Abbreviations: HT, Holotype; PT, Paratype).

Figs 62. ***Gerry observing a copula*** of *Zygaena pseudorubicundus* in its azonal, periodically humid habitat near Nahavand (Iran: Lorestan, Nahavand S., Cheshmeh Gama Siab vic., 1,900 m, 29.v.2013). *Photo*: A. Hofmann.

W. G. Tremewan

Have Net, Will Travel:

Reminiscences of an old entomologist

[written in parts between 1995 and 2006]

Preamble

My friends and especially my immediate family have persuaded me to place on record the adventures that I have experienced while on entomological fieldwork in Britain and abroad. Under protest I finally commenced writing and this book, much of which is anecdotal, is the results of my labour and in many ways an autobiography.

My lifelong interest in entomology, indeed all natural history, began during my early childhood, encouraged always by my parents and especially by my mother. I can still remember rearing moths, albeit rather crudely, when I was only six years old. I had been keeping some caterpillars in an old and probably smelly toffee tin and on inspecting them after one of many periods of neglect I found that they had disappeared and had been replaced by what appeared to be lifeless, shiny, mahogany-brown objects. With great concern I rushed to my mother who explained that 'the caterpillars had become chrysalides' and that these would in due course 'change into moths'; indeed, some examples of a species of Noctuid moth did eventually emerge. I can also remember quite clearly my first encounter with the Clouded Yellow butterfly (*Colias croceus*) in the field next to our cottage at the edge of the hamlet of Wheal Rose, a nostalgic memory that will never fade! I was nine or ten years old at the time and had no butterfly net but, thinking that such an exotic-looking species must be rare, I managed to capture two examples by knocking them down with a flat stick. These specimens were pinned (through the abdomen, as far as I can remember!) with large household pins and rather crudely set; moreover, they constituted the very beginning of my collection of Lepidoptera although unfortunately they are no longer extant. The Clouded Yellow is a beau-

tiful butterfly that has dark yellow wings broadly bordered with dark chocolate brown and is an intermittent immigrant to our shores from the Mediterranean region, being completely absent in some years, whilst in others it can be common or even abundant. It is rather fitting that the St Austell Brewery in Cornwall has named an excellent continental beer after this butterfly; the female, unlike the male, is recognised by having yellow spots in the dark brown borders of the wings and is depicted on the label of the bottle. The text beside the figure is worth quoting verbatim and obviously refers simultaneously to the butterfly and the beer:

'Originated in Europe and an uncommon yet much appreciated migrant to Britain'.

I still get a feeling of exhilaration whenever I observe the Clouded Yellow butterfly in Cornwall, even though I see it regularly during my travels abroad.

Although my early interests were all aspects of natural history, I began to concentrate on insects at the age of ten or eleven, with special emphasis on butterflies and moths, an order known as Lepidoptera with which I was later to become involved as a professional entomologist until my retirement from the Natural History Museum (formerly the British Museum (Natural History)) in London early in 1991. For over 50 years I have specialised in a group of mainly day-flying moths belonging to the family Zygaenidae and known in the vernacular as Burnets and Foresters.

While the primary aim of this book is to entertain the reader with stories, amusing or otherwise, of the many adventures that I have encountered during entomological fieldwork abroad, it was felt that a certain amount of autobiographical detail should also be put on record. Consequently, the early pages of this book are, for me, a trip down memory lane and it is to be hoped that I shall be forgiven for this indulgence. While I have enjoyed writing these memoirs, there have been moments when I have also been saddened to realise that much of what I recall no longer exists. This applies especially to so many habitats that have been completely destroyed under the guise of progress or, if they still exist, they are so changed that much of the special fauna and flora they once contained has gone forever. I count myself lucky and indeed privileged that I was able to observe natural history in Cornwall as it was in the 1940s and 1950s.

The English vernacular names of plants, animals, birds and insects are used

throughout the text of this work. However, it has been thought desirable to insert the scientific names in parentheses after the vernacular names, although their authors and dates have been omitted. The names, vernacular or otherwise, of plants follow the *Flora of Cornwall* (French, Murphy & Atkinson, 1999), those of animals and birds are taken from *A Field Guide to the Mammals of Britain and Europe* (Brink, 1967) and *The Birds of Britain and Europe* (Heinzel, Fitter & Parslow, 1984), respectively. Regarding the names of insects, recourse has been made to *Insects of Britain and northern Europe* (Chinery, 1993), whenever necessary. *Freshwater Life* (Clegg, 1974) has also been a useful source of information for animal life associated with fresh water.

A brief autobiography

The forename Tremewan is of Celtic origin. The word '*tre*', pronounced with a long 'e', is from Old Cornish and means 'clan' or 'tribe' and in more recent Cornish can also mean 'dwelling-place', 'home', 'homestead' or 'farm' or even 'village' (Nance, 2003 (1): 168). Literally translated, the name Tremewan means 'the tribe of Mewan' or 'homestead of Mewan'. There was a St Mewan who, it is said, was a Celtic saint who founded a monastery in Brittany (now St Meen); he is believed to have been an aristocrat of south-east Wales and related to St Samson. In Cornwall, the parish of St Mewan is situated in the deanery and Hundred of Powder and is bounded on the north and east by St Austell, on the south by St Ewe and on the west by St Stephen-in-Brannel.

I was born on 2 January 1931 in a rented, two-roomed terraced cottage in Shortcross Road, Mt Hawke, a village located in the parish of St Agnes and quite near to the Atlantic coast north-west of Truro, Cornwall. Two or three years later, my parents moved to a four-roomed cottage in Ropewalk, a lane also situated at Mt Hawke, where my sister (Margaret Jean) was born five years after me.

My father, Alfred Richard (1901–1965), was a lorry driver for most of his working life, but as far as I can remember he never took a driving test, as was the custom in those days. As a teenager he learned to drive at the age of 17 while working above ground at Wheal Sally, a lead mine located on the coastal cliffs to the south of Porthtowan. Remnants of the mine, such as derelict buildings etc., are still to be

found quite near to the coastal footpath and some of the underground workings can be seen in the cliff face from the beach below, since these have been exposed following the fall of some of the cliffs owing to erosion. While my father was mildly interested in natural history, his main hobby was breeding poultry and homing pigeons for exhibition purposes and during the course of his life he was awarded many silver cups and certificates. During the latter part of his life he kept and bred only homing pigeons (a domesticated variety of the Rock Dove, *Columba livia*), some of which he 'raced' from the north of England to Cornwall and at times even from Scotland. The stock that he built up over the years must have consisted of a superb strain because his pigeons almost invariably came in first, much to the envy of the other members of the pigeon club that was based in Redruth. This was in spite of the fact that five minutes were added to the recorded flying time of each of my father's pigeons, a handicap that was imposed by the secretary of the club because Wheal Rose was situated along the flight path two miles north-east of Redruth, the other birds that were based in the latter therefore having to fly further. However, bearing in mind that homing pigeons can travel at an average of 60 m.p.h. (the recorded times of some of my father's champion birds often revealed this), an allowance of five minutes for the over-fly was far too great and certainly unfair, yet his pigeons still recorded faster times than those belonging to the other members of the club.

My paternal grandfather Alfred Tremewan (1863–1907) was born at Wheal Rock, St Agnes, and was a lay Methodist preacher whenever he was at home in Cornwall. He was a miner for most of his life and worked in the tin mines of Cornwall and in gold mines in Montana (U.S.A.) and Johannesburg (South Africa). He lived with his wife Bessie (née Henwood) in a large four-bed-roomed house called 'Lambourne' that is situated on the hillside above the hamlet of Manor Parsley and to which was attached a few acres of farmland; in other words it was a smallholding. My grandfather Alfred died of pulmonary phthisis on 25 January 1907 at the age of 42, no doubt exacerbated by the conditions then prevailing in the mines. On 16 April, probate was read at Bodmin, Alfred leaving his wife Bessie the sum of £180.3s.9d., the house Lambourne and the few acres of farmland, a not untidy estate for the

beginning of the XIX century[18]. My father was only six years old at the time of Alfred's untimely death and was brought up by his mother and sister (Susan Henwood Tremewan), the latter being twelve years his senior. It would seem that my father was quite a tearaway when he was a boy, according to some of the tales that were related to me by him and by others when I was young, perhaps because his sister and mother spoiled him or he lacked the control of a father. Apparently he played truant from the school at Mt Hawke quite regularly and when he did attend it seems that he was always getting into trouble; as a consequence, he often received the cane as punishment, not that it seemed to have had much effect on his behaviour. He once told me that he always carried a strand of white hair from the mane or tail of a horse and placed this across the palm of his hand just before he was about to be caned; the consequence of this was that the cane invariably split, much to the annoyance of the headmaster. No doubt there is some truth in this anecdote, but personally I was never able to substantiate this story, having never been caned in my life (it would seem that my behaviour was the exact opposite of that of my father when I was at school). Naturally my father's education suffered because of his truancy, but he was intelligent and his almost copper-plate handwriting was exceptionally fine and beautiful.

The genealogy of my family on my father's side can be found in Brooker (1993: 156–159; 2002: 152–166) who has traced the Tremewans back to the XVI century, the earliest recorded date being 1566. The Tremewans are now scattered throughout much of the world and apparently are all related, having emanated from two branches, one from Perranporth (pre-1566), the other from St Agnes (pre-1767) – my ancestors were from the latter village.

My mother, Dorothy Gladys (née Oliver), was born in Redruth although her father (Perceval Peveral) and the rest of the Oliver family originated from Helston where descendants still live today. Characteristic of the era, my mother was first and foremost a housewife, but she was keen on country walks and had such interests

[18] My grandmother Bessie Tremewan died on 31 March 1934. Probate was read at Bodmin on 8 October 1934, the whole of the estate, including the sum of £50.0s.0d., having been left to Susan Henwood who had married Richard John (Jack) Pearce on 11 January 1919; it appears that nothing was left to my father!

as gardening, natural history, knitting and needlework; moreover, she was an avid reader.

At the age of five I started school at Mt Hawke Primary, but as my attendance there was only for a year or so, my memory of it is rather vague. However, there are three things that I do recall vividly, viz. entering the school by the main door; the old coal fireplace consisting of a round stove placed in the centre of the classroom with a chimney pipe rising through the ceiling, the only means of providing heat in winter; thirdly, getting into minor trouble on one occasion! However, amongst the Tremewan family archives is my report for my first term at Mt Hawke School. Dated April 1936, it is recorded that I was top of my class, that the maximum number of marks was 50 out of 50 and that I was present 131 times and absent only 13 times for that term. As for subjects, I was awarded 20/20 for Reading, an 'A' for Arithmetic, 10/10 for Religious Knowledge, 10/10 for Writing, and 10/10 for a Poem. The Remarks consist of 'A good boy' from the class teacher H. A. Sampson and 'Gerald has made a very good beginning' from the head teacher M. F. A. Oats! No other school reports appear to have survived and as one of my colleagues jokingly suggested, perhaps they were so poor that my mother decided not to keep them.

When a new, modern school was erected nearby in 1981, Mt Hawke Primary was destined to be demolished with the intention of building houses on the site. However, a Yorkshire man by the name of Ron Dawson purchased it and converted it into a pub and restaurant that was originally licensed under the name of 'The Old School House' (Fig. 63); it is now known as 'The Old School Pub' and under the propriety of Ian and Rose Davies. Mt Hawke Primary School was erected in 1874 and was built with money provided by the then Lord Falmouth; constructed of local stone, it is indeed a beautiful building and much to my delight is now preserved for posterity as it has been designated a 'listed building'. Little did I, or my parents, for that matter, realise when I was five years old that I would occasionally enjoy a beer and a meal there in my retirement!

Fig. 63. The Old School Pub at Mt Hawke, once the original village school. *Photo*: W. G. Tremewan.

My attendance at Mt Hawke Primary School was short lived, as my parents moved to the town of Redruth where I began attending East End Primary School at the age of seven. At this particular time my mother was suffering from poor health that was exacerbated by the rather damp house that we had moved into, so the medical profession suggested that it might be better for her to live in the countryside. Accordingly, we moved to a four-roomed cottage that had a fairly large garden and was situated on the outskirts of Wheal Rose, a hamlet or small village near Scorrier. The anglicised name 'Wheal Rose' is derived from the Cornish '*whēl*' or '*hwēl*' – a mine, and '*rōs*' – a heath or moor, the adjective in the Cornish language always following the noun; literally translated, Wheal Rose or '*Hwēl* ros' means 'the mine on the moor'. The old engine house[19], built of local stone and one of many that are still dotted around the countryside in west Cornwall, was derelict in my younger days, but quite recently it has been renovated and converted into a dwelling house.

[19] There were originally two engine houses at Wheal Rose, as can be seen from an old photograph taken *ca* 1908 (see also Benney, [1986]: 34, top fig.).

Personally, I would prefer to see such structures left in their derelict condition but preserved to the extent that they do not deteriorate further; after all, they form part of our Cornish heritage and converting them into dwellings detracts from their natural beauty. Moreover, in my younger days the ivy-clad inner walls of the one that is still extant at Wheal Rose provided nesting sites for a colony of Jackdaws (*Corvus monedula*) and a pair of Barn Owls (*Tyto alba*).

Early childhood to adolescence

In my youth, Wheal Rose was a sleepy hamlet that consisted of a few houses and cottages surrounded partly by farmland but mostly by large tracts of moorland and old metalliferous mining sites that were purple with heathers (*Erica cinerea* and *Calluna vulgaris*) from July to September and a blaze of yellow with the flowers of Gorse (*Ulex europaeus*) in the spring. These old mining sites were also rich in wildlife and I remember a Woodlark (*Lullula arborea*) nesting on the ground amongst the heather less than five metres from our garden gate, while the Yellow Hammer or Yellow Bunting (*Emberiza citrinella*) was common – its delightful little song of 'a little bit of bread and no cheese' could be heard everywhere during the spring and early summer. Not far from my home an old piece of galvanised iron had been carelessly dumped and thrown over a gorse bush and under this I found a nest of the Yellow Hammer containing a clutch of five eggs. I can remember how thrilled I was when I first found a nest of this bird, the beautiful eggs marked with blotches and very irregular lines and looking as though they had been scribbled over with a fine pen, hence the rarely used alternative vernacular names 'Writing Lark' and 'Scribbling Lark'; apparently an old man from Lancashire maintained that a message had been inscribed by the bird which, interpreted, reads 'don't take my eggs' (Coward, 1920: 79). As a child lying in bed on a warm summer's night I regularly heard the churr of a Nightjar (*Caprimulgus europaeus*) through the open window of my bedroom. Rare or local plants such as Harebell (*Campanula rotundifolia*) and Yellow Rattle (*Rhinanthus minor*) were present as were grassy tracts where Knapweed (*Centaurea nigra*) and Bird's-foot Trefoil (*Lotus corniculatus*) were common, such areas being havens for butterflies, burnet moths (*Zygaena filipendulae*) and other, smaller, Microlepidoptera. Parts of the moorland and especially the Cornish hedge-

rows surrounding the fields abounded in brambles (*Rubus* spp.) and in August and September were extremely good for blackberry picking. Our relatives who lived in Redruth made regular excursions to Wheal Rose every autumn with the sole purpose of picking blackberries for making jam, jelly and tarts. They would spend the whole day there and return early evening by bus, their large wicker baskets full of the fruit. My mother, sister and I would also pick blackberries and enough jam was made to last until the following season. The freshly made blackberry tarts thickly covered with Cornish clotted cream, or teas of bread, blackberry jam and cream, are something that one never forgets (it seems that cholesterol was unheard of those days!). My sister Margaret, five years my junior, has recently reminded me that one afternoon our mother sent us out to pick enough blackberries for a couple of tarts for tea. Each armed with an empty two-pound jam jar, we set off, but I am reminded that while my sister diligently picked enough berries to fill her jar, I spent most of the time trying to catch butterflies! When the time came to return home, I somehow persuaded my sister to let me carry the full jar and gave her the almost empty one, claiming when we got back that I had picked most of the blackberries myself. It seems that older brothers can at times be so unkind to their little sisters! Alas, the birds and plants, and the butterflies, have gone and the whole track of moorland with its disused but then open mine shafts is now destroyed, having been converted into an industrial park. Why it is necessary to have so many of these in Cornwall that has a population of just over half a million is beyond my comprehension – industrial parks are everywhere, like blots on the landscape. Moreover, the importance and conservation value of old metalliferous mining sites for natural history cannot be stressed too strongly, as already pointed out by Spalding *et al.* (1996: 31–39), yet so much has been destroyed since World War II.

There was a small field that separated our cottage from the village – the field still remains but now contains bungalows adjacent to the road, while our rented cottage has been demolished; after it was vacated by my mother and father it was abandoned and eventually fell down in the sixties or seventies through lack of maintenance by the landlord. In the field mentioned above was a strong colony of Dung Beetles (*Geotrupes stercorarius*) and on warm summer evenings these insects were common and could be seen buzzing around and emerging from the pats of

cow dung. Alas, I have not seen this beetle in Britain since my childhood and it seems to have become rare because the dung is now contaminated as a consequence of the cattle being treated with a drug that is administered as a prevention against parasitic worms.

Fig. 64. Bob the lurcher, 1949. *Photo*: W. G. Tremewan.

My father was very keen on hunting rabbits with a ferret and dogs, which he did on most Saturdays during the winter months; one of the dogs was a small type of crossbred terrier that was used to flush rabbits out of a brake while the other was usually a greyhound or whippet that chased and caught the rabbit once it was out in the open. My father had a variety of dogs in his time but all were for the purpose of hunting and the best type of dog for catching rabbits was known as a lurcher, a cross from a greyhound and a collie or other suitable breed. Although lurchers are not necessarily faster than greyhounds, they are often better as they are slightly smaller, tougher and usually more agile, especially on rough terrain such as moorland. When I was a boy we owned a lurcher (Fig. 64) that had been given to me as a birthday present by my parents; his name was 'Bob' and he followed me everywhere as there was a real bond between us. His colour was described locally as 'yellow and white', but in fact he was basically light orange-brown and white. He was a superb hunting dog and had been trained to catch and retrieve rabbits; moreover, in contrast to some dogs that bite hard on a rabbit when it is caught, he was very gentle, in fact so gentle that when he dropped a rabbit at ones feet it often ran off and had to be chased again. It was very important that a dog should catch a rabbit without bruising it; otherwise it would be unsuitable for the table. Bob's fame as a superb hunting dog very quickly spread throughout the district. One Saturday afternoon my father and I were hunting on some local moorland known as Radnor Downs (long since

destroyed and now third-rate farmland), not far from Wheal Rose, when we were joined by a couple of men each with a greyhound. It was not long before our terrier (a Jack Russell cross by the name of 'Tiny' and belonging to my sister Margaret) flushed a rabbit from the brake. The two greyhounds and Bob the lurcher took off in hot pursuit, the latter very quickly passing the two greyhounds and eventually catching the rabbit, retrieving it and dropping it at my feet. The two men that had joined us were amazed and when one of them asked whether the lurcher was for sale, my father replied that it belonged to me. As far as I can remember, the man was a cattle dealer and taking £20.00 out of his wallet, he offered this to me in exchange for my dog. Bearing in mine that this was probably a month's wages for my father at that time, this was indeed a large amount of money. My reply to the cattle dealer was that my dog was not for sale, even if he offered me £100.00!

Although we had moved to Wheal Rose, I continued to attend East End Primary School and at the age of eleven transferred to Redruth County Grammar School. Just prior to attending grammar school in the autumn of 1942, my parents, sister and I moved to Treburgett, a hamlet consisting of less than half a dozen houses and situated near the village of St Teath. From late April to August of that year, we shared a large farmhouse with the farmer, his wife and four children; at that time my father was involved in the construction of a military aerodrome on Davidstow Moor and it was considered prudent for all of us to move nearby. Treburgett was and still is a delightful area with extensive woodland; in 1942 there were a few old metalliferous mining sites present and it was from these that the spoil heaps were removed and used as ballast to build the aerodrome. It was an extremely good area for birds and as I was then more involved in collecting birds' eggs than in entomology, I was able to add many new species to my egg collection, including Buzzard (*Buteo buteo*), Mistle Thrush (*Turdus viscivorus*), Swallow (*Hirundo rustica*) and Cuckoo (*Cuculus canorus*), also Lapwing (*Vanellus vanellus*) and other moorland birds that inhabited Davidstow Moor, part of which was being destroyed because of the construction of the airfield. A large pear tree had been trained to climb over the whole of the front of the old farmhouse at Treburgett and amongst its branches was a large colony of House Sparrows (*Passer domesticus*); many of the nests could be reached by leaning precariously out of the bedroom windows, while others

were more accessible with a ladder. House Sparrows are delightful little birds and when I hear them squabbling and chattering nowadays I am immediately reminded of my childhood. While we were at Treburgett, my sister and I attended St Teath Primary School; this necessitated a walk via a public footpath across farmland and thence by road to St Teath. On one occasion I found a nest of a feral Guinea Fowl (*Numida meleagris*) at the bottom of a hedge quite close to the footpath; the nest contained a large number of eggs, perhaps thirty or so as far as I can remember, and I was able to add a couple of these to my collection. Guinea Fowl are noisy birds at the best of times and when I first flushed the bird from its nest the noise was quite frightening.

A smaller house was attached to one side of the farmhouse and here lived a bachelor farmer who would have nothing to do with the family that we were living with, having fallen out with them many years earlier. However, this did not prevent us from being friendly with him and occasionally my mother would provide him with a cooked meal for which he was always extremely grateful. My father got to know him well and at weekends we would go hunting for rabbits on his farm, using a ferret and nets and a dog that he owned, which was called 'Peter'. This dog was a greyhound cross, in colour white spotted with black and thus probably part Dalmatian, but very capable of catching a rabbit along a straight run. Moreover, he was a cunning dog, as he always seemed to know where there might be a hidden rabbit hole that had not been covered by a net; as a consequence, Peter would wait nearby and catch the rabbit immediately it left the hole, at which point the farmer would invariably say in the local dialect 'Pater's got en'.

Some years ago whilst down on holiday from Surrey, my wife, mother and I revisited Treburgett to find that the area had changed considerably, which I suppose is inevitable. The pear tree that used to cling to the front of the farmhouse was gone, presumably having died, while the house itself was no longer part of the farm, having been purchased by a non-Cornish couple. Having knocked on the door, I explained to the owners that I had lived in the house when I was a young boy and had not seen it for more than forty years or so. We were invited it and I was pleased to see that inside it was much as I remembered it, with the kitchen floor still consisting of large slabs of Delabole slate – it was good to see that the new

owners were attempting to preserve as much of the old character of the house as they could and they were keen to learn something about its past. I reminisced and told them why we had stayed there for four months, described the farmer and his family and said that in spite of the fact that World War II was on at the time, we used to have Cornish clotted cream with our tea every evening!

While living at Treburgett, my sister and I attended the primary school at St Teath. Being summer, I played cricket once or twice a week, a game that I much enjoyed as a participant and subsequently as a spectator. On one occasion whilst batting I was hit full in the mouth with the cricket ball, after which I lost my nerve and never played again, even though my injuries were slight – no broken teeth and only a split lip!

When I attended grammar school, I travelled from Wheal Rose to Redruth by train, which I caught at the railway station at Scorrier (the station is no longer there, the service having been axed in the days of Beeching). In the wood at the back of the station were some old and very large pine trees (long since cut down) that were home to a very large colony of Rooks (*Corvus frugilegus*) and Jackdaws. Scorrier station was around 15 minutes walk from our cottage at Wheal Rose and on mornings in March I used to leave home earlier than necessary so that I could spend half an hour or so watching the Rooks carrying twigs and other material to build or repair their nests; their flights to and from the rookery were accompanied by the constant cawing and chatter that these delightful and intelligent birds make.

Grammar school was a revelation to me, as the masters wore black academic gowns over neatly pressed suits and showed respect to each individual pupil, something that one rarely experienced in primary school. By this is meant that at grammar school one was treated as an equal by the masters, in contrast to the shouting and screaming that one sometimes had to endure from many of the primary school teachers, most of whom were middle-aged spinsters. We did have two female teachers at grammar school when I was there, as five of the masters had joined the forces because of the war. These ladies were in their early twenties; fresh out of university, they treated the pupils with the same respect that the masters did. One was a Miss B. D. Hayward, who taught Latin; she was petite and very attractive and I have to admit that I had a crush on her (perhaps this was the cause of my being

so good at Latin as I was always top of my form for this subject!) The other was a Miss Berryman who was of Welsh origin and taught English with a strong Welsh accent that at times I found difficult to understand, so much so that my written work taken down from her dictation was not as good as it should have been.

The only science subjects in the curriculum were chemistry and physics, which I much enjoyed; the latter was taught by W. (Bill) Eathorne who took a special interest in me because of my leanings toward science and natural history (biology was subsequently added to the curriculum, but too late for me). Although Bill Eathorne invited my mother to the school for a chat about my future prospects, there was little that could be done to help me with a career in natural sciences, as there was no possibility of studying Zoology and Botany at the grammar school (in fact, at that time it was not possible to receive tuition in either of these subjects anywhere in Cornwall!). As a consequence, I left grammar school in 1945 at the age of fourteen, ostensibly to begin an apprenticeship in carpentry. Such intentions were short lived, however, and I soon found myself working on a market garden, not much of a career after a grammar school education, as certain relatives very quickly pointed out to me. In spite of such perhaps justifiable criticism, my education at grammar school had provided me with a good grounding in the 'three Rs'; moreover, I had had basic tuition in French and Latin that I enjoyed and from which I would benefit in later life. In fact, I liked Latin so much that I was always top of my form at the end of the summer term exams. Our French master was G. G. Mountain, a bit of a fusspot who insisted on being addressed as 'Monsieur Montagne' during lessons! Our mathematics (and sometimes Latin) master was a dear, grey-haired old fellow by the name of L. T. Polglase who was what one today would consider to be the deputy head; apart from teaching, one of his many responsibilities was fitting a new boy with a cap and it was quite remarkable that he could tell with great accuracy the size of cap that a boy needed by simply looking at the side of the boy's head. Our English master was W. E. Barnes, a tall man with black curly hair and very shiny brown shoes. C. 'Nobby' Clark taught geography, his nickname being derived from his bald head. Whenever F. W. 'Dizzy' Wetherell, the head master from 1931–1964, entered a classroom, all the pupils and the teacher in charge at the time immediately stood up and stayed thus until told to sit down. If he then

addressed an individual pupil, that particular boy again stood up. Weatherill was affectionately known as 'Dizzy' by the pupils, as I understand that he was an ex RAF pilot who had parachuted to safety behind enemy lines when his plane was shot down during active service in World War I.

The school had an Air Defence Cadet Corps Squadron under the command of Weatherill, something that he had initiated and was very proud of, and he tried to persuade every senior boy to join, stating that by doing so it might eventually lead to a career as an officer in the RAF – the alternative, according to him, was a career in the army or in the coalmines (he had forgotten that, in addition to the coalmines, farming also provided exemption from national service!). Parades were held every Friday afternoon and I still remember Weatherill appearing in his officer's uniform from the back door of his study and stepping down onto the platform in the assembly hall[20] to take morning prayers. When morning assembly took place, forms 1a and 1b were lined up below the platform immediately in front of the masters who were bedecked in their gowns, with the rest of the pupils extending to the back of the hall according to seniority, the most senior sixth-form pupils at the back. On the wall above the platform were varnished boards with the names of past pupils in beautiful gold lettering, such boys having gained their degrees and distinctions at Oxford and Cambridge or at other universities. The assembly hall also served as a gymnasium. After comprehensive education was introduced in 1965 by the then left-wing socialist government, which had the misconception that 'all men are equal', Redruth Grammar School closed in 1976. Built of local granite, this beautiful building had its windows boarded up for many years and was used by small commercial companies – so much for ideologies! However, at the time of writing (2006) it is being renovated and contains artists' studios, so that it will be preserved for the foreseeable future.

While I was at the grammar school, the caretaker and grounds man was Charlie Delves, a small man with a moustache; to me as a young lad he was vaguely reminiscent of the comedian and film star Charlie Chaplin in appearance. During the summer one of his duties was to cut the grass in the playing field and to keep the

[20] Many years later the assembly hall was converted into a ground and first floor, presumably when comprehensive education took over the school.

cricket pitch beautifully mown; this he did with a machine pulled by a pony. He was a likeable fellow and tolerated, with great dignity, all the pranks that the boys would get up to.

The grammar school uniform consisted of grey trousers and a black blazer on the top pocket of which was the school badge depicting a lamb carrying a flag, also the badge of Redruth. The cap was also black with very fine red rings – because of its design, we were known as 'county ringworms' by the pupils of East End Primary School and Trewirgie School in Redruth; in retaliation, the grammar school boys referred to the pupils of these two schools as 'East End nanny goats' and 'Trewirgie water rats', respectively! Needless to say, there was some snobbery involved as far as the county ringworms were concerned.

As already mentioned, I have always been interested in natural history, but especially entomology, ornithology and botany. As a child, of course, I followed the then custom of collecting almost everything, such as butterflies, moths and other insects, birds' eggs, stuffed birds and animals, plants, shells and minerals. I even attempted the art of taxidermy but soon discovered that there was more to skinning and stuffing a bird than meets the eye! As far as entomology is concerned, there as no doubt that I was influenced greatly by F. W. Frohawk's *The Complete Book of British Butterflies* (1934), a copy of which was constantly on loan to me from the Redruth Public Library, so much so that on more than one occasion the librarian, from recollection a 'dear old lady', used to persuade me to return it for a period, explaining that there were others who might be interested in borrowing it. I was always fascinated by the beautiful colour illustrations in this book, reproduced from Frohawk's original paintings (now held in the Entomology Library at the Natural History Museum, London), and I still remember, as a pupil at Redruth Grammar School, spending many lunch breaks on warm summer days reading and rereading this book in the recreation ground and gazing with fascination at the colour plates instead of swotting for exams or playing cricket with my school chums! It was not until I was in my late teens that I was able to purchase a second hand copy for £3.00, at that time a princely sum that was more than half my wages for one week!

A notable event that was to influence the future course of my life was the sighting of an example of the North American Milkweed or Monarch butterfly (*Danaus*

plexippus) at Wheal Rose on 25 July 1943. Because World War II was still raging, Guy T. Adkin, a cousin of the better-known (in England) lepidopterists Robert Adkin and Benjamin W. Adkin, was residing with his French wife at St Mawes, having fled their large country home near Bayonne in south-western France because of the German occupation. During his 'period of exile' at St Mawes, Guy Adkin was the entomological recorder for Cornwall and the Isles of Scilly (Smith, 1997: 411) and the publication of a note by him on immigrant butterflies and moths in the local weekly newspaper, *The West Briton*, more or less coincided with my sighting of the Milkweed butterfly. On reading this note I wrote to him and reported my observation of the butterfly that I had identified from the illustrations on plate III of Frohawk's book. In due course I received a kind letter from Adkin who, whilst accepting my record, tentatively suggested that I could be mistaken over the identification because it was an early date for this species of butterfly (in Britain Milkweed butterflies, when they occur, are usually observed in September and October). Moreover, I had provided him with a description much too detailed to be done from memory, as Adkin had realised, and when we eventually met he tentatively suggested that I had written the description with reference to Frohawk's illustrations, which I had! After further correspondence with Adkin and a visit to his home at St Mawes, the record was accepted as authentic and was published as a note in *The Entomologist* (Dannreuther, 1944: 73) – the reader can imagine the kudos this gave to a boy aged twelve! With hindsight and experience gained over the years, I have often wondered whether the specimen in question had been misidentified as a result of my boyish enthusiasm and that in fact it had been nothing more than an unusually large female of the Dark Green Fritillary (*Argynnis aglaja*)! I do hope that my record was authentic! After retiring to Cornwall many years later, I did in fact observe a genuine example flying below the cliffs south of Pentreath Beach on the Lizard peninsula on 5 October 1999 (Tremewan, 2000), at a time when the species was observed in large numbers in Cornwall and elsewhere in Britain (Tunmore, 2000).

Another exciting event was the capture of an example of the Yellow-winged Darter (*Sympetrum flaveolum*) in the vicinity of Wheal Rose in 1944. This rare immigrant dragonfly is an attractive species with a slender red body and a large, distinctive,

saffron-coloured patch in the basal area of each hindwing. The specimen was sent by Guy Adkin to the British Museum (Natural History) where it was determined by Cynthia Longfield, the then leading authority on dragonflies, who suggested that, because of its rarity, I might like to present it to the museum – this I did but naturally with some reluctance. The record was published in *The Entomologist* and constituted my very first publication (Tremewan, 1945), even if it did consist of only seven lines in length!

At that time Norman D. Riley was Keeper of Entomology at the British Museum (Natural History) and also the editor of *The Entomologist*. Norman Riley was a kind man and of all the Keepers that I have personally known, he was, in my opinion, the most remarkable. In spite of being responsible for running a large department and deeply involved in all kinds of official bodies such as the International Commission on Zoological Nomenclature, the Royal Entomological Society of London and the South London [now British] Entomological and Natural History Society, to name just a few, he always found time to associate with and help amateur entomologists. After the Milkweed butterfly episode, I corresponded with him fairly regularly and he never failed to respond to my many questions, his kind letters always being written in longhand in the evenings or at weekends and sent from his home in Wimbledon. Little did I realise then that when I was eventually to meet him for the first time at the British Museum (Natural History) in September 1956 he would be instrumental in my obtaining employment as an Assistant in the Department of Entomology, a post which I took up in February 1957.

At St Mawes I met an English lady by the name of Vera Molesworth Muspratt, who was a close friend of Guy Adkin and who was also in exile from her French home in St Jean-de-Luz in the Basses-Pyrénées. Vera Muspratt was a keen lepidopterist and was especially interested in migration, spending much of her time before and after the war recording the flight paths of migrating butterflies in the Hautes Pyrénées. After the war had ended, she invited me to spend what was for me my very first holiday abroad in her beautiful villa that has the exotic name 'Aïce Choko' at St Jean-de-Luz in September 1950. In those days the villa was the last on the road northwards out of the town so that I was able to collect in her garden and the immediate vicinity such butterflies as the Swallowtail (*Papilio machaon*) and

the southern nominotypical subspecies of the Speckled Wood butterfly (*Pararge aegeria aegeria*), which has orange instead of pale yellow spots on its wings (the pale yellow spots are characteristic of the populations found in the northern range of the species). She was a very kind lady and later was to provide me with so much practical (and financial) help when I was setting up home in Surrey with my wife and eighteen-month-old son in the late 1950s.

Both Vera Muspratt and Guy Adkin were of immense help to me in my teenage days, providing information on entomological dealers and generously giving me books, entomological pins, setting boards and store boxes in which to keep my specimens. I still have Guy Adkin's signed personal copy of the first edition of Richard South's *Moths of the British Isles* (1908–1909), a two-volume work that is now considered to be a classic. After his death I inherited his personal annotated copies of volume 1 and part of volume 2 of Lhomme's *Catalogue des Lépidoptères de France et de Belgique* (1923–1935).

The Microlepidoptera are a large group of usually very small moths and well over 1000 species are represented in the British Isles. As mentioned earlier, my interest in them was stimulated and encouraged by Guy Adkin, the latter introducing me to John Heath who had been recruited into the army and was stationed at Pendennis Castle, Falmouth. John was also very keen on the 'micros' and as a lad I met him on several occasions at Falmouth where we went collecting along the rocks below the castle; we also did fieldwork along the cliffs towards Swanpool and Maenporth. John Heath also visited me at my parents' home to see my collection that included material from the R. E. Frampton collection of Microlepidoptera[21], which had been given to me by Guy Adkin. On one occasion we were collecting near Swanpool when John suddenly slipped and fell backwards into a shallow grassy hollow to end up spread-eagled on his back amongst a large clump of brambles. Naturally I saw the funny side of this incident and when I realised that he had not injured himself I began to giggle and continued to do so when helping him out of his predicament. John never did have much of a sense of humour and this occasion was no exception – he certainly did not appreciate my amusement over his mishap. After he was

[21] My Cornish collection of moths, both macros and micros, is now deposited in the Natural History Museum, London, although I still possess the butterflies.

demobilised from the army he joined a company known as Pest Control Limited at Cambridge and spent two years or so working for them in Salisbury [Harare], Southern Rhodesia [Zimbabwe], from where I received sporadic letters from him. I think he became rather disillusioned with the life style of his colleagues there and I remember him saying in one of his letters that most of them were more interested in making money and spending it on alcohol than they were in entomology. I eventually lost touch with him while he was in Southern Rhodesia. Subsequently, he left Pest Control Limited to take up a post at Merlewood Research Station, Grange-over-Sands, Lancashire. I was next to meet him at the British Museum (Naturally History) by which time I was already working in the Microlepidoptera Section of the Department of Entomology. Of course John Heath is now well known to every British and continental lepidopterist, not only for his work at the Biological Records Centre at Monks Wood Experimental Station, Huntingdon, but also for his editorship of the early volumes of *Moths and Butterflies of Great Britain and Ireland* until his death in 1987. British lepidopterists owe a great debt of gratitude to John for this ongoing series; his enthusiasm and drive not only persuaded Basil Harley (at the time managing director of Curwen Press) to launch the series but also encouraged so many of us to make contributions to this monographic work.

Ponds and streams

There were many ponds around Wheal Rose and Scorrier, some of which were situated on farms or by the roadside, their main purpose being to provide water for the cattle and horses. Surprisingly, most of them still survive to this day, for example those on North Downs Farm that is still owned by the Rodda family, although one that was situated on the right hand side of the road leading to Skinners Bottom and *ca* 100 metres or so from the old A30 no longer exists. This particular pond was long and relatively narrow and never more than a few centimetres deep and was surrounded with Soft Rush (*Juncus effusus*) with its bottom mostly covered with some kind of waterweed. It is a pity that it has gone, as it was the only locality where I ever found the Water Scorpion (*Nepa cinerea*). The ponds were a frequent haunt of mine when I was a child, as I was always fascinated with pond life and whenever possible kept a variety of water insects and other creatures in large glass

jars or in tanks. It was always a thrill to find the first frogspawn in January or occasionally even in December and my friends and I always took some home to watch the embryos developing into tadpoles; eventually we used to observe the latter develop into frogs, which we released at the pond from where the frogspawn was collected. I also kept Palmate Newts (*Trituris helveticus*), the only species of newt to be found in the district, and even leeches, although the latter were always escaping. Two species of Water Boatmen (*Corixa punctata* and *Notonecta glauca*) were common and I can remember one of the latter species piercing my finger on one occasion when I picked it up. The commonest of the water beetles was the sexually dimorphic *Acilius sulcatus*, the male of which is unmarked and has modified forelegs used for pairing, the female with longitudinal stripes on the elytra. The Great Diving Beetle (*Dytiscus marginalis*) and the Great Silver Beetle (*Hydrophilus piceus*) were less common, the latter being a vegetarian in contrast to the former.

I often got into trouble with my mother after visiting ponds, as I quite frequently came home with wet shoes and socks. The largest pond in the area was what we called Rodda's pond; it was about a metre deep in the centre and rather muddy as it was adjacent to the farmyard of North Downs Farm and used regularly by the cows. On one occasion Gerald Lobb and I found a large square palette of wood by the side of this pond and launching it onto the water we both floated out to the centre; it was a somewhat precarious ride and Gerald lost his balance and fell in, while I ended up with wet feet. Poor Gerald – his mother was very strict and he was not allowed out for some time after this incident.

During the spring and summer I used to visit my Aunt Susan (my father's sister) at Manor Parsley almost every Saturday and of course regularly during the school holidays. One of the attractions at Manor Parsley was the stream running through the valley and entering the sea at Porthtowan and here I would spend hours trying to catch small Trout (*Salmo trutta*) with a net (at that time I had not learnt the art of tickling). The area was a haven for wildlife and the stream was frequented by Water Voles (*Arvicola amphibius*) and Water Shrews (*Neomys fodiens*), while upstream below Millpool Hill one could hear Turtle Doves (*Streptopelia turtur*) in summer, or flush up Snipe (*Gallinago gallinago*) in winter; if one were really lucky one might even see a Water Rail (*Rallus aquaticus*) stalking furtively through the marshy veg-

etation. Across the stream and opposite the road junction that leads to Mt Hawke is a disused mine tunnel or adit[22] from which cool potable water flows (before piped water was brought down from Mt Hawke, this was the only source of drinking water for the local inhabitants, apart from the rain water that was channelled from the roof into butts via the gutters[23]). I was never brave enough to venture too far into the tunnel although I did go to the end on one occasion with my cousin Russell Pearce who had a torch. It was from the mouth of this tunnel that I used to obtain the leeches mentioned above. When catching the bus at 6 o'clock in the evening to go to my home at Wheal Rose, I can remember the conductor jokingly saying to me that leeches and newts were not allowed on board!

The stream that runs through the semi-wooded valley known as Park Shady, which is situated to the west of Mt Hawke, also contained small Trout; Roger Wonnacott, a friend who was in the same form as myself at Grammar School, was extremely good at catching them by the method known as 'tickling'. Although he showed me how to do it, I never really mastered the art and only ever caught one fish in my life by this method. The technique was to watch where the trout took refuge under a submerged overhanging bank, then wade slowly to the spot and very gently put one's hand underneath the bank until one felt a fish; having located the fish one slid one's hand under its belly and caressed it, then, at the appropriate moment, grabbed it. The size of the Trout was governed by the size of the Manor Parsley and Park Shady streams and they were never more than 15–20 cm in length and hardly big enough to eat.

The lower fields of Manor Parsley Farm are situated on the floor of the valley opposite the old mill pool and here the Mole (*Talpa europaea*) was common, with molehills dotted around everywhere. I remember asking the farmer Jack Barbary whether he could catch a Mole for me, as I wanted to skin one. I suggested that perhaps the best way would be to use a trap specially designed to catch Moles, but Jack said the best method would be to dig the animal up exactly when it was pushing up earth from its tunnel to the surface of the field, or as expressed in the

[22] 'Adit' is pronounced as in the Cornish word 'odyt', meaning a tunnel.

[23] The gutter of a roof is 'lōnder' on the Cornish language, a word that has survived in the Cornish dialect to this day and is pronounced 'lawnder'.

Cornish dialect 'Best time te catch en is when es evin'. Apparently the best time to observe this was around mid morning when one could very quietly approach a molehill where a mole was actively pushing up the soil and dig up the poor animal using a mot-axe[24], a tool that is designed for cutting roots and tree stumps when one is repairing a Cornish hedge. In due course I was presented with a mole and I was amazed to find the soft, velvety grey fur so clean.

Aunt Susan

My Aunt Susan (née Susan Henwood Tremewan) was my father's sister and twelve years his senior and, like my father, was born at Lambourne, Manor Parsley. Apart from being my favourite aunt, Auntie Susie, as she was known affectionately, was also my godmother and in this respect she certainly lived up to her name. During school holidays she would regularly take me out for the day; when asked where I would like to go my reply was almost invariably 'to the Royal Cornwall Museum in Truro', or we would have a picnic lunch on Carn Brea, a granite hill rising to 228 m above Camborne/Redruth. Dominated by its castle and monument, the latter dedicated to the Bassett family of Tehidy, it is the site of an ancient hill fort; excavations have revealed many hut circles and the shells of limpets and other marine molluscs, showing that the people who lived there must have visited the north coast to collect such items for food. On the tops of many of the exposed granite boulders are circular depressions that were cut into the rock by these ancient inhabitants; the exact purpose of these depressions is unknown but it is thought that they could possibly have been constructed to collect rainwater. From Carn Brea there are superb views of the surrounding countryside and it is possible to see the Atlantic coast on the north and the English Channel on the south.

As stated above, my favourite outing was to the Royal Cornwall Museum, on the ground floor of which is housed the famous Rashleigh collection of minerals, many specimens of which originated from Cornish mines. As now, the main hall was devoted to local history, including exhibits of prehistoric tools and even a stone coffin

[24] I have been unable to trace the origin of the word 'mot' or 'mott', pronounced with a short 'o' as in 'hot', but in the Cornish dialect it is used for a root of a bush or tree; Phillipps (1993: 42) gives two alternative spellings, 'mote' and 'moot', stating that it is the stump of a tree.

containing the bones of the person that had been buried within. However, it was the first-floor gallery surrounding the central or main hall of the museum that was the greatest attraction for me. On all sides were large glass-fronted cases containing stuffed animals and birds, most of which were local or of Cornish origin and all beautifully mounted. Imagine my dismay when visiting the museum some forty or so years later whilst down on holiday to find that every specimen had faded and lost its colours. It was originally a beautiful collection of specimens and it is indeed a tragedy that it should have been ruined by ultraviolet light coming through the glass roof above the hall. Now the glass has been covered to exclude the light, but of course too late to prevent the damage that occurred to that collection, which is no longer on display and has possibly been disposed of.

Just above and adjacent to the double staircase leading to the first floor was an entomological cabinet containing a superb collection of beautifully set British butterflies; the door of the cabinet was always locked so one had to seek permission to view the collection. The caretaker at the museum was a little, wizened old man who, to a young boy, seemed to be as ancient as some of the exhibits in the museum; he used to spend most of his time hobbling around and making himself known to any visitor that might be present, rattling a large bunch of keys in one hand and some loose change in his trousers pocket with the other hand, the former action in an attempt to show his self-imposed importance, the latter a hint to obtain a tip. As I wanted to see this butterfly collection every time I visited the museum, my aunt would ask him whether this would be possible and he would invariably reply 'Oh, the boss does not like anyone seeing those butterflies because they must not be exposed to the light, but I will find out where he is and see what I can do.' Repeating the same ritual every time we asked, he would return some twenty minutes later and say 'The boss is not around at the moment, so I will shown them to you now, but we must be quick about it.' He would then get down on his knees and unlock the cabinet, pull out each drawer himself (I was not permitted to touch anything) and I was allowed about ten seconds viewing of each drawer, so it was all over in a few minutes! But I was so thrilled to see rows of species such as the Swallowtail (*Papilio machaon*) and Purple Emperor (*Apatura iris*) and afterwards would dream of eventually observing these species of butterflies alive, as neither is found in

Cornwall. After the viewing the caretaker would receive a shilling from my aunt, which was the whole purpose of the exercise as far as he was concerned.

Reminiscences of World War II

In the early 1940s I was playing one afternoon alone on the heather-clad metalliferous mine sites at Wheal Rose when I heard the drone of a low-flying aircraft that was approaching rather slowly from the south-west; eventually it came into sight and as it was flying almost just above me, or so it seemed, I immediately recognised it as a German Messerschmitt. It was so low that I could see the pilot quite clearly and, having been brainwashed by the propaganda that one heard almost every day on the radio and from one's family and friends, I was quite frightened and rushed home to tell my mother of the event. A few days later I heard that the plane had crashed a few kilometres further east but the fate of the pilot was unknown to me. A propos propaganda, I remember my father telling me during the war that he was told that the German people were so poor they had to eat black bread! Of course, the Germans are famous for their varieties of bread and black bread is one of them; in more recent years I have visited a bakers in Bonn where they had 27 different kinds of bread.

Whilst my cousin Russell was working on his smallholding at Manor Parsley, a Spitfire crashed (presumably with engine trouble) in a field belonging to Will Jenkin of Mount Pleasant Farm and situated across the valley from Navvy Pit. Shortly after impact, the plane caught fire, causing bullets to fly in all directions from the exploding shells. In spite of this and with no thought for his own safety, Russell rushed to the scene of the crash and, having managed to open the sliding roof of the cockpit, pulled the pilot from the plane; however, the poor man had been badly injured and was dead and the act of pulling him out left the lower parts of his legs behind.

Russell had a very close friend by the name of Nick Pascoe who, in spite of leaving school at the age of 14 with only a basic education, was a fighter pilot during the war. Nick was shot down over enemy territory and reported missing. I remember the incident vividly as I was with my aunt at Manor Parsley when Russell came in from his work and burst into tears, saying simply 'Nick has gone'. It was a

mixture of sorrow and anger and when he recovered from his immediate grief he vowed there and then to volunteer for the RAF, but my aunt eventually persuaded him not to do this – she had already lost her eldest son Roy who had volunteered for the Navy at the beginning of the war. After training as an engineer, Roy was posted to H.M.S. Glorious, an aircraft carrier that was sank by gunfire in the North Sea on 8 June 1940; working in the engine rooms of the ship, he had no chance of survival.

Aunt Susan's husband, Jack Pearce, was a butcher and as a consequence we were never short of meat during the war years. Whenever I visited them at Manor Parsley on a Saturday, I always came home with enough beef to last more or less for a week, which naturally supplemented the meagre rations that we were officially allowed during the war. Looking back, we were obviously very privileged. My aunt was famous for her 'pudding skins', which in size were about the size of a Scottish haggis but very different in ingredients and taste. I suppose the nearest that one can find these days is what the butchers in Cornwall sell under the name of 'hog's pudding', which is also very different in taste to the pudding skins that my aunt made. Unfortunately the recipe died with her – why is it that one always realises with hindsight that such things should have been written down. The pudding skin consisted of minced pork mixed with herbs such as thyme etc., the whole being stuffed into the gut of a pig and tied at each end. It was then roasted in the oven or boiled – I much preferred the boiled variety, which was absolutely delicious when eaten cold; compared with hog's pudding it was much more solid and drier in consistency. As an early teenager, when rationing was still in force and it was illegal to kill an animal for food, I was cycling home one day from Trevissick Farm when halfway between Navvy Pit and Manor Parsley I saw my uncle and cousin Russell trying to coax a pig into an outbuilding adjacent to the road. When I spoke to them they said that they needed some help with the pig and in my innocence I readily agreed, not realising that the animal was about to be slaughtered. I found the whole business quite nerve wracking, especially when a vehicle passed along the road outside, causing everyone to stop and listen to see if someone was coming into the yard. The outcome of it all was that I ended up taking home a very large joint of pork, with which my mother was delighted!

Days on the farm

Leaving grammar school at the age of fourteen was, to some extent, a relief to my parents, as I was then able to supplement the family income. Within a few weeks I found myself working at Wheal Rose Farm, then run by Billy Phillips, a market gardener, under the watchful eye of his father, Alfred Phillips who, although retired, spent almost every day on the farm, given fine or dry weather. I got on well with Alfred Phillips but I had problems with his son Billy who always seemed to be picking on me (his father would tell me to do something, while Billy would tell me to do something else, so it seemed to be a question of too many bosses). I felt at the time that he did not like me although in later years I heard that he had the greatest respect for me with reference to my career as an entomologist. Billy was a big man who played rugby for Redruth and was awarded his cap for the Cornwall team; his brother Jack also played rugby but in early 1945 he was still in the army, having been called up for active service during World War II. Things came to a head in June 1945 when I told Billy, in no uncertain terms, what I thought of him and where to go, in spite of his size. As a consequence, I was sacked but very shortly afterwards Alfred Phillips approached my father and asked him to persuade me to come back. However, I refused as I had had enough of six months of market gardening that had involved cutting and packing cauliflower and cabbage in rain or drizzle day after day. Within a week I was employed at Trevissick Farm near Porthtowan – it was high summer, the work was mixed dairy and beef farming, with a large flock of sheep, pigs, poultry etc. and I soon realised, to my delight, that in such employment I was able to be very close to nature throughout the seasons. Moreover, with hindsight I now realise that the twelve years spent on the farm were to provide me with sound basic training for the practical tasks that many people have to deal with in later years, both in the home and in the garden.

Trevissick Farm lies to the north-east of Porthtowan, between the coast road and the semi wooded valley known as Park Shady that is situated to the west of Mt Hawke. To the south-west is Grambler Farm, which is separated from Trevissick by a rough lane or track that leads from the coast road to the upper engine house of Tywarnhayle mine. To the north-east of Trevissick is Banns Farm from which it is separated by, in my farming days, the unmade lane (a mile long) that leads

from the coast road to the farmhouse, farm cottage and barns that are situated on the brow of the hill above Park Shady. Each field had a name although now I can only remember a few of them (Alec Walters, whose mother was a Tremewan and therefore a distant relative of mine, was the occupant at Trevissick Farm and one of the nicest men that I have ever known. His only son Michael, by his first marriage to Alison, was also interested in natural history and, probably as a consequence, was one of my best friends at grammar school and being the same age we were in the same form. Tragically, he died at the age of 13 from what today would be a relatively simple medical condition to cure. I still remember attending his funeral together with the rest of the pupils in our form, all of us wearing our school uniforms, which brought tears to Alec's eyes when we arrived at the farm. We caught the bus from Redruth and getting off below Navvy Pit, I proudly showed my school friends the way to the farm via Park Shady. It took many years for Alec to come to terms with the death of his son and, as one of Michael's best friends, I was in some way a kind of replacement or vicariant when I came to work at Trevissick. Alec was a good all-round farmer who taught me everything he knew as far as farming was concerned. By the time I was in my late teens, I had acquired all of the many skills required on a farm, such as setting a plough and ploughing a field (first with a team of two shire horses, later with a Fordson tractor and Ransome trailer plough and eventually with a Ferguson tractor and hydraulic plough). I could also build or repair a Cornish hedge, build a corn mow and hayrick and had expertise in thatching (we used to grow a few acres of winter wheat every year in order to have wheaten straw for thatching the corn mows and hayricks). Moreover, I was responsible for the 100 or so sheep that were on the farm, which took up much of my time in early spring when the lambs were being born. I had to inspect the sheep every day of the year and of course during the summer had to make sure that none was infected with 'worm', i.e. maggots from blow-flies or greenbottles (Calliphoridae). The flies would lay their eggs on the wool of the sheep and on hatching the larvae fed on the surface of the skin. One very quickly learned to recognise a sheep that was infested with maggots, as its demeanour soon revealed that something was wrong. One dealt with the problem quite simply by applying a strong disinfectant (Jeyes Fluid) to the infected area. If for some reason an infected sheep had been overlooked for a day or so, the problem was greater as by then the maggots

would have very quickly started to burrow under the skin and into the flesh. When this happened the only cure was to pick them out one by one with a penknife after application of the disinfectant. I was also responsible for and did the shearing of the sheep, a backbreaking job that took place in June and one that ruined a pair of jeans, as these would absorb so much oil from the sheep's wool that it was impossible to clean them in those days; as a consequence they had to be thrown away.

Another responsibility that I had at Trevissick Farm was the control of pest species, especially Rooks and Jackdaws that in farming circles were known collectively as 'crows' and which would sometimes eat large quantities of grain when the sheaves of corn were standing in shocks. Using a 12-bore shotgun, the 'crows' were shot and the act of killing a couple of birds was usually sufficient to deter the rest from coming back. In addition, the dead birds were usually hung on a pole as a warning! Foxes (*Vulpes vulpes*) were also considered to be a pest species and were 'fair game' if seen wandering around by day, a common occurrence during the mating season in January. In reality foxes did little harm unless they got into a chickens' house, when they caused havoc by attacking and injuring a number of birds before taking one and leaving. In contrast, if a badger (*Meles meles*) succeeded in entering a chickens' house, it would usually take only one bird and leave the rest in peace! Snares were used in winter to catch and control rabbits (*Oryctolagus cuniculus*), although the professional trapper who covered the whole of St Agnes parish would come to the farm once a year, using gin traps that were terribly cruel and now, thankfully, are banned. The rabbits that I snared were sold to a local butcher at 2s. 6d. each, i.e. 12½p in our present decimal system. Thus I obtained £1.00 for every batch of eight rabbits, which certainly supplemented the meagre income that I earned as a farm worker (by the time I started working on the farm, it was considered incorrect to use the term 'farm labourer'!).

On one occasion I had set a lot of snares along the bottom of a field known as 'Big Downs', which lies near the coast road from which it was separated by a single row of bungalows and houses[25]. The following morning I went to inspect them and found that someone had stolen the rabbits that I had captured and also my snares.

[25] Nowadays there is a small housing estate at the bottom of this field that has been reduced to a third of its original size of 20 acres.

While I had no proof, the culprit was undoubtedly an old rogue called Cecil Johns (pronounced 'Ceecil' in the Cornish dialect), who earned a meagre living by doing odd jobs for people and, of course, by trapping rabbits. While I was within the boundary of Trevissick Farm, he obviously thought that I was 'poaching' in his territory and stealing my rabbits and snares was fair game. A bachelor all his life (I doubt if there was ever a woman that would have put up with him), Cecil was quite a character. He spent much of his time in the Victory Inn at Towan Cross, a hamlet just north of the entrance of the lane leading to Trevissick Farm and a mile or so north of Porthtowan. During the summer months, Cecil always arrived at the pub exactly at opening time, both at lunchtimes and in the evenings, and would always greet the landlord with 'half a pint in a pint glass'. The reason for this was that he could always 'spin a good yarn' and this and his Cornish dialect provided great entertainment to the tourists from 'upcountry', who supplied him with ale for the duration of the lunchtime or evening in order to keep him going. Towards the end of his life Cecil had no real home to live in and ended up in poverty sleeping under some sheets of galvanised iron erected amongst gorse bushes on the side of the lane leading to Tywarnhale mine; one winter's day he did not turn up at the Victory Inn and was found seriously ill with pneumonia from which he subsequently died.

In spite of a hard life, Cecil lived to a good age although this was almost curtailed quite suddenly when he received a full charge from a twelve-bore shotgun at fairly close range. As a young lad I witnessed the incident. Cecil, two local farmers, Jack Osborne (Forge Farm, Mawla) and Jack Barbary (Manor Parsley Farm), were hunting rabbits with ferrets and shotguns along a field hedge at Spar Downs. Jack Barbary was holding his twelve bore and standing on the hedge to cover the field, Jack Osborne and myself were in the road (actually a metalled country lane – in those days one could fire a gun along a public highway without any problem), while Cecil was amongst a wide area of brake between the hedge and the road, his purpose there to encourage any bolting rabbit out into the road. But the first rabbit to bolt did so in the field and Jack, whilst raising his gun to aim, accidentally discharged one of the barrels. Fortunately, the brambles, blackthorn and other vegetation deflected much of the shot, but Cecil was nevertheless hit by a sufficient amount in

the shoulder and neck to temporarily knock him out. We were only a few hundred metres from the farmhouse of Mount Pleasant Farm and the farmer, Will Jenkin, who was also present, ran and immediately telephoned for an ambulance and the police. Meanwhile, Cecil was dragged into the road and made as comfortable as possible and, in his half-conscious and seemingly delirious state, he kept asking for a drink of whisky! By this time Jack Barbary was in tears and when the police arrived he told them that he would never touch a gun again, a promise that he kept for the rest of his life. No charges were made as the police could see that it had obviously been an accident, while after a few days convalescence in the local hospital, Cecil was discharged fit and well, having enjoyed the attention and regular meals that he had received even though he had undoubtedly missed his beer!

In addition to running Mount Pleasant Farm, Will Jenkin had a milk round in Porthtowan and the surrounding district, delivering the milk with an old van that quite probably was far from roadworthy. While driving his equally ramshackle car, he could always be seen leaning against the door and almost out of the window, so much so that the springs on that side of the driver's seat were completely finished.

Prior to the partial ban on fox hunting in 2004, one could hunt foxes freely, either in the traditional way with foxhounds and riders on horses, or on foot with guns and a pack of beagles. While I supported hunting in my younger days, I now consider it cruel and unnecessary and if there is a need to keep foxes under control, then shooting them with a shotgun loaded with an appropriate cartridge, or with a rifle, is all that is required. While some that participate in such activities are quite open and freely admit that they enjoy hunting with hounds purely as a sport, there are others who maintain that they do it to control foxes that, according to them, attack young lambs during the lambing season. While a fox is a scavenger and will eat dead rabbits and even the placenta after a lamb or lambs are born, in my farming days the attacking of lambs by foxes was unheard of. While it is possible that foxes have changed their behaviour during the past 50 years or so, one cannot but think that people who hunt with hounds use this as an excuse to justify their actions. Moreover, the number of foxes that were killed every year by this means was minimal and made little inroad into the population. A better means of control was hunting with beagles and shotguns and using suitable cartridges. With reference to

hunting with hounds, there is an old idiom that reads 'What a beautiful day – let's go out and kill something.'

While I no longer agree with hunting foxes, I maintain that the ban should never have been imposed in the first place and that in a democratic society country folk should have the right to decide for themselves. The problem nowadays seems to be the influx of people from the towns and cities to the countryside – having been there for less than a year many of these townies seem to think they know everything there is to know about the countryside and very rapidly begin to tell the local inhabitants what they should and should not do. I have no objection to anyone coming to Cornwall to live, as many non-Cornish people that I know have made and continue to make a real and significant contribution to the county; however, those that do choose to live in Cornwall should respect the Cornish people and ways and customs of the countryside.

Domestic dogs can be and still are a greater menace than foxes to livestock and some will certainly attack sheep if out of control and roaming the countryside in packs of two or more. During my farming days I often experienced such problems and on one occasion shot one of three dogs that were attacking the sheep, an act that I was perfectly within my right to do. In those days and even now a farmer can legally shoot a dog under such circumstances providing this is done when it is in the act of attacking a sheep. This also applies to poultry or any other livestock on a farm. In what was known as the 'Home Field' on Trevissick Farm, i.e. the field adjacent to the barns and near the farmhouse, we had probably 200 or more free-range White Sussex/Rhode Island Red cross hens that were kept for eggs. One morning just after I had finished milking the cows, I noticed that the whole of Home Field was almost completely white, as if a snow shower had covered this particular field. I quickly realised that something was wrong and that the 'snow' was in fact feathers and then saw a large Irish terrier causing havoc amongst the hens and still attacking them. Getting the shotgun, I dropped the dog with both barrels. Alec then telephoned the local police, a one-man show who arrived within half an hour or so in an old Morris Minor from the village of St Agnes a couple or so miles away. He questioned me and I had to sign a written statement, but that was the end of the matter (he was a good country policeman and was obviously

on the farmers' side). The destruction that this dog had caused was unbelievable – there were dead and dying hens everywhere and very few had escaped injury. Those that had been attacked but were still alive were so badly maimed that they had to be put down and none could be used for meat as all were badly bruised. The dog wore a collar on which were the name and address of the owner, who turned out to be an old lady from St Agnes. Naturally she was very upset over the death of her pet and the circumstances under which it had died, but she offered to pay compensation to Alec and even sent half a crown (2s 6d) for me to bury the dog, as she was too emotional to see it. I must say that I felt somewhat guilty at having killed her pet, but there had been no other option. The problem for Alec was that the poultry were young laying hens and while he received their market value in compensation, it did not allow for the loss of the eggs that they would have produced over the following two years or so.

Rabbits have always been a pest species and before the advent of myxomatosis they occurred in profusion almost everywhere. As a consequence, farmers hired a professional trapper once a year in winter to catch the rabbits, using gin traps that, thankfully, are banned these days. Using gin traps was such a cruel way of catching rabbits and when one was caught by this method, usually by the foreleg(s), its squeals could be heard for distances of up to two kilometres or so on a calm night. It is not difficult to imagine the suffering that was caused, as the legs were usually broken and the poor creatures had to endure the pain from their injuries for the whole of the night until mercifully killed by the trapper the following morning.

The local trapper was a character by the name of Jethroe Greet who earned his living by catching rabbits and other pest species, such as foxes, on most of the farms throughout St Agnes parish. Jethroe was a dour little man who spoke with a strong Cornish dialect peculiar to the area and wore a cap, breeches, brown boots and leather leggings. As far as I can recollect, he was always ready to make an extra shilling whenever the chance arose and where money was concerned, I suppose he could have been described in the local dialect as being 'as tight as a gin', perhaps an appropriate pun because of his profession! He had around 250–300 gin traps and these were brought to the farm by a horse and cart, after which he came every morning on a bicycle to pick up the trapped rabbits and reset his traps during the

time he was there, usually three weeks to a month. His tools were quite simple: a bucket, a sieve and a small tool with a hammer head on one end to knock the metal stake of the trap into the ground and a blade-like end on the other that was specially designed to cut out a place where the trap was to be set; when setting the traps he wore leather kneepads to protect his breeches. Once a trap was set and in place just below the surface of the ground, it was covered with fine sieved soil that was carried in the bucket. The soil had to be sufficiently damp to prevent it from running under the pedal of the trap and as it was sprinkled over the trap and smoothed over by hand, a thin specially cut twig was placed under the pedal for safety reasons. If Jethroe was in a hurry, he occasionally dispensed with the safety twig, a practice that I took up myself until one of the traps went off accidentally and caught one of my fingers!

Jethroe had an immense knowledge of wildlife and country ways and I remember asking him on one occasion whether he could trap a badger for me, in those days not a protected species (in fact very little was protected apart from a few species of birds). His reply to my request was that he would do so, providing that I gave him 'a couple or three bob' for his trouble, i.e. two or three shillings (10p or 15p). I am now ashamed to say that I had made many attempts to catch this beautiful and intelligent animal with a gin trap, but had always failed. It seems that it is impossible to trap a badger in a gin, except by accident, and when such a trap was set in one of their runs (tracks), examination the following morning always showed that the trap had been set off without catching anything. The theory was that a badger always knew when and where a gin trap had been set in its run and, presumably detecting it by smell, it rolled on to the trap and set it off. This explanation is not as silly as it sounds. A badger has a thick layer of fat under its skin and it is not difficult to imagine that if this explanation were true, then the badger would escape with very little injury and no more than what it might receive during a squabble with one of its fellow creatures. The method that was used to catch a badger in those days was to set a wire snare that was strong enough to hold the animal, a method that was unknown to me at that time. Within a few days, Jethroe provided me with a large male weighing around 40 lbs that was exchanged for two shillings and which I skinned, preserving the pelt. He then let me into the secret of snaring

badgers, the snare being placed in one of their runs with the bottom of the loop at a certain height above the ground. After that I trapped a couple of animals, often by request as, for instance, by my zoology and botany lecturer at Cornwall College. I told him that he would have to skin the animal himself, which he did, preserving the pelt as a bedroom rug; he then boiled the carcase in potash to remove the flesh, as he wanted the skeleton as an exhibit during lectures on mammalian morphology. At his request I trapped a fox for the same purpose as well as providing a rabbit and a mole. At that time (1950) the Zoology and Botany Departments of Cornwall College were newly formed and Gordon Ince, the lecturer, was building up the laboratory with as much material as possible for the practical lectures and for dissection.

When I had reached my late teens I began to feel that I was in a rut but looking back I obviously did enjoy much of the time that I spent on the farm, especially the balmy summer days of hoeing turnips (Swedes) and harvesting the hay and corn. Of course, it is easy to forget the other side of the coin, such as getting soaked spending the whole day in driving south-westerly drizzle or rain while tending the sheep during lambing time, or having ones fingers numbed with the cold in winter when handling wet stone while repairing Cornish hedges, a task known as hedging. Cornish hedges are unique in that they are really banks of earth faced with stone. The face of a Cornish hedge is not built upright, as it would then very quickly fall down, especially in winter after a period of rain and frost. In order to prevent this, one has to introduce what is known as 'batter'. By this is meant that the face of the stones forming the rows up to half the height of the hedge slope gently inward, with the next few rows gradually straightening until the last two or so are vertical. There is an art to Cornish hedging: the biggest stones form the foundation row, those forming the remaining rows becoming progressively smaller, with the smallest in the last or top two rows. The so-called Cornish hedging that is done nowadays along newly built or improved roads in Cornwall is a poor imitation of those built in the old days. These new hedges are not much more than a half a metre or so across at the top and if a shire horse scratched its bottom against such a hedge it would fall over! Moreover, I have seen many fall down in recent years through lack of sufficient batter and the action of frost and rain.

There were two shire horses on Trevissick Farm: a black mare with a white blaze and socks whose name was 'Duchess' and who was the mother of a chestnut mare, also with a white blaze, whose name was 'Brenda', an unusual name for a horse. In my early days of farming, the corn[26] was cut with a binder that was pulled by this team of shire horses, but later, of course, a tractor was used. The binder automatically tied the corn into sheaves and these were stacked upright in groups that were known as shocks (these are called stooks in some parts of Britain); each shock consisted of anything from 8–12 sheaves, depending on the size of the latter. The shocks were left standing in the field until sufficiently dry when they were collected and kept in mows until the winter when threshing would take place; the grain was kept in one of the barns.

A few acres of winter wheat was grown, mainly to provide straw for thatching the corn mows and hayricks, as were a few acres of oats to feed the shire horses during the winter. However, most of the corn consisted of dredge corn that in reality was a mixture of oats and barley; dredge corn was used to feed the poultry, cattle and pigs, but for the last two animals it was rolled or crushed before being used. At the time I was on the farm we did not have a machine to roll the corn, so whenever necessary we took 5–6 cwt with the horse and cart to Porthtowan Farm that lies between the coast road and the cliffs and was then owned and farmed by two brothers, Will and Ewart Goyne. Will, who was the elder brother and a widower, had a daughter Nancy who looked after the house and did the domestic chores. Will looked after the livestock and crops and ran the business side of the farm whereas Ewart, a bachelor all his life, spent most of his time doing odd jobs or working in his carpenter's shop. While untrained as a carpenter, he was as good as any professional and, at Alec's request, he once made a horse-drawn cart and a wagon for harvesting corn, etc. Ewart was also a very good mechanic, again untrained. He once showed me a steam-powered model of a traction engine that he had made to scale, which used methylated spirit to heat the water to provide the steam. Much of the timber that he used for carpentry he obtained by beachcombing and on rough winter days when there was a north-westerly gale blowing in from the Atlantic, he would spend much of his time along the cliffs on the look out

[26] Not to be confused with maize, which was never grown in Cornwall on those days.

for any logs that might be floating in. When any logs did reach the shore, he and his brother would go down with the tractor at low tide to the beach at Porthtowan or Chapel Porth to haul them back to the farm. It was nothing new to see logs of mahogany and other tropical trees lying around and drying out.

Ewart hardly went anywhere away from the farm, not even to Truro on market days, leaving all of this to his brother. He had only been out of Cornwall once in his life and that was when he caught a train to Plymouth; having left the railway station he ventured into the city but spent only and hour or so there and very quickly caught the next train home. Although spending most of his time on the farm, it was quite remarkable how he knew all the local gossip and scandal, such as who had died recently, who was having an affair with someone's wife, etc., etc.!

There was an art in building a corn mow and if not done properly it would soon fall over! The local threshing machine was owned by Neddy Mewton, who lived at Mt Hawke and who also had a butcher's shop in the village. The threshing machine was originally pulled and worked by a traction engine that had the name 'Millennium King'. The steam engine was beautifully decorated in black and gold, as was the threshing machine in differently coloured paints, the cleaning and painting being done by Neddy during the summer months. Later, a tractor replaced the steam engine that, incidentally, is still extant, as it was acquired by Ian and Wendy Beard who used to exhibit it regularly at steam engine rallies throughout the West Country, such as, for example, the St Agnes Steam Engine Rally held every August at Chiverton. While the Beards no longer own the machine, having retired from such activities, the Millennium King can still be seen in beautiful condition and good working order at the annual West Country rallies.

Of course, the hay harvest always came before the corn harvest and the grass that had been deliberately left un-grazed was usually cut in June. One of the nostalgic and most beautiful smells of high summer is that of new-mown hay, so different from the stench of silage that is predominantly produced these days. Whilst working in London and living in Surrey, I remember watching a television adaptation of Laurie Lee's novel *Cider with Rosie* and the hay-making scenes immediately took me back to the hay harvest during my farming days. Before mechanisation, the newly mown grass was left to dry and then collected by hand with a tool known

as a pike; the hay was placed into round piles that were known as pooks[27] and the act of doing this was known as pooking. When sufficiently dry, the hay was collected and stored in mows or hayricks that were built in a corner of the field, or in an enclosure that was adjacent to the barns and known as a mowhay (pronounced 'mouwy').

In spite of what seemed to be an idyllic life on the farm, the salary was poor and hardly sufficient to live on, therefore it was impossible for me to visit such superb and well-known entomological localities as the New Forest in Hampshire or the chalk downs of southern England. Even if I had been able to afford such expeditions, it would have been impossible to take any leave during the summer months, i.e. from mid May to the end of September. Such a situation is unheard of now and I believe that farm workers are entitled by law to take their holidays whenever they so desire. Thus, as far as entomology was concerned, I had to make the best of it. As I have mentioned earlier, I was very keen on the Microlepidoptera, influenced strongly by Guy Adkin. During the day, many of these little moths can be disturbed from herbaceous vegetation, or found resting on or flying around bushes; as a consequence, I almost always carried a net and glass tubes wherever I went on the farm. Alec, who obviously fully understood my passion for entomology, tolerated such behaviour although occasionally he would make some disapproving comment, albeit as a tease. It is for certain that some of the farmers that I knew would certainly not have approved – in fact they would not have allowed it at all. Having had our crowst[28], consisting of a cup of tea and cake or saffron buns, after the morning milking was done, our 'dinner' breaks were between noon and one o'clock. When the weather was fine, I would always eat my 'dinner' (sandwiches or a pasty) hurriedly so that I could spend half an hour or so in the valley (Park Shady) below the farm buildings. It is unbelievable how quickly the time passed when chasing butterflies or looking for micro moths, and it was always with great reluctance that I returned to my work, quite often a little late in doing so!

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[27] The origin of the word 'pook' is unclear, but it seems to be part of the Cornish dialect (Phillipps, 1993: 46) and is used in Cornwall for the English word 'haycock'.

[28] According to Nance (2003: 31), 'crowst' is a word listed in Origo Mundi (1901); meaning 'noon-meat', 'meal taken to work-place' or 'a picnic lunch', it is still used in the dialect in west Cornwall. In north Cornwall crowst is substituted by 'crib'.

In those days Park Shady was extremely good for butterflies and over the years I recorded 35 different species from there (Smith, 1997: 181–215); of these, 28 were possibly breeding in the valley. The most significant of these were Pearl-bordered Fritillary (*Boloria euphrosyne*) and Marsh Fritillary (*Eurodryas aurinia*).

On one occasion I saw what I believed to be a wild goose feeding in Front Field. Getting the twelve bore I stalked it for some time but eventually it flew down into Park Shady and eventually landed in the meadow below the sycamore wood that is situated towards the bottom of Front Field. This enabled me to get close enough to the goose, which I dropped with one shot from the twelve bore. I proudly returned to the farmyard showing off the spoils of my hunt.

My fellow farm workers, most of whom were good lads, very quickly became interested in entomology and, always carrying some glass tubes with them, constantly presented me with their captures. One could usually see the disappointment on their faces if I would say that a specimen was common and not wanted for the collection and eventually I began to say 'it is common but I'll take it'. Subsequently, but unknown to them, I sometimes released the specimens! Of course, occasionally they did find something that was scarce or even rare and when this occurred their exhilaration was very evident. Most of my fellow workers would persuade me to set a few butterflies or showy moths and pin them into a suitable box for them to take home, but in spite of explaining how important it was to keep them dry and free from booklice (Psocoptera) and mould (an almost impossible situation when one lived in a Cornish cottage at a time when dehumidifiers were unheard of), within a few months the specimens were either ruined by mould or eaten by these insects, so that they had to be renewed.

The Cornish pasty

The Cornish pasty was mentioned above and the origin of the name is perhaps ambiguous. The word 'pasty', pronounced with a short 'a', is listed by Nance (2003: 126) as a survival from the Cornish dialect, but he also cites 'pastee', an alternative spelling from Middle English. The pasty is supposed to have originated in the old mining days and is so designed to allow it to be carried safely without falling to bits. With reference to the version 'pastee', there is an anecdote in the Cornish dia-

lect that might explain the origin of the word, but I have little doubt that such a tale is apocryphal. The wife of a certain Cornish tin miner always brought his crowst to the mine each day. On one occasion she arrived at the mine and, on shouting down the shaft 'Jethroe, yer crowst is ere', Jethroe replied 'Throw en down, Lizzie'. The wife dropped the pasty down the shaft and after a minute or so had elapsed, Jethroe shouted 'Where is ee? I can't see en', to which Lizzie replied 'Ees just gone past e'.

Nowadays there are many types of pasties, depending on their contents. It would seem that the basic version consisted of beef, potato, 'turnip' (Swedee) and onion, but no doubt the recipe varied from one district to another in Cornwall. The only type of pasty that I enjoy personally is one consisting of chopped beef (skirt), potato and onion, all of which is evenly spread throughout, first the potato, then the onion followed by the beef as the top layer; this recipe was just as my mother used and which my wife continues to make today. The joining of the pastry along the side is known as crimping and although at first difficult to master, once learnt it is never forgotten. There are now many commercially made varieties of pasty, unheard of in my younger days, containing pork, chicken or kidney as alternatives to beef, or cheese for the vegetarians! Moreover, whatever the meat that is used, this is usually minced and placed in the centre of the pasty. Such so-called pasties can be found in the bakers' shops everywhere in Cornwall, but they are mass-produced and, with few exceptions, are poor substitutes and not worthy of the name pasty; yet they seem to be eaten with relish by the unwitting tourists who flock down to Cornwall during the holiday season! I refuse to eat a commercially made pasty with the exception of those sold at Anne's pasty shop at the Lizard; here they are handmade in the traditional manner in full view at the back of the shop and are highly recommended.

Fig. 65. ***Sylvia's Cornish pasty - unbeatable!*** Another good reason for Axel Hofmann to come to Cornwall (Truro, 1998). *Photo*: W. G. Tremewan.

Derelict mines

It is not my intention to describe the many derelict mines that can be found in west Cornwall, as authoritative works on the subject can be obtained from any bookshop; however, some comment on those in the vicinity of Trevissick Farm might be of interest to the reader. If one takes the road from Wheal Rose to Porthtowan, having passed through Manor Parsley, one reaches an area known as Navvy Pit, the latter situated adjacent to the junction that leads to Mt Hawke. Navvy Pit was so named because there was a large concentration of copper ore near to the surface of the ground and, as a consequence, it was more profitable to extract it by opencast mining, which was done by men known as navvies (probably Irish immigrants). It was a very large pit with water at the bottom, being approximately unfortunately, it is no longer there, having been filled with unwanted ballast by Cornwall County Council as a consequence of road building and improvements. So much for our Cornish heritage! As one proceeds downhill from Navvy Pit towards Porthtowan, a beautiful engine house known as Wheal Ellen can be seen on the left, opposite the bend in the road and situated on the floor of the valley just after the turning into Wheal Bassett Farm and just above where the Manor Parsley and Park Shady streams converge; this building is quite well preserved and has a castellated top to its chimney, being one of only two such stacks in Cornwall. Across the road a hundred or so metres beyond and just pass the right-hand track that leads into the valley known as Park Shady (already mentioned above) are the remains of mine buildings that form part of the old Tywarnhale mine complex. On the top of the hill above, one can see the Tywarnhale engine house and further down the road is what is left of another on the side of the hill just above the buildings[29] that were used every spring by final-year students from the Royal School of Mines in London. The surveying undertaken by the students, both above and underground, culminated in their practical and final examinations. The area they surveyed took in the west side of Park Shady valley and part of Trevissick Farm above, then extended to the Tywarnhale mining complex. When working at Trevissick I got to know quite well a couple of the lecturers who came down with the students every Easter, and also a man who preceded them to clear the ground around the trig points that

[29] These buildings have now been renovated and are used by a biotech company.


Figs 66, 67. ***Impressive derelict mines in Cornwall.*** *Photos*: W. G. Tremewan (archive A. Hofmann).

had been covered by vegetation during the previous summer. He was very much a Cockney who lived in Battersea and who omitted the double 't' when pronouncing the name. He had been coming down to Cornwall every year since he was a young man and it was obvious that he liked to consider himself a countryman, in spite of his accent; he always wore breeches and leggings in order to look the part.

Almost opposite the buildings that the Royal School of Mines used to own is a small quarry, stone from which was presumably used to build them. When I was a young boy, strange noises could be heard emanating from this quarry at night, so much so that a rumour began to circulate among the locals that a prehistoric monster might be lurking there, having come up from the depths of the open mine shafts that are dotted all around (if one thinks about it, such a suggestion now seems ridiculous, but one should bear in mind that there were very few cars around, so that many

people would have to walk alone at night along the road adjacent to the stream across which lies the quarry). One dark night my cousin Russell Pearce, a teenager at the time, persuaded my father and I to accompany him to the quarry – there was no wind and the silence was ominous. Accordingly, we set off from Manor Parsley a mile or so up the valley, Russell armed with a double-barrelled, 12 bore shotgun, my father with a torch. On approaching the quarry, the strange hissing sounds could be clearly heard in the still night air and when we crossed the stream they became progressively louder. Shot gun at the ready, my cousin hesitated, as did I, but my father kept on going and on reaching the quarry, he searched the rock face with the torch, only to reveal a Barn Owl, the 'monster' responsible for the sounds! I never discovered whether my father knew or guessed that it was a Barn Owl, or whether he was particularly brave.

The precipitous sides of Navvy Pit were home to a colony of Jackdaws. In April these delightful and intelligent birds with their beautiful pale blue eyes and chattering calls nested in abandoned rabbit holes near the top of the pit. Jackdaws normally nest in holes and crevices in cliffs and disused quarries, in derelict buildings such as the old engine houses, or even in chimneys of dwellings. When nesting in the rabbit holes at Navvy Pit, however, they constructed a wall or barrier of woven twigs around the entrance to the hole, laying their eggs on a platform or pad of wool, hair and grass, which was situated at arm's length down the hole. As a young lad my school friends (Dennis Barbary, Michael Walters, Roger Wonnacot) and I risked life and limb climbing around the sides of the pit to collect the eggs. Apart from the risk of falling, another danger and one that we fortuitously became aware of in time was the presence of Adders (*Vipera berus*) in the area; occasionally one might be found in a nest, curled up beside the eggs, presumably having entered the hole in search of young chicks. We eventually circumvented this danger by inspecting each nest with a torch before putting our hand inside – one dreads to think what might have happened had any of us been bitten. The beautiful eggs of a Jackdaw are pale greenish blue, variably marked with spots and blotches of dark brown, grey and black.

The accident

Whilst on a visit to the New Forest in May 1952, Sylvia and I met Alfred E. Burras, a keen all-round naturalist who was especially interested in Macrolepidoptera and birds' eggs. By profession, Alfred Burras was a linguist and classical scholar who taught English, French, ancient Greek and Latin at the Boys Secondary School, Portsmouth (Pitman, Tremewan & de Worms, 1964: 61–62). As a naturalist he was equally capable of stuffing and mounting a bird as he was at blowing an egg or setting a butterfly or moth. He was already in his seventies when we met him and he was a delightful character fond of recounting events, funny or otherwise, that had occurred during his long and colourful life. Burras had known the New Forest for much of his life and some of his recollections on entomology and especially the abundance of butterflies there filled me with awe. He was privileged to know the New Forest at its best when it was quite normal to observe as many as thirty or more Silver-washed Fritillary butterflies (*Argynnis paphia*) nectaring at the flowers of a single bramble bush. It is indeed a tragedy that his knowledge of natural history was never placed on record. Burras had a fine collection of butterflies and macro-moths from Britain and France (mainly the western Alpes and the Hautes Pyrénées). He also had a large collection of birds' eggs from Britain and France, consisting of clutches beautifully arranged with full data in special egg cabinets that were available in those days. He had a special technique in finding a nest by sitting quietly and watching the activities of a bird. I remember on one occasion when we were visiting him near the village of Lover on the northern edge of the New Forest, where he lived in retirement, he suddenly appeared with a nest of the Dartford Warbler (*Sylvia undata*) containing a clutch of five eggs. Nowadays, naturalists would look upon such action with contempt, but this was acceptable in those days. I had already stopped collecting birds' eggs some ten years or more before, but seeing Burras' collection brought back memories of the past and stimulated me so much that I decided to begin again. With hindsight, such a decision was naïve and foolhardy, as there was already legislation in place that prohibited the collection of the eggs of some species of birds, while it was only a matter of time when all birds, apart from pest species, would be protected. Moreover, eventually it would almost cost me my life! In May 1953, my wife and I, together with one of the workers (Gerald Lobb) from Trevissick Farm, were on the North Cliffs where

Figs 68–71. ***Happy times in black and white (I)***. With the family on a search for burnet moths in the 1950's. 68, Sylvia Tremewan (New Forest, Hampshire; early 1950s). 69, Gerry at Gwithian (Cornwall, early 1950's). 70, (left to right) Malcolm Tremewan, Margaret Truscott (nee Tremewan), Sylvia Tremewan, Gerry; end 1950's). 71, Gerry at Reskajeage Downs (Cornwall, early 1950's). *Photos*: W. G. Tremewan (archive M. Tremewan).

Figs 72–74. ***Happy times in black and white (II)***. 72, Sylvia at Gwithian (Cornwall, early 1950s). 73, Gerry at the British Museum (late 1950s). 74, near New Forest (Hampshire) with Alfred E. Burras (left), Malcolm (mid) and Sylvia Tremewan (early 1960s). 75, Vera Molesworth Muspratt (1887–1962) with Ivy Classey (right). *Photos*: W. G. Tremewan (archive M. Tremewan), E. Classey (archive Natural History Museum, London; Fig. 75).

Fig. 75. ***Gerry and Sylvia*** at Roundwood Quay (Cornwall, Truro, River Fal, ca. mid 1960s). *Photo*: W. G. Tremewan (archive M. Tremewan).

we had already collected a fine series of eggs of the Razorbill (*Alca torda*) on an offshore island at Reskajeage. Returning to the mainland, Gerald and I spotted a nest of a Herring Gull and in attempting to reach it I got into difficulties. The nest was situated on a cliff above a very steep grassy slope that ended in a drop of some 30–40 metres to the rocky shore below. Having slipped from the cliff face, I slid at great speed down the grassy slope and over the edge to land amongst the boulders below. Fortunately I was in a sitting position while sliding down the slope and when I landed, otherwise I would not be relating this tale now. On impact, my head went forward and hit my left thigh, resulting in a broken jaw and muscular damage to my leg. I was momentarily knocked out and on coming around I at first thought that it was a bad dream until I realised that it was in fact a reality; covered in blood I can remember picking out the broken teeth that prevented me from closing my mouth properly. Sylvia, my poor wife of two months, witnessed the whole event and I can still hear her screams as I was falling through space. Incidentally, it is incredible how fast one falls, an experience that is enjoyed by sky jumpers when they are in free fall. It was with great difficulty that Sylvia and our companion Gerald got me to the top of the 100-metre cliff via a narrow footpath. Gerald went to the coast road and the first passing car that he stopped miraculously contained a doctor and a nurse who were on their way to work; the nurse immediately went to the nearest house and

telephoned for an ambulance and whilst waiting for its arrival the doctor made me comfortable by wrapping me in a blanket and administering a large dose of brandy. I will not go into further detail over this event except to say that it took me two months to recover and it ended my egg collecting for good. Writing this at the age of 75, I suffer constant pain from worn facetal joints in the lumber region and from an osteo-arthritic hip[30], undoubtedly legacies from that accident.

The British Museum (Natural History)

My ambition had always been to become involved in natural history, preferably entomology, as a profession. Moreover, while I had the greatest respect for my fellow farm workers (most of whom were good lads), there were times when I yearned for intellectual conversation, bearing in mind that I had already met such entomologists as Guy Adkin, Vera Muspratt and John Heath. However, I was not able to take the necessary steps to fulfil this ambition until the age of twenty when, for the first time in Cornwall, it was possible to receive tuition in Zoology and Botany, as described above.

When I began my career at the museum, a junior member of staff usually started as a Scientific Assistant in what was known as the Setting Room (long since abandoned) where he or she received basic training in entomology, including the preparation and labelling of specimens for the collections. Of course I was already well experienced in such techniques, having formed a small collection of mainly Cornish butterflies and moths before I had left for London. Within three months of joining the staff I was transferred to the Microlepidoptera Section as an assistant to John D. Bradley with whom I worked until 1965. During this period I had been promoted twice, at first to Assistant Experimental Officer in an open competition, then on merit to Experimental Officer and Senior Scientific Officer. In 1965 I was transferred at my own request to a newly formed data processing section under the direction of R. J. (Reg) Collins, a Devonian from Plymouth, my duties being to assist with the indexing of the whole of the Insecta! In those days there were no computers and everything was recorded on 5´´ × 3´´ index cards! In spite of my

[30] now replaced

new duties I was still able to study the Microlepidoptera and co-authored a number of publications on this group. In 1983 I was invited to assist with the editing of the departmental publications under the direction of David R. Ragge and eventually became Departmental Scientific Editor, a post that I held until my retirement in January 1991. During this period I was promoted to Principal Scientific Officer and, looking back, it was undoubtedly the most enjoyable time of my career – I was directly responsible to the head of the department and when I had no editorial duties my time was my own, which I spent on research, usually on burnet moths!

Before concluding this brief autobiography, I should mention that one of my colleagues at the museum was Alan H. Hayes, a lepidopterist especially interested in hawk moths (Sphingidae) and who was very successful in breeding cage birds as a hobby. Alan loved Cornwall and everything Cornish and with his wife Jenny and their two children spent his annual holidays almost every year at Crantock Bay Hotel in the village of Crantock (south of Newquay) until his tragic and untimely death in March 1986. On one occasion he left a small newspaper cutting on my desk during my absence, no doubt thinking that the text was a terse description that aptly fitted my character. It reads as follows: 'He is a Cornishman with a dry humour, a slight burr and a noticeable objection to that waste-product of bulls which has such a low reputation among men of action.'

College, marriage and fatherhood

It was not until the early 1950s that I was able to study Zoology and Botany when these subjects were included in the curriculum of the then rapidly expanding Cornwall Technical College (now Cornwall College) located at Pool near Camborne. At the age of twenty I enrolled as a part-time student of these and other subjects and on obtaining O levels in French, English and Chemistry (University of London) and A levels in Zoology and Botany (University of Oxford) I was offered a post in 1957 as a Scientific Assistant (the bottom of the ladder) in the Department of Entomology at the British Museum (Natural History) (now the Natural History

Figs 76–79. ***Golden wedding announcement (30.i.2003) and pictures of Gerry's 80th birthday party*** with many close friends (Truro, 2.i.2011). *Photos*: A. Hofmann.

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announcemen

Telephone: 08457 43 33 43 Fax: 01872 243603
All calls charged at local rate Lines open Monday 8am-8pm Tuesday-Friday 8am-5
Deadline: Wednesday

Golden Wedding

GERRY AND SYLVIA TREMEWAN

MARCH 28th 1953

CONGRATULATIONS O
YOUR GOLDEN WEDDIN

With love from all your fami
and friends

77

78

MISSING November, ginger

79

WARMINGTON

Graduation

for helping him

76

Museum). Studying part time was very demanding, bearing in mind that I was obliged to work on the farm for five and half days a week (in those days it was a 47-hour week excluding one-hour break for lunch every day); I also had to work on Saturday afternoons and Sundays every three weekends or so on a rota, taking my turn to hand-milk the cows and check and feed the rest of the livestock. In order to receive tuition additional to that provided at evening classes, I eventually worked on Saturday afternoons during term time so that I could take Wednesday afternoons in lieu. On Wednesdays the afternoon sessions began at 13.00 h and leaving Trevissick Farm at midday I had to cycle to my home at Wheal Rose, wash and change, grab a hurried bite to eat, then cycle to Pool, always arriving on time. On reflection this now seems physically impossible, but somehow I managed it! On 28 March 1953 I married Sylvia Mary (née Laity), so this added to my responsibilities. However, Sylvia was understanding and supportive and tolerated with an occasional grumble my always having my head in a book. Our son Malcolm Alfred was born on 11 April 1956.

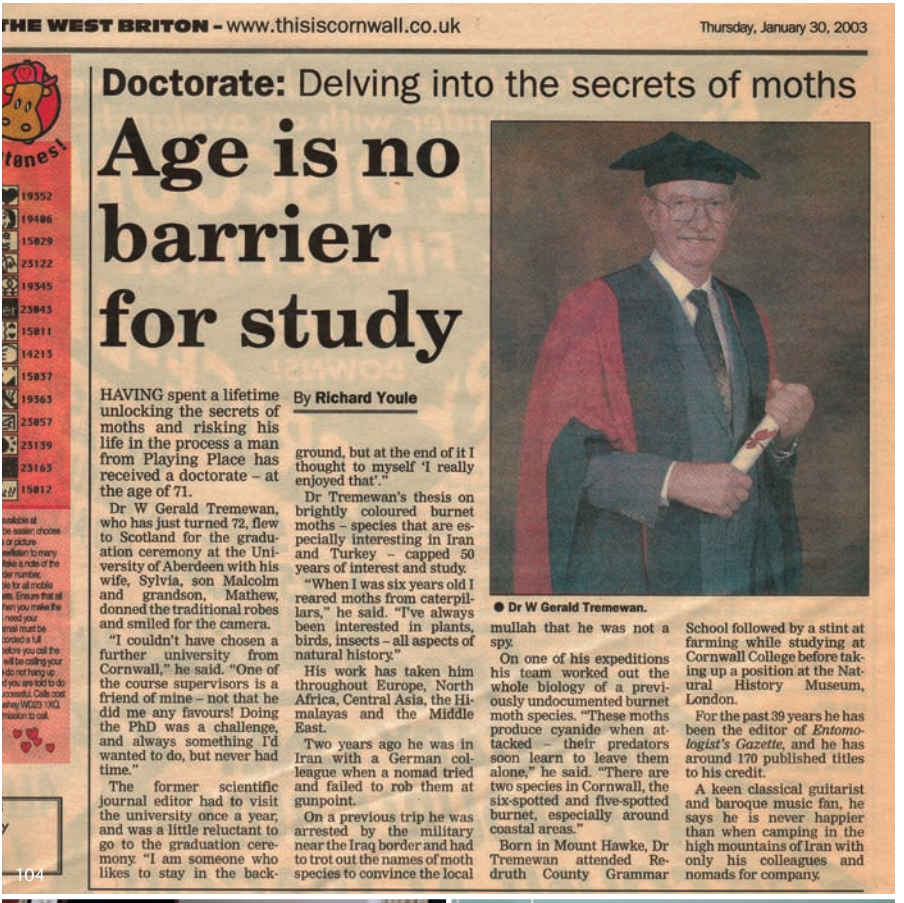
On meeting Norman Riley at the British Museum (Natural History) in autumn 1956 and telling him that I had just acquired my A levels in Zoology and Botany, he asked me whether I would be interested in obtaining employment at the museum, warning me that the grade would be that of an assistant at the very bottom of the ladder. Naturally I was delighted and on my saying yes, Riley immediately arranged by telephone for me to see the museum secretary, a man by the name of Woodisse. Riley took me to a room located on the first floor at the back of the main hall, knocked on the door and left. A squeaky voice said come in and on entering the rather large room all that I could see was a very large desk over which this little man was huddled. He was very friendly and immediately put my mind at ease, asking me about my work on the farm, how much I was earning and what academic qualifications I had. I suppose the interview lasted for about half an hour and he told me that should I be offered a post as an assistant, I could not expect a salary of more than £1000 per annum. I replied that this would be acceptable and that it would be £300 more than what I was earning on the farm, not fully realising of course that the cost of living in the south-east of England was higher than that in Cornwall.

Figs 80–87. ***Entomological companions who passed away before Gerry***. 80, Burchard Alberti (1898–1988) at Rosdorf (Germany: 20.iv.1984). 81, Hugo Reiss (1890–1974) on the Schwäbische Alb (Germany: Schelklingen, 31.vii.1969). 82, Edward 'Ted' Wiltshire (1910–2004). 83, Lt Col. W.B.L. 'Bill' Manley (1900-1985) to him and his wife Gerry dedicated two of his earliest taxa from Spain: *Zygaena occitanica manleyi* Tremewan, 1961 and *Z. fausta margheritae* Tremewan, 1961. 84, Lionel George Higgins (1891-1985). 85, with Philip Battenfeld (1904–1993) in the High Atlas (Morocco: Jebel Oukaimeden, 26.vii.1985). 86, Kenneth Guichard (1914–2002; Oman, 1950). 87, Hayk Mirzayans (1920–1999) and Clas M. Naumann (1939–2004) in Tehran (Iran: Evin, vii.1997). *Photos*: G. Tarmann (80), W. G. Tremewan (archive A. Hofmann).

Figs 88–92. ***With colleagues and friends (I)***. 88, Gerry and Günter Reiss (Germany: Stuttgart, v.1981). 89, Fidel Fernandez-Rubio (Spain: Moscardon vic., 9.viii.1995). 90, Gerry between Günter Ebert and Ebrahim Ebrahimi (Iran: Tehran, 22.vii.2003). 91, with Kostya Efetov in the Italian Alps (6.ix.2000). 92, with Louis Faillie (left) and Marc Nicolle (France: La Flèche, 6.vi.1998). *Photos*: A. Hofmann (88, 90), T. Faillie (92), G. Tarmann (91), W. G. Tremewan (89).

Figs 93–98. ***With colleagues and friends (II)***. 93, 94 at the British Museum (4.iii.2009); 93, with John Tennent; 94, with Dick Vane-Wright. 95, Mark Shaw (mid) between John Turner and Gerry at the Verral Supper (5.iii.2009). 96, at Axel Hofmann's home in Breisach with Tabassom and Kusha Hofmann (blonde) and Anahita Najafi (15.xi.2011). 97, Gerhard Tarmann (under knit cap) and Joe Buchmann (Isle of Mull, 20.ix.2014). 98. Bernard Mollet and Gerry (with empty glasses) and Mitko Subchev (left) and Teodora Toshova (Turkey: Antakya, 9.v.2010). *Photos*: A. Hofmann.

Figs 99–103. ***Time of intensive cooperation with Clas M. Naumann.*** Over a period of nearly twenty years (1980–1999) Gerry and Clas produced a number of important publications. 99, 100, Bielefeld, spring 1980, with the Naumann twins, Roxana and Alexander; 101, Bonn, early 1990ies, with Axel Hofmann in Clas' cabinet. 102, Clas Naumann in Gerry's cabinet in Truro (mid 1990's). 103, Entomologists (Kostya Efetov, Storai Naumann, Gerry, Clas Naumann, Eric Drouet, Louis Faillie, Jean-Marie Desse) at the Naumann home in Bonn entertained by Storai Naumann's famous Afghan cuisine. *Photos*: archive A. Hofmann.



THE WEST BRITON – www.thisiscornwall.co.uk Thursday, January 30, 2003

Doctorate: Delving into the secrets of moths

Age is no barrier for study

By Richard Youle

HAVING spent a lifetime unlocking the secrets of moths and risking his life in the process a man from Playing Place has received a doctorate – at the age of 71.

Dr W Gerald Tremewan, who has just turned 72, flew to Scotland for the graduation ceremony at the University of Aberdeen with his wife, Sylvia, son Malcolm and grandson, Mathew, donned the traditional robes and smiled for the camera.

"I couldn't have chosen a further university from Cornwall," he said. "One of the course supervisors is a friend of mine – not that he did me any favours! Doing the PhD was a challenge, and always something I'd wanted to do, but never had time."

The former scientific journal editor had to visit the university once a year, and was a little reluctant to go to the graduation ceremony. "I am someone who likes to stay in the background, but at the end of it I thought to myself 'I really enjoyed that'."

Dr Tremewan's thesis on brightly coloured burnet moths – species that are especially interesting in Iran and Turkey – capped 50 years of interest and study.

"When I was six years old I reared moths from caterpillars," he said. "I've always been interested in plants, birds, insects – all aspects of natural history."

His work has taken him throughout Europe, North Africa, Central Asia, the Himalayas and the Middle East.

Two years ago he was in Iran with a German colleague when a nomad tried and failed to rob them at gunpoint.

On a previous trip he was arrested by the military near the Iraq border and had to trot out the names of moth species to convince the local mullah that he was not a spy.

On one of his expeditions his team worked out the whole biology of a previously undocumented burnet moth species. "These moths produce cyanide when attacked – their predators soon learn to leave them alone," he said. "There are two species in Cornwall, the six-spotted and five-spotted burnet, especially around coastal areas."

Born in Mount Hawke, Dr Tremewan attended Redruth County Grammar School followed by a stint at farming while studying at Cornwall College before taking up a position at the Natural History Museum, London.

For the past 39 years he has been the editor of *Entomologist's Gazette*, and he has around 170 published titles to his credit.

A keen classical guitarist and baroque music fan, he says he is never happier than when camping in the high mountains of Iran with only his colleagues and nomads for company.

● Dr W Gerald Tremewan.

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Figs 104–106. ***Science, music and travels*** **- important aspects in Gerry Tremewan's live.** 104, article in The West Briton about Gerry's graduation ceremony in Aberdeen (30.i.2003). Note the last sentence in the journal! 105, Gerry on guitar with Esther Sattler, his friend Klaus' daughter, on ukulele (Richmond, ca. 1987). 106, on tour in Pakistan (vii.1982). *Photos*: A. Hofmann, Edith Sattler (105), C. M. Naumann (106) (archive A. Hofmann).

Figs 107, 108. ***"....never happier than when camping in the high mountains of Iran..."*** (Golestan, Shah-Kuh, vii.1995). *Photo*: C. M. Naumann (archive A. Hofmann).

On God and religion

I suppose that one might argue that I come from a religious background in that my paternal grandfather (Alfred Tremewan) was a devout Christian as was his daughter (my father's sister) Aunt Susan who prayed on her knees beside her bedside every night before going to sleep. She also attended Mt Hawke Methodist Chapel every Sunday and was a true Christian in every sense of the word, always ready to help others whenever possible. In contrast my father never attended any place of worship except for weddings and funerals. As a child my sister and I attended afternoon Sunday School at Scorrier Methodist Chapel and occasionally also the morning and evening services. In those days the chapel was run predominantly by two farming families, the Roddas (North Downs Farm) and the Williams (Wheal Rose Farm) and I often called in at the latter whence I went to the chapel……

[*The continuous manuscript by W. G. Tremewan ended here*]

W. G. Tremewan

Expeditions

Iran, Reshteh-ye Shah-kuh (1998)

On 7 July, Clas M. Naumann, our driver Ali Rezah and I left Karaj midmorning and drove over the Alborz Mountains to the Caspian Plain, camping that night in the forest to the east of Gorgan. Christoph (1872: 208, 209) relates how, in the same forest, his horses broke their tethers when they were frightened by Caspian Tigers (now unfortunately extinct), while one of the horses was killed when a tree fell on the poor animal. Although our night was less adventurous it was nevertheless very uncomfortable because of the humidity, the constant noise of heavy lorries on the Asian highway and the mosquitoes, the last somehow finding their way into our tent. Moreover, my air mattress had been punctured (by an entomological pin as we found out later) so that when I awoke in the morning (there was no air left in it!) The following morning we visited the local office of the 'conservation authority' where we were warmly welcomed by the deputy officer Mr Ghaemi

Figs 109–112. ***On tours with Clas M. Naumann (I).*** 109, 110, Shah-Kuh (Iran: Golestan, Kuh-e Gow-Kuhshan, 2,900–3,200 m, 19.vii.1995); 109, with local rangers; 110, Gerry between polsters of *Onobrychis cornuta* in the *Zygaena ecki* habitat. 111, with Vadim Zolotuhin (sitting) and Russian friends at the Middle Volga (Russia: Ul'janowsk obl., Ryabino vic., 200 m, 13.vii.1996). 112, near the type-locality of *Z. alpherakyi* (Russia: Dagestan, Pereval Kurush, 3,000 m, 20,vii.1996). *Photos*: C. M. Naumann (archive A. Hofmann).

Fig. 113. ***On tours with Clas M. Naumann (II)***. Searching for *Zygaena escalerai* at Kuh-e Dena (Iran: Yasuj vic., 1.vii.1995). *Photos*: C. M. Naumann (archive A. Hofmann).

who arranged for us to be taken to Shah-kuh by one of the official jeeps. On this occasion we camped near a cheshmeh (spring) situated above the village of Shah-kuh Pain and more or less central to the Shah-kuh range. We set up our tent above and on the edge of cultivated ground with corn and potato fields and were warmly welcomed by the local farmer who supplied us with chai (tea), home-made bread and cheese – the last was delicious, white and very mild, in fact so mild that it had just a faint taste of Cornish cream!

One evening after supper, I climbed alone to the top of the hill above our campsite and watched the sun go down like a yellow-orange ball over the Gorgan Mountains. The heat of the day had gone, the air was still and the only sounds that I could hear were the churr of a Nightjar, the call of a Caspian Snow Cock in the crags above, the chirping of a Black Wheatear that was watching me from its perch on a boulder nearby and the wild shout of a shepherd from high up on the slopes; with only myself for company I felt at ease with the world – moments like this are treasured and never forgotten.

Figs 114–118. ***On tours in North Africa and Iran (I).*** 114, on a Fanta break with Günter Reiss in southern Tunisia (Ousseltia vic., v.1981). 115, 116, pinninig burnet moths in the Anti-Atlas (Morocco: Col de Kerdous, 14.v.1987). 117, with friends (Günter Ebert, Robert Trusch, Axel Hofmann, Helen Alipanah (sitting), Ebrahim Ebrahimi, Gerry and Mustafah Salehi) at the eastern Alborz (Iran: Shah-Kuh, 18.vii.2003). 118, enjoying a cup of tea in the Zagros (Iran: vi.2004). Photos: A. Hofmann (114, 118), J.-U. Meineke (117), G. Tarmann (115, 116).

Figs 119–123. ***On tours in North Africa and Iran (II).*** 119, at the foothills of Middle East's highest mountain, the Kuh-e Damavand (Iran: 5,604 m, 23.vii.2003) with Hossein Rajai, Alireza Sari, Mariyam Rohani, Jörg-Uwe Meineke, Hossein Akhani with Maryam Ghasemkhani. 120, Gerry like a Sheik, during a flat tire (Iran: 24.vii.2003). 121 (Morocco: High Atlas, Telouet vic., 2,000 m, 18.v.1987). 122, 123, our campsite near Delijan, with Jörg-Uwe Meineke and Mustafah Salehi (Iran: 14.vii.2003). *Photos*: A. Hofmann (119, 120, 122, 123), G. Tarmann (121).

Fig. 124. ***The beloved fieldwork in Iran*** with his co-author on the Natural History of Burnet Moths, Axel Hofmann, ended in June 2013. 'A new thing' was discovered near Dezkhord (Zagros) and should be worked out the follwing years. *Photo*: (A. Hofmann).

[*Subsequent pages with fragmentary anecdotes of travels, and keywords as found in the files by W. G. Tremewans*]

Morocco

Ifrane

Hotel Perce-Neige – Ken Guichard – dentures

Tafraoute – Gerhard – Ramadan – frogs!

Axel – dog with bulging eyes in hotel by the Oued Zad

Gerhard – same hotel as dog with bulging eyes – pretty girls – Wiegel

Same town but old hotel with Ken – state of my room and the toilet – proprietor an old and fat French woman and her poor Berber worker – tough chicken!

Axel – King of Morocco – the young girl

Rif – hashish –

Russia

On 1 July 1996 I left Heathrow for Moscow where I met Clas M. Naumann at the airport, a long-standing friend who ended his career as Director of the Zoologisches Forschungsinstitut und Museum Alexander Koenig in Bonn and Professor of Zoology at the Rheinische Friedrich-Wilhelms-Universität Bonn. My flight was not without some entertainment as it very quickly became apparent that the other passengers on the Aleutian jet, which was full, were Russians of both sexes who had been to Britain to watch a football match. Shortly after takeoff bottles of vodka appeared and by the time we reached Moscow the majority of the passengers were in varying degrees of intoxication, with some lying prostrate in the aisles. There was much shouting and singing and I had to endure frequent and raucous shouts of 'England, England' so I can only assume that they were ardent England supporters! In contrast to the attractive young stewardesses on my return flight to London, those on this outward flight were plain, plump, rather masculine, middle-aged women characteristic of the communist era who no doubt had been deliberately selected 'to control the crowd'. Moreover, the food was appalling and the beef, which constituted much of the main course, was so tough that it was literally uneatable (on reflection it was probably horse flesh). Leaving the aircraft on arrival at Moscow I made my way to the immigration section where another burly middle-aged woman greeted me rather rudely with the question 'Passport?'. I handed her my passport and on finding the page containing my visa she asked me something in Russian. On replying in English that I could not understand she immediately became irritated and asked in broken English 'Address in Moscow' and 'Document for hotel?'. On learning that I neither had a document nor an address where I would be staying (all this information was with my friend Naumann who had arranged our visit through a travel agent in Germany), she became very angry and snapped 'Come!'. She escorted me to a room where I was confronted by a senior immigration officer who likewise spoke very little English but in contrast was reasonably polite. There was a brief but agitated discussion in Russian when the female suddenly looked at me and snapped angrily 'Come!'. I followed her back to her desk, where she stamped my visa and almost threw my passport at me. Picking it up I turned to go through the barrier into which I crashed, as she had deliberately

not released the lock. She shouted 'Wait' and I had no alternative but to do so until she had processed the next passenger. What a charming 'lady'!

Moscow

The Middle Volga

During our expedition to the Middle Volga, we were accompanied by Dr Vadim V. Zolotuhin, Dr Alexey Isayev and his wife Vera, Dr Zoya Yefremoya (all from the University of Ul'yanovsk) and Dr Vasiliy V. Anikin (University of Saratov). All are thanked for arranging transport, food and guidance during our fieldwork and for their hospitality and companionship at our campsite each evening. We are especially indebted to Dr Zolotuhin and his family for their kind hospitality whilst staying in their home in Ul'yanovsk, and to everyone mentioned above for showing us beautiful, species-rich habitats in the Middle Volga region.

In 1996 the we spent the first half of July on extensive field work in the Middle Volga region of Russia and were privileged to visit a locality for *Zygaena centaureae* near Ryabino (200 m), a village situated 15 km south of Syzran. The habitat, which was already known to our Russian colleagues from the Universities of Ul'yanovsk and Saratov, is arid steppe and situated above the west bank of the Volga river. Here, *Z. centaureae* only occurs in deep ancient gullies in which the larval host-plant, an umbellifer by the name of *Silaum silaus*, grows amongst lush vegetation, in stark contrast to the impoverished flora of the area that surrounds these gullies. A second but very different locality for the species, situated at 150 m a.s.l. on the northern outskirts of Ul'yanovsk and also along the west bank of the Volga, was visited by us. This beautiful habitat is an abandoned military site and is characterised by its lush, herb-rich vegetation with an abundance of *Silaum silaus*. Incidentally, our Russian colleagues informed us that 8 species of *Zygaena* had been recorded from this locality – although *Z.* (*M.*) *centaureae* was already known from the vicinity of Ul'yanovsk, it was newly recorded at this site by us, bringing the total number to nine!

Dagestan

The principal objective of our visit to Dagestan in the south-eastern Caucasus during the second half of July 1996 was to locate and observe *Zygaena alpherakyi* Sheljuzhko, 1936, a high-mountain species endemic to the Caucasus range and closely related to *Zygaena purpuralis* (Brünnich, 1763). Our expedition was organised entirely by Zheniya Roitberg (University of Moscow) who had obtained the necessary permission and travel permits from government and military authorities and who not only acted as interpreter, but very ably smoothed the way when we encountered difficulties whilst in Dagestan. Moreover, his intimate knowledge of the ecology and natural history of the region was indispensable when planning our trip.

Accompanied by colleagues from the University of Makhachkala, Clas M. Naumann and I left Kaspiysk on the Caspian coast on 16 July and travelled via Derbent by minibus to Kurush that, at 2350 m, is the highest village in Dagestan. Near the village of Garakh the road crossed to the southern side of the Samur River into a

Fig. 125. ***With Russian colleagues before the Kurush expedition for*** **Zygaena alpherakyi.** (Dagestan: vii.1996). *Photo*: C. M. Naumann (archive A. Hofmann)

small strip of land only a few kilometres in length and bordering the independent state of Azerbaijan. Before we reached the bridge we were stopped at a checkpoint by the Russian military who were unwilling for us to proceed in spite of the fact that we had written permission from the highest military authority in Dagestan; after some argument and several telephone calls, we were eventually allowed to go through but under armed escort! Needless to say, we encountered no problems in the disputed area nor did we meet anyone, official or otherwise; moreover, had we done so, we very much doubted that there would have been any problems. We noted that a new road was being constructed by the Russian authorities on the northern (Russian) side of the river, a project that by now must be completed so that anyone now visiting Kurush should not become involved in such complications. Once away from the border with Azerbaijan, we bypassed the villages of Achty and Terek, all well-known localities for burnet moths. Eventually the road began to climb and then its surface deteriorated rapidly; as a consequence, the engine of our minibus overheated continuously so that we had to stop frequently to allow it to cool (this was not surprising as it was heavily overloaded and contained nine people, our camping equipment and a week's supply of food!). Fortunately a Russian military lorry overtook us on its way to Kurush; the soldiers kindly off-loaded our food, equipment and some of our personnel and went to the village ahead of us so that we were then able to proceed without difficulty. We eventually reached Kurush at 20.00 h and spent the night in one of the better quality houses owned by a villager who was a friend of one of our Russian companions from Makhachkala (the majority of the houses are built of mud with low flat roofs). The wife of our host kindly provided us with an excellent supper of freshly made, home-baked bread, cheese and yoghurt washed down with numerous glasses of tea. This was followed by the inevitable vodka (in spite of their Muslim background) and as we were obliged to participate in innumerable toasts it was difficult to avoid becoming completely intoxicated, unlike our host. Needless to say I slept well that night in spite of raucous snoring by Naumann and being tightly packed on the floor of a small room!

The following morning we awoke to admire an excellent view from our 'bedroom' window of a beautiful mountain by the name of Bazar-Dyuzi, the upper parts of which were covered in snow that dazzled in the bright sunshine. At 4466 m, Ba-

zar-Dyuzi is the highest mountain in Dagestan and is situated on the south-west side of the Pereval Kurush or Kurush Pass over which a mule track crosses into Azerbaijan. Incidentally, a fascinating account of travelling in Dagestan in the 1880s is provided by Radde (1887) whose paper includes a map of the region and delightful engravings of the mountains surrounding Kurush, including Bazar-Dyuzi and Shalbuzdag. In spite of its mud-built houses, narrow unpaved streets and predominant but not unpleasant smell of sheep and cow dung, Kurush nevertheless has a telephone system and electricity, the latter providing power for numerous television sets that appear to be a status symbol amongst the wealthier inhabitants of the village. Our host provided us with breakfast (the same menu as supper but fortunately without the vodka) after which we departed and set up camp by the Kurush River at 2300 m in the floor of the valley.

From 17–24 July we explored the high-mountain regions on both sides of the river. During our stay we discovered *Zygaena alpherakyi* in three locations, viz. at 3250 m on Shalbuzdag, a mountain situated immediately above the village of Kurush and consequently much overgrazed by domestic herbivores, at 2900–3100 m on Yaridag and at 2900–3200 m on Bazar-Dyuzi, the last two mountains being less heavily grazed and which, respectively, guard the north-east and south-west sides of the Pereval Kurush. The habitats of *Zygaena alpherakyi* were at 2900–3250 m while our campsite was at 2300 m, therefore it was necessary to set off at 06.00 h and walk at a steady pace for three hours in order to reach them before the sun became unbearably hot.

Epilogue

It is said that one should never look back to the past, but these days, writing in August 2005 at the age of 74, I often think of the 'balmy' days of my youth. Of course it is easy to remember the 'good old days' and to forget the trials and tribulations that one sometimes has to endure in life. But during my teens and early twenties I was working on a farm and was fit and healthy, in contrast to my deteriorating health at the moment. In spite of my frustrations in the late 1940s at not being able to obtain entomological equipment, even entomological pins, until I met Guy Adkin and Vera Muspratt, looking back they were indeed good times, as my sister and I had good parents and a very happy childhood. Moreover, as far as entomology and natural history in general were concerned, there was certainly a greater abundance of insects and other wildlife to be found, while many more excellent habitats still existed then than now. Intensive farming was yet to take its toll, there were very few motor vehicles about and one did not suffer from the exhaust fumes, noise and light pollution of today. It is now impossible to get away from noise – it is everywhere and emanates from garden tools to motorised vehicles to aircraft. In this respect I remember within the last decade or so being alone high up in a mountain range in Iran at an elevation of 3000 m or more, where the weather was excellent and I felt at one with nature. Surely in such a place one could be free from noise? But no! From high in the sky came the sound of a jet aircraft and it soon became clear that the mountain I was on was situated under the route of a commercial airline between two of the major cities in Iran, the disturbance occurring at intervals throughout the day. As for light pollution, how many young people today have seen the Milky Way at night or the constellation known as the Seven Sisters, even here in Cornwall? To see such wonders, one has to be out on a cloudless night in such places as the Lizard, West Penwith or on Bodmin Moor.

But I digress! There is no doubt that so much destruction of our wildlife can be attributed more to modern farming methods than to any other industry, discounting the building of new roads and the improvement of others, the impact of which in most cases is negligible in comparison. It is not only the herbicides and insecticides that are polluting the land but the modern equipment that is being used also takes

its toll. The machines that now cut the grass for hay or silage, or those that are used to trim the hedges (when this is done), destroy almost everything. I well remember cutting hay at Trevissick Farm, albeit using a tractor at the time, but with an old hay machine that was formerly pulled by two shire horses; the knife that cut the grass was made up of a number of triangular blades sliding between long metal prongs or teeth. Such a machine did very little harm to wild life, except perhaps to an unlucky rabbit that got in the way – even the nests of ground-nesting birds such as skylarks and partridges usually escaped the knife, as it was always set at least six inches above the ground. In contrast, today's machinery cuts everything at ground level, even to the extent that bare earth is often exposed (why do some farmers have to be so greedy?). When cutting hay in the early 1950s, I can remember Meadow Brown butterflies (*Maniola jurtina*) that actually bred in the fields 'dancing' above the knife of the hay machine as the long grass and wild flowers fell. In contrast, a walk across Trevissick Farm (and almost every other farm) these days reveals a green but sterile landscape, with not a butterfly in sight apart from a possible stray Large or Cabbage White (*Pieris brassicae*) that might be passing through, seemingly in great haste. The Cornish hedgerows (those that have been left standing) used to be a haven for a variety of wildlife, including flowers and insects, but these have also suffered badly. In the 'old days', the hedges were trimmed manually by using a hook or sickle, but now, if they are trimmed at all, the modern machine that is used does not cut but actually knocks off the vegetation, reducing it to a pulp. Anything resting on the vegetation, such as the caterpillars of moths or those that mine the leaves of plants, is thus destroyed. Conversely, many farmers no longer bother to trim the hedgerows at all and place either a barbed wire or electric fence along the hedgerow about two metres or so from its base to keep the animals away. When this is done, the herbaceous plants, such as Bluebell (*Hyacinthoides non-scripta*) and Primrose (*Primula vulgaris*), for example, are completely smothered by such dominant species as Bramble (*Rubus* spp.) and Gorse (*Ulex europaeus*). In one particular field at Trevissick Farm there were colonies of Primrose and Cowslip (*Primula veris*), the plants growing together along a twenty metre or so stretch of a north-facing hedge. Here, hybrids between the Primrose and Cowslip were not uncommon, but all have disappeared, as they have been smothered by Bramble.

On a visit to the Galway Bay area in the west of Ireland (Burren, Co. Clare) as recently as 1997, my wife and I observed hay meadows that were as I remember them in Cornwall in the 1950s; as the crop of hay was not heavy, one wonders whether the farming there was organic (there was no evidence to suggest that artificial fertilisers had been used). In addition to the grass, wild flowers were abundant and included Bird's-foot Trefoil (*Lotus corniculatus*); as a consequence, there was a thriving colony of the Six-spot Burnet moth present whose caterpillars feed on this plant as well as various butterflies and other insects. Such meadows were indeed a joy to behold, but how long they will remain in their present state is unknown, probably not very long with EU regulations etc. In similar meadows in the same area, the hay had been collected into pooks ready for harvesting.

Another serious problem with habitats in Cornwall at the present time is the lack of burning. In my younger days, so-called waste ground was regularly burned, such fires having been caused accidentally by a lighted cigarette end carelessly thrown from a passing vehicle, or deliberately by those farmers who owned tracts of moorland. The latter practice is known as swaling although I am not sure that such a term was ever used by the country folk in Cornwall. Its purpose was to control the growth of heathers (*Calluna vulgaris* and *Erica cinerea*) and improve the amount of moorland grasses that would provide better grazing for the livestock. Of course, moorland fires were also deliberately started by mischievous young boys who had nothing better to do at the time.

In those days I was always horrified when a tract of moorland was burnt, especially when it was a known to be a good habitat for a particular species. At the time I was ignorant of the fact that such burning did a tremendous amount of good, especially when it was what is known as a 'cold burn', i.e. it took place during the winter months, the vegetation was slightly damp and there was a strong wind that took the blaze rapidly across the heath land. As the fire races across the habitat under such conditions, it does little harm to the hibernating insects that are hidden deep down in the tussocks or near the ground. Two classic examples are former habitats for the Marsh Fritillary butterfly (*Euphydryas aurinia*) and the Pearl-Bordered Fritillary (*Boloria euphrosyne*) at Manor Parsley and Park Shady, respectively. The former species occurred above the sallow carr adjacent to the river at the bottom

of the ericaceous slope that is situated on the right hand side of Millpool Hill as one descends into the hamlet of Manor Parsley. In the 1950s the Marsh Fritillary was common every year, but it is no longer present and I have no idea when it became extinct during my absence in Surrey from 1957 to 1990. Had I continued to live in Cornwall it might have been possible to maintain its presence there. There is no doubt in my mind that lack of burning (as far as I know the slope has not been burned for 50 years or more) has caused its demise, as today the habitat has changed beyond recognition. The area where the colony of the Marsh Fritillary occurred is now very dry and has been taken over by huge tussocks of Purple Moor Grass (*Molinia caerulea*), resulting in the ground being drier than it was formerly and, as a consequence, such plants as Bog Asphodel (*Narthecium ossifragum*) and Cotton Grass (*Eriophorum angustifolium*), and the larval foodplant, Devil's Bit Scabious (*Succisa pratensis*), are no longer present. Lack of grazing cannot have been a problem, as the unfenced slope has not been grazed in my living memory (65 years) and probably not for another 30 years or so before that, as my father was born at Manor Parsley in 1901 and would have informed me of such events. The Marsh Fritillary was certainly still there in 1960, as I remember collecting a nest of larvae for illustration by Arthur Smith in his book on British butterflies, which he co-authored with Vernon Shearer (Smith & Shearer, 1961: 24, fig.).

Acknowledgements

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Clive Benney, Dennis Barbary and wife Margaret (Menagissey, Mt Hawke), Heather M. Butterfield (Menagissey, Mt Hawke), Dennis J. Juleff (Bolingey, Perranporth), Ross Williams (Redruth), my sister Margaret J. Delbridge and her husband M. Wilson Delbridge (Hendra Croft, Newquay) and T. J. Ronald Osborne (Forge Farm, Mawla).

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Fig. 126. Relatives, colleagues and friends in front of The Beacon Hotel, St. Agnes, 17.10.2016. Standing/sitting from left to right: Bob Heckford, Barry Henwood, Axel Hofmann, Louise Tremewan, Mathew Tremewan, Chloe Searle, Stella Beavan, Malcolm Tremewan, Christopher Pearce, the Reverend Simon Clarke, Junior Walters, Adrian Spalding, Klaus Sattler (sitting), Loveday Jenkin, Alison Musk, Wilson Delbridge, Margaret Delbridge (neé Tremewan, sitting), David Agassiz, Julie Harvey, Betty Smith (sitting), Ian Johnson, Dick Vane-Wright, Sharon Touzel, Martin Honey, Malcolm Scoble, Brian Hutchens, Frank Johns, Jean Tremaine, Ann Bunt, David Delbridge, Penny Russell, Joan Bunt, Hilda Delbridge, Peter Russell, Joani Miller, Sally Butler, Geoff Martin.

W. G. Tremewan

Eulogy
Sylvia Mary Tremewan

Sylvia was born on 13 August 1927 in Brea, a hamlet situated at the foot of Carn Brea, between Camborne and Redruth. She was educated at Roskear School and Bassett Road School, Camborne.

Gerald first met Sylvia in October 1951 and they were married at Tuckingmill Church, Roskear, on 28 March 1953. Their only child, Malcolm, was born three years later on 11 April 1956. Sylvia was a faithful and devoted wife, and a loving mother and grandmother.

Almost from the time they first met, Sylvia took an interest in entomology and unstintingly supported Gerald in his research on butterflies and moths for almost 60 years. Without her support he would never have been able to research the Mendelian genetics of a group of brightly coloured, day-flying moths known in the vernacular as Burnets on which his Ph.D. and subsequently his book were based. Sylvia was an excellent field worker and found many of the rare varieties from which genetic cultures were obtained; she so much enjoyed participating in field trips with Gerald all over Britain and Ireland, and in France and Spain. For the last 15 years of her life she was unable to participate in the fieldwork, but, because of her devotion to Gerald, she always accompanied him and was happy to sit in the car patiently and without complaint while he spent many hours somewhere on a mountainside. During the last few weeks of her life she often reminisced over past expeditions with great enthusiasm and wished so much that she was strong enough to carry on with them. Sylvia was also a good laboratory technician and, with great care and attention, looked after the genetic cultures with great expertise whenever Gerald was away on expeditions to North Africa or the Middle East. Thus, in her own way she was a dedicated entomologist who made a significant contribution to science, as much of the results of the genetic research had been previously unknown.

Fig. 127. Sylvia (left) with Gerry's mother (Dorothy) at St. Piran's Cross (Cornwall: Penhale Sands; late 1960s). *Photo*: W. G. Tremewan.

As to other personal interests, Sylvia enjoyed cooking, gardening, walks in the countryside, music, needlework and crochet. Regarding the last, she made beautiful white baby shawls and gave one to any young mother to be. Moreover, such was her generosity that she also crocheted many brightly coloured knee shawls for the residents of Kenwyn Nursing Home, Truro. She was also a keen collector of dolls and had examples from many countries in Europe, North Africa and the Middle East.

Sylvia was a friendly person with a mischievous sense of humour. She loved people and especially children. Her nature was such that she constantly thought of others and was always putting their needs before those of herself. She loved making new friends and everyone was warmly welcomed in her home where she entertained them with quiet dignity. She was renowned for her Cornish pasties, saffron cake and trifles all of which were especially enjoyed by continental guests – in fact, before they arrived from the Continent special requests were often sent by e-mail.

She loved her son Malcolm so dearly and strongly supported him in his business. Her two grandchildren were also her pride and joy and she was especially proud when Louise graduated at university and Mathew joined his father's company.

Epilogue[31]

Axel Hofmann

Dear friends and relatives of Gerry Tremewan,

Dear family of his son.

My dear Malcolm,

With the death of your Dad you have lost your parents. And many – probably most – of us know how one feels in such a situation. So be sure that these hours, these days and weeks our thoughts and sympathy are with you and your family. It will need a while until sadness and the dominating feeling of loss slowly turn into positive memories, memories that you/we h a d him.

We – his zygaenological family (if I can say so) – have not only lost a very good scientist, a very accurate worker, we have lost a very helpful, wonderful man. We have lost the last of a generation who experienced war, poverty and many shortcomings during their youth, things that we can hardly imagine today.

Gerry Tremewan was the nestor, the centre of our little zygaenological world. He was already there when we all, the younger ones, joined the group. He was the only one who participated on all symposia, except the last two weeks before he passed away. Every one of us in the group got his help and advice whenever needed, he edited many dozens, probably 100s, of drafts without complaining, for close friends, for far distanced friends and even for colleagues he has not even known personally. "No, I cannot" was not in his use.

Now with his death the group will not be the same as it was before. But I know that Gerry does not want us to remain shocked and paralyzed, he wanted us to go on

[31] (17.10.2016, protocol from the funeral celebration in the Mount Hawke Chapel)

and his deepest wish was the publication of his life-long work about the *Natural History of Burnet Moths*, a thing that I guaranteed him.

When I was in a similar situation as Gerry's family is now, a good friend of mine sent me a poem[32] which helped me to find a way of acceptance for things we cannot change. It reads as follows

As every blossom fades
and all youth sinks into old age,
so every life's design, each flower of wisdom,
attains its prime and cannot last forever.
The heart must submit itself courageously
to life's call without a hint of grief,
A magic dwells in each beginning,
protecting us, telling us how to live.

High purposed we shall traverse realm on realm,
cleaving to none as to a home,
the world of spirit wishes not to fetter us
but raise us higher, step by step.
Scarce in some safe accustomed sphere of life
have we established a house, then we grow lax;
only he who is ready to journey forth
can throw old habits off.

Maybe death's hour too will send us out new-born
towards undreamed-lands,
maybe life's call to us will never find an end
Courage my heart, take leave and fare thee well.

Dear Margaret and Wilson, dear Sally and Louisa, dear Mathew and Malcolm, may these lines also help you to find acceptance and start to turn sadness into positive feelings.

[32] ‚Stufen' {steps] by Herrmann Hesse (1877-1962).

APPENDICES 1 – 5

APPENDIX 1

List of Publications by W. G. Tremewan[17]
(autobibliography; excluding book reviews)

1 **Tremewan, W. G.** 1945. *Sympetrum flaveolum* in Cornwall. *The Entomologist* **78**: 36.

2 **Tremewan, W. G.** 1946. *Laphygma exigua* and *Eublemma parva* in Cornwall. *The Entomologist* **79**: 47.

3 **Tremewan, W. G.** 1948. Aberrations of *Pararge megera* and *aegeria*. *The Entomologist* **81**: 245.

4 **Tremewan, W. G.** 1948. Second brood *Argynnis euphrosyne*. *The Entomologist* **81**: 271.

5 **Tremewan, W. G.** 1949. *Rhodometra sacraria* in Cornwall. *The Entomologist* **82**: 233.

6 **Tremewan, W. G.** 1950. *Eublemma parva* in Cornwall. *The Entomologist* **83**: 266.

7 **Tremewan, W. G.** 1952. *Vanessa atalanta* emerging at night. *The Entomologist* **85**: 238.

8 **Tremewan, W. G.** 1952. *Macroglossum stellatarum* Linn. in Cornwall. *The Entomologist's Record and Journal of Variation* **64**: 289.

9 **Tremewan, W. G.** 1953. *Aglais urticae* flying by night. *The Entomologist* **86**: 58.

10 **Tremewan, W. G.** 1953. Some notes on the entomology of the Redruth district, with particular reference to butterflies and moths. *Cornwall Technical College Magazine* **1**: 31–34.

11 **Tremewan, W. G.** 1954. Notes on variation in *Zygaena trifolii* Esper, *Z. trifolii* ssp. *palustris* Oberthür, and *Z. filipendulae* Linnaeus. *The Entomologist's Record and Journal of Variation* **66**: 233–234.

12 **Tremewan, W. G.** 1956. Notes from Cornwall, 1955. *The Entomologist's Record and Journal of Variation* **68**: 61–64.

[17] Compiled by W. G. Tremewan; modified and amended by A. Hofmann and A. Spalding.

13 **Tremewan, W. G.** 1957. *Austrotortrix postvittana* in Cornwall. *The Entomologist* **90**: 76.

14 **Tremewan, W. G.** 1958. Notes on species of the genus *Zygaena* Fabricius. *Entomologist's Gazette* **9**: 183–185.

15 **Tremewan, W. G.** 1958. Notes on the British species of the genus *Zygaena* Fabricius. *Entomologist's Gazette* **9**: 187–196.

16 **Tremewan, W. G.** 1959. *Procris globulariae* Hübner: an historical note and the provision of a neotype. *The Entomologist* **92**: 116–119, pl. 92, figs 1–5.

17 **Tremewan, W. G.** 1959. A new genus for *Zygaena simonyi* Rebel, Lepidoptera, Zygaenidae. *The Entomologist* **92**: 213–217, figs 1–4.

18 **Tremewan, W. G.** 1959. Two new species of Chalcosiinae from India (Lep., Zygaenidae). *The Entomologist* **92**: 254–256, figs 1–4.

19 **Tremewan, W. G.** 1960. A list of foodplants of some species of the lepidopterous family Zygaenidae. *The Entomologist* **93**: 108–111.

20 **Tremewan, W. G.** 1960. Additional notes on the British species of the genus *Zygaena* Fabricius (Lep., Zygaenidae). *Entomologist's Gazette* **11**: 185–194.

21 **Tremewan, W. G.** 1960. New synonymy and notes on some species of the genus *Zygaena* Fabricius, Lepidoptera, Zygaenidae. *The Entomologist's Record and Journal of Variation* **72**: 206–209, figs 1, 2.

22 **Reiss, H. & Tremewan, W. G.** 1960. On the synonymy of some *Zygaena* species, with descriptions of a new species and subspecies from Morocco, Lep., Zygaenidae. *Bulletin of the British Museum (Natural History)* (Entomology) **9**: 457–468, pls 22–25.

23 **Tremewan, W. G.** 1961. The British species of the genus *Procris* Fabricius (Lep., Zygaenidae). *Entomologist's Gazette* **12**: 19–23, figs 1–12.

24 **Tremewan, W. G.** 1961. Records of Lepidoptera from Cornwall, 1943–58. *Entomologist's Gazette* **12**: 127–142.

25 **Tremewan, W. G.** 1961. Notes on *Zygaena* species, with descriptions of new subspecies from Spain (Lepidoptera: Zygaenidae). *The Entomologist's Record and Journal of Variation* **73**: 1–8.

26 **Tremewan, W. G.** 1961. The Burnet complex – a reply. *The Entomologist's Record and Journal of Variation* **73**: 110–113.

27 **Tremewan, W. G.** 1961. A new subspecies of *Zygaena hippocrepidis* Hübner,

Lepidoptera: Zygaenidae. *The Entomologist's Record and Journal of Variation* **73**: 139–141.

28 **Tremewan, W. G.** 1961. Notes on *Zygaena* species from the Pyrenees, Lepidoptera: Zygaenidae. *The Entomologist's Record and Journal of Variation* **73**: 199–200.

29 **Tremewan, W. G.** 1961. The subgenera of the genus *Zygaena* Fabricius, Lepidoptera: Zygaenidae. *The Entomologist's Record and Journal of Variation* **73**: 200–203.

30 **Tremewan, W. G.** 1961. A new species of *Zygaena* from Gibraltar, Lepidoptera: Zygaenidae. *The Entomologist's Record and Journal of Variation* **73**: 223–225, pl. 7, figs 1–10.

31 **Tremewan, W. G.** 1961. The aberrations of the British species of the genus *Zygaena* Fabricius (Lepidoptera: Zygaenidae). *Coridon* (A) no. 1: 1–10, pls C1–C3.

32 **Tremewan, W. G.** 1961. A catalogue of the types and other specimens in the British Museum (Natural History) of the genus *Zygaena* Fabricius, Lepidoptera: Zygaenidae. *Bulletin of the British Museum (Natural History)* (Entomology) **10**: 239–313, pls 50–64.

33 **Tremewan, W. G.** 1962. A new subspecies of *Zygaena lonicerae* Scheven (Lep., Zygaenidae) from Scotland. *Entomologist's Gazette* **13**: 10–11.

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APPENDIX 2

Taxa described by W. G. Tremewan[18]
(in systematic order)

bifasciata Tremewan, 1959	*Hampsonia bifasciata* Tremewan, 1959 (Chalcosiinae, Zygaenidae)
sevastoupoli Tremewan, 1959	*Soritia sevastoupoli* Tremewan, 1959 (Chalcosiinae, Zygaenidae)
Reissita Tremewan, 1959	valid genus (Zygaeninae, Zygaenidae)
yemenicola Tremewan, 1959	*Reissita simonyi yemenicola* Tremewan, 1959
sylviae Tremewan, 1959	*Reissita simonyi yemenicola* Tremewan, 1959 f. *sylviae* Tremewan, 1959
Epizygaenella Tremewan & Povolny, 1968	valid genus (Zygaeninae, Zygaenidae)
tenhageni Hofmann & Tremewan, 2003	*Zygaena* (*Mesembrynus*) *seitzi tenhageni* Hofmann & Tremewan, 2003
meinekei Hofmann & Tremewan, 2003	*Zygaena* (*Mesembrynus*) *nocturna meinekei* Hofmann & Tremewan, 2003
kermanensis Tremewan, 1975	*Zygaena* (*Mesembrynus*) *kermanensis* Tremewan, 1975
qashqai Tremewan, 1975	*Zygaena* (*Mesembrynus*) *kermanensis qashqai* Tremewan, 1975
askarii Tremewan, 1975	*Zygaena* (*Mesembrynus*) *kermanensis askarii* Tremewan, 1975
kermanensis Tremewan, 1975	*Zygaena* (*Mesembrynus*) *kermanensis kermanensis* Tremewan, 1975
isfahanica Tremewan, 1975	*Zygaena* (*Mesembrynus*) *turkmenica isfahanica* Tremewan, 1975
kendevanica Tremewan, 1977	*Zygaena* (*Mesembrynus*) *tamara kendevanica* Tremewan, 1977

[18] Compiled by A. Hofmann.

syntopica Hofmann & Tremewan, 2003	*Zygaena* (*Mesembrynus*) *fredi syntopica* Hofmann & Tremewan, 2003
cottrilli Hofmann & Tremewan, 2017	*Zygaena* (Mesembrynus) *araxis cottrilli* Hofmann & Tremewan, 2017
kamarana Hofmann & Tremewan, 2005	*Zygaena* (*Agrumenia*) *cambysea kamarana* Hofmann & Tremewan, 2005
anadoluica Tremewan, 1970	*Zygaena* (*Mesembrynus*) *minos diaphana* Staudinger, 1887
sabulosa Tremewan, 1976	*Zygaena* (*Mesembrynus*) *purpuralis sabulosa* Tremewan, 1976
segontii Tremewan, 1958	*Zygaena* (*Mesembrynus*) *purpuralis segontii* Tremewan, 1958
pseudodiaphana Tremewan, 1958	*Zygaena* (*Mesembrynus*) *purpuralis barthai* Reiss, 1929
rebeliana Reiss & Tremewan, 1964	*Zygaena* (*Mesembrynus*) *graslini Lederer*, 1855
elissae Hofmann, Reiss & Tremewan, 1994	*Zygaena* (*Mesembrynus*) *favonia elissae* Hofmann, Reiss & Tremewan, 1994
rianoica Tremewan, 1961	*Zygaena* (*Mesembrynus*) *sarpedon carmencita* Oberthür, 1910
gibraltarica Tremewan, 1961	*Zygaena* (*Agrumenia*) *fausta gibraltarica* Tremewan, 1961
margheritae Tremewan, 1961	*Zygaena* (*Agrumenia*) *fausta fernan* Agenjo, 1948
fassnidgei Tremewan & Manley, 1965	*Zygaena* (*Agrumenia*) *fausta fassnidgei* Tremewan & Manley, 1965
gundafica Reiss & Tremewan, 1960	*Zygaena* (*Agrumenia*) *maroccana gundafica* Reiss & Tremewan, 1960
numidia Hofmann, Reiss & Tremewan, 1994	*Zygaena* (*Agrumenia*) *marcuna numidia* Hofmann, Reiss & Tremewan, 1994
leonica Tremewan, 1961	*Zygaena* (*Agrumenia*) *hilaris leonica* Tremewan, 1961
alaudina Tremewan & Naumann, 1989	*Zygaena* (*Agrumenia*) *magiana alaudina* Tremewan & Naumann, 1989
kumbelica Tremewan & Naumann, 1989	*Zygaena* (*Agrumenia*) *magiana kumbelica* Tremewan & Naumann, 1989

elbursica Tremewan, 1975	*Zygaena* (*Agrumenia*) *haberhaueri elbursica* Tremewan, 1975
cyrus Tremewan, 1975	*Zygaena* (*Agrumenia*) *rosinae cyrus* Tremewan, 1975
xerxes Tremewan, 1975	*Zygaena* (*Agrumenia*) *rosinae xerxes* Tremewan, 1975
bakhtiyari Hofmann & Tremewan, 2005	*Zygaena* (*Agrumenia*) *bakhtiyari* Hofmann & Tremewan, 2005
eximia Tremewan, 1970	*Zygaena* (*Agrumenia*) *formosa formosa* Herrich-Schäffer, 1852
nuristanensis Tremewan & Povolny, 1968	*Zygaena* (*Agrumenia*) *afghana nuristanensis* Tremewan & Povolny, 1968
constantinensis Reiss & Tremewan, 1964	*Zygaena* (*Agrumenia*) *felix constantinensis* Reiss & Tremewan, 1964
hajebensis Reiss & Tremewan, 1960	*Zygaena* (*Agrumenia*) *orana contristans* Oberthür, 1922
sagarraiana Reiss & Tremewan, 1964	*Zygaena* (*Agrumenia*) *carniolica descimonti* Lucas, 1959
formiacola Reiss & Tremewan, 1964	*Zygaena* (*Agrumenia*) *carniolica amanda* Reiss, 1921
tokatensis Tremewan, 1970	*Zygaena* (*Agrumenia*) *carniolica amasina* Staudinger, 1879
atatuerki Tremewan, 1970	*Zygaena* (*Agrumenia*) *carniolica amasina* Staudinger, 1879
burgosensis Tremewan, 1963	*Zygaena* (*Agrumenia*) *occitanica burgosensis* Tremewan, 1963
huescacola Tremewan & Manley, 1965	*Zygaena* (*Agrumenia*) *occitanica huescacola* Tremewan & Manley, 1965
argyllensis Tremewan, 1967	*Zygaena* (*Agrumenia*) *viciae argyllensis* Tremewan, 1967
soriacola Tremewan & Manley, 1965	*Zygaena* (*Agrumenia*) *loti arragonensis* Staudinger, 1887
erythristica Tremewan & Manley, 1969	*Zygaena* (*Agrumenia*) *loti erythristica* Tremewan & Manley, 1969
beynamensis Tremewan, 1970	*Zygaena* (*Agrumenia*) *loti anatolica* Burgeff, 1926
diezma Tremewan, 1963	*Zygaena* (*Agrumenia*) *ignifera* Korb, 1897
alfacarica Tremewan, 1961	*Zygaena* (Zygaena) *lavandulae alfacarica* Tremewan, 1961

huescae Tremewan, 1963	*Zygaena* (Zygaena) *lavandulae barcelonica* Reiss, 1936
guichardi Tremewan, 1991	*Zygaena* (Zygaena) *rhadamanthus guichardi* Tremewan, 1991
aragonia Tremewan, 1961	*Zygaena* (Zygaena) *rhadamanthus aragonia* Tremewan, 1961
manleyi Tremewan, 1961	*Zygaena* (Zygaena) *rhadamanthus rasura* Agenjo, 1948
faitocola Tremewan & Reiss, 1964	*Zygaena* (Zygaena) *romeo neapolitana* Calberla, 1895
slabyi Reiss & Tremewan, 1964	*Zygaena* (Zygaena) *ephialtes coronillae* [Denis & Schiffermüller], 1775
marujae Tremewan & Manley, 1965	*Zygaena* (Zygaena) *transalpina marujae* Tremewan & Manley, 1965
curtisi Tremewan, 1961	*Zygaena* (Zygaena) *transalpina curtisi* Tremewan, 1961
anglicola Tremewan, 1960	*Zygaena* (Zygaena) *filipendulae stephensi* Dupont, 1900
superflua Tremewan, 1970	*Zygaena* (Zygaena) *filipendulae superflua* Tremewan, 1970
wiegelorum Hofmann & Tremewan, 2005	*Zygaena* (Zygaena) *filipendulae wiegelorum* Hofmann & Tremewan, 2005
leonensis Tremewan, 1961	*Zygaena* (Zygaena) *lonicerae leonensis* Tremewan, 1961
jocelynae Tremewan, 1962	*Zygaena* (Zygaena) *lonicerae jocelynae* Tremewan, 1962
insularis Tremewan, 1960	*Zygaena* (Zygaena) *lonicerae insularis* Tremewan, 1960
pajini Tremewan, 1963	*Zygaena* (Zygaena) *trifolii hibera* Verity, 1925
muspratti Tremewan, 1961	*Zygaena* (Zygaena) *trifolii pusilla* Oberthür, 1910

APPENDIX 3

Taxa described by W. G. Tremewan[19]
(in chronological order)

segontii Tremewan, 1958	*Zygaena* (*Mesembrynus*) *purpuralis segontii* Tremewan, 1958
pseudodiaphana Tremewan, 1958	*Zygaena* (*Mesembrynus*) *purpuralis barthai* Reiss, 1929
bifasciata Tremewan, 1959	*Hampsonia bifasciata* Tremewan, 1959 (Chalcosiinae, Zygaenidae)
sevastoupoli Tremewan, 1959	*Soritia sevastoupoli* Tremewan, 1959 (Chalcosiinae, Zygaenidae)
Reissita Tremewan, 1959	valid genus (Zygaeninae, Zygaenidae)
yemenicola Tremewan, 1959	*Reissita simonyi yemenicola* Tremewan, 1959
sylviae Tremewan, 1959	*Reissita simonyi yemenicola* Tremewan, 1959
gundafica Reiss & Tremewan, 1960	*Zygaena* (*Agrumenia*) *maroccana gundafica* Reiss & Tremewan, 1960
hajebensis Reiss & Tremewan, 1960	*Zygaena* (*Agrumenia*) *orana contristans* Oberthür, 1922
anglicola Tremewan, 1960	*Zygaena* (Zygaena) *filipendulae stephensi* Dupont, 1900
insularis Tremewan, 1960	*Zygaena* (Zygaena) *lonicerae insularis* Tremewan, 1960
rianoica Tremewan, 1961	*Zygaena* (*Mesembrynus*) *sarpedon carmencita* Oberthür, 1910
gibraltarica Tremewan, 1961	*Zygaena* (*Agrumenia*) *fausta gibraltarica* Tremewan, 1961
margheritae Tremewan, 1961	*Zygaena* (*Agrumenia*) *fausta fernan* Agenjo, 1948
leonica Tremewan, 1961	*Zygaena* (*Agrumenia*) *hilaris leonica* Tremewan, 1961
alfacarica Tremewan, 1961	*Zygaena* (Zygaena) *lavandulae alfacarica* Tremewan, 1961

[19] Compiled by A. Hofmann.

aragonia Tremewan, 1961	*Zygaena* (Zygaena) *rhadamanthus aragonia* Tremewan, 1961
manleyi Tremewan, 1961	*Zygaena* (Zygaena) *rhadamanthus rasura* Agenjo, 1948
curtisi Tremewan, 1961	*Zygaena* (Zygaena) *transalpina curtisi* Tremewan, 1961
leonensis Tremewan, 1961	*Zygaena* (Zygaena) *lonicerae leonensis* Tremewan, 1961
muspratti Tremewan, 1961	*Zygaena* (Zygaena) *trifolii pusilla* Oberthür, 1910
jocelynae Tremewan, 1962	*Zygaena* (Zygaena) *lonicerae jocelynae* Tremewan, 1962
burgosensis Tremewan, 1963	*Zygaena* (*Agrumenia*) *occitanica burgosensis* Tremewan, 1963
diezma Tremewan, 1963	*Zygaena* (*Agrumenia*) *ignifera* Korb, 1897
huescae Tremewan, 1963	*Zygaena* (Zygaena) *lavandulae barcelonica* Reiss, 1936
pajini Tremewan, 1963	*Zygaena* (Zygaena) *trifolii hibera* Verity, 1925
rebeliana Reiss & Tremewan, 1964	*Zygaena* (*Mesembrynus*) *graslini* Lederer, 1855
constantinensis Reiss & Tremewan, 1964	*Zygaena* (*Agrumenia*) *felix constantinensis* Reiss & Tremewan, 1964
sagarraiana Reiss & Tremewan, 1964	*Zygaena* (*Agrumenia*) *carniolica descimonti* Lucas, 1959
formiacola Reiss & Tremewan, 1964	*Zygaena* (*Agrumenia*) *carniolica amanda* Reiss, 1921
faitocola Tremewan & Reiss, 1964	*Zygaena* (Zygaena) *romeo neapolitana* Calberla, 1895
slabyi Reiss & Tremewan, 1964	*Zygaena* (Zygaena) *ephialtes coronillae* [Denis & Schiffermüller], 1775
fassnidgei Tremewan & Manley, 1965	*Zygaena* (*Agrumenia*) *fausta fassnidgei* Tremewan & Manley, 1965
huescacola Tremewan & Manley, 1965	*Zygaena* (*Agrumenia*) *occitanica huescacola* Tremewan & Manley, 1965
soriacola Tremewan & Manley, 1965	*Zygaena* (*Agrumenia*) *loti arragonensis* Staudinger, 1887

marujae Tremewan & Manley, 1965	*Zygaena* (Zygaena) *transalpina marujae* Tremewan & Manley, 1965
argyllensis Tremewan, 1967	*Zygaena* (*Agrumenia*) *viciae argyllensis* Tremewan, 1967
Epizygaenella Tremewan & Povolny, 1968	valid genus (Zygaeninae, Zygaenidae)
nuristanensis Tremewan & Povolny, 1968	*Zygaena* (*Agrumenia*) *afghana nuristanensis* Tremewan & Povolny, 1968
erythristica Tremewan & Manley, 1969	*Zygaena* (*Agrumenia*) *loti erythristica* Tremewan & Manley, 1969
anadoluica Tremewan, 1970	*Zygaena* (*Mesembrynus*) *minos diaphana* Staudinger, 1887
eximia Tremewan, 1970	*Zygaena* (*Agrumenia*) *formosa formosa* Herrich-Schäffer, 1852
tokatensis Tremewan, 1970	*Zygaena* (*Agrumenia*) *carniolica amasina* Staudinger, 1879
atatuerki Tremewan, 1970	*Zygaena* (*Agrumenia*) *carniolica amasina* Staudinger, 1879
beynamensis Tremewan, 1970	*Zygaena* (*Agrumenia*) *loti anatolica* Burgeff, 1926
superflua Tremewan, 1970	*Zygaena* (Zygaena) *filipendulae superflua* Tremewan, 1970
kermanensis Tremewan, 1975	*Zygaena* (*Mesembrynus*) *kermanensis* Tremewan, 1975
qashqai Tremewan, 1975	*Zygaena* (*Mesembrynus*) *kermanensis qashqai* Tremewan, 1975
askarii Tremewan, 1975	*Zygaena* (*Mesembrynus*) *kermanensis askarii* Tremewan, 1975
kermanensis Tremewan, 1975	*Zygaena* (*Mesembrynus*) *kermanensis kermanensis* Tremewan, 1975
isfahanica Tremewan, 1975	*Zygaena* (*Mesembrynus*) *turkmenica isfahanica* Tremewan, 1975
elbursica Tremewan, 1975	*Zygaena* (*Agrumenia*) *haberhaueri elbursica* Tremewan, 1975
cyrus Tremewan, 1975	*Zygaena* (*Agrumenia*) *rosinae cyrus* Tremewan, 1975
xerxes Tremewan, 1975	*Zygaena* (*Agrumenia*) *rosinae xerxes* Tremewan, 1975
sabulosa Tremewan, 1976	*Zygaena* (*Mesembrynus*) *purpuralis sabulosa* Tremewan, 1976

kendevanica Tremewan, 1977	*Zygaena* (*Mesembrynus*) *tamara kendevanica* Tremewan, 1977
alaudina Tremewan & Naumann, 1989	*Zygaena* (*Agrumenia*) *magiana alaudina* Tremewan & Naumann, 1989
kumbelica Tremewan & Naumann, 1989	*Zygaena* (*Agrumenia*) *magiana kumbelica* Tremewan & Naumann, 1989
guichardi Tremewan, 1991	*Zygaena* (Zygaena) *rhadamanthus guichardi* Tremewan, 1991
elissae Hofmann, Reiss & Tremewan, 1994	*Zygaena* (*Mesembrynus*) *favonia elissae* Hofmann, Reiss & Tremewan, 1994
numidia Hofmann, Reiss & Tremewan, 1994	*Zygaena* (*Agrumenia*) *marcuna numidia* Hofmann, Reiss & Tremewan, 1994
tenhageni Hofmann & Tremewan, 2003	*Zygaena* (*Mesembrynus*) *seitzi tenhageni* Hofmann & Tremewan, 2003
meinekei Hofmann & Tremewan, 2003	*Zygaena* (*Mesembrynus*) *nocturna meinekei* Hofmann & Tremewan, 2003
syntopica Hofmann & Tremewan, 2003	*Zygaena* (*Mesembrynus*) *fredi syntopica* Hofmann & Tremewan, 2003
kamarana Hofmann & Tremewan, 2005	*Zygaena* (*Agrumenia*) *cambysea kamarana* Hofmann & Tremewan, 2005
bakhtiyari Hofmann & Tremewan, 2005	*Zygaena* (*Agrumenia*) *bakhtiyari* Hofmann & Tremewan, 2005
wiegelorum Hofmann & Tremewan, 2005	*Zygaena* (Zygaena) *filipendulae wiegelorum* Hofmann & Tremewan, 2005
cottrilli Hofmann & Tremewan, 2017	*Zygaena* (Mesembrynus) *araxis cottrilli* Hofmann & Tremewan, 2017

APPENDIX 4

Taxa dedicated to W. G. Tremewan

Zygaena (*Agrumenia*) *tremewani* Hofmann & Reiss, 1983	bon. spec.
Tremewania Efetov & Tarmann, 1999	subgenus of *Jordanita* (Procridinae, Zygaenidae)
Chrysartona tremewani Efetov, 2006	bon. spec.
Chrystremewana Efetov, 2006	subgenus of *Chrysartona* (Procridinae, Zygaenidae)
Cnephasia tremewani Razowski, 1961	(Tortricidae)
Pseudatteria tremewani Obraztsov, 1966	(Tortricidae)
Acleris tremewani Razowski, 1964	(Tortricidae)

APPENDIX 5[17]

CURRICULUM VITAE

Name:	Walter Gerald Tremewan
Place and Date of Birth:	Truro, Cornwall, Great Britain – 02.01.1931
Place and Date of Death:	Truro, Cornwall, Great Britain – 01.10.2016
Nationality:	British
Address:	Pentreath, 6 Carlyon Road, Playing Place, Truro, Cornwall TR3 6EU, Great Britain
Tel:	01872 862468
E-mail:	wgt.pentreath@talk21.com

Education and Qualifications

Educated at Redruth Grammar School and Cornwall College for Further Education

Qualifications: Ph.D. (University of Aberdeen), C.Biol., M.I.Biol.

Employment Record

Employed in the Department of Entomology, the Natural History History Museum, London, from 1957–1991; retired as Principal Scientific Officer in January 1991. Duties included the curation of Lepidoptera and research on this Order; Departmental Scientific Editor from 1973 until retirement. For more than 45 years special emphasis has been placed on research into the classification, biology, ecology and genetics of the Zygaenidae (a group of day-flying moths known in the vernacular as burnets and foresters).

Publication Record

A list of 205 published titles comprising short notes, longer papers and

[17] Compiled by W. G. Tremewan; further live data s. pp. 26, 27 and in the obituaries (references p. 12).

books, mostly on the Zygaenidae, but also on other groups of Lepidoptera (including the Tortricoidea), have been published.

Other Interests

Ornithology, Botany, general Natural History, Conservation.

Other Information

Fellow of the Royal Entomological Society
Life Member of the Institute of Biology
Life Member of the Cornwall Wildlife Trust
Member of Societas Europaea Lepidopterologica
Special Life Member of the British Entomological and Natural History Society
Life Member of the National Trust
Honorary Life Member of GIRAZ (Groupe d'information, de recherche et d'animation sur les Zygaenidae)
Honorary Life President of GIRAZ
Life Member of the St Agnes Museum Trust

Other Information (continued)

Editor of *Entomologist's Gazette* (a quarterly journal on Palaearctic entomology), 1964 et seq.
Associate Editor of *Moths and Butterflies of Great Britain and Ireland*

Current research

Research on the ecology, biology and genetics of burnet moths (*Zygaena* Fabricius) and on other groups of Lepidoptera.

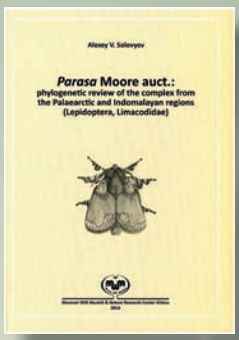
The following project is currently being worked on: *The Natural History of Burnet Moths*; co-authored with A. Hofmann (Linkenheim-Hochstetten), this is a major monograph which will cover all aspects of the ecology, ethology and life history of burnet moths.

Fig. 128. ***Gerry above the Caspian clouds.*** Iran: Alborz, Damavand reg., Reyneh vic., 23.vii.2003. Photo: A. Hofmann.

Book series „Proceedings of the Museum Witt”

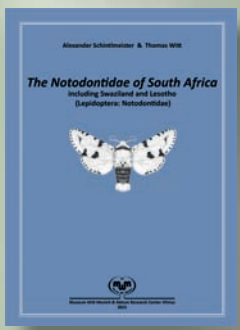
The “Proceedings of the Museum Witt“ were founded in 2014 by Dr. h.c. Thomas J.Witt in Munich as book series appearing irregularly with the aim to publish quickly comprehensive manuscripts written by corresponding authors of the Museum Witt, Munich. The series is published in cooperation with State Nature Research Centre in Vilnius, Lithuania.

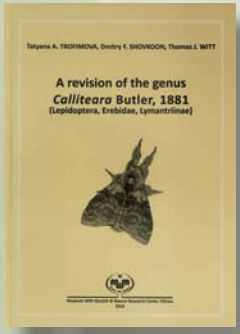
Main Editor:
Dr. h. c. Thomas J. Witt, Munich, Germany.



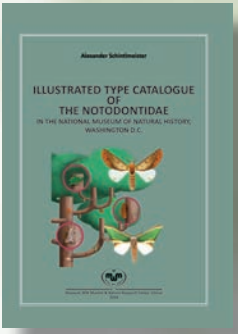
Alexey V. SOLOVYEV
Parasa Moore auct.: phylogenetic review of the complex from the Palaearctic and Indomalayan regions (Lepidoptera, Limacodidae).
Proc. Mus. Witt Vol.1, Munich and Vilnius (2014) (110 Verbreitungskarten, 147 farbige Abbildungen, 120 Genitalabbildungen, 239 Seiten). Preis € 72.-

Alexander SCHINTLMEISTER & Thomas J. WITT
The Notodontidae of South Africa including Swaziland and Lesotho (Lepidoptera).
Proc. Mus. Witt Vol.2, Munich and Vilnius (2015),
(104 Verbreitungskarten, 37 Farbtafeln, 42 Tafeln mit Genitalabbildungen, 288 Seiten). Preis € 89.



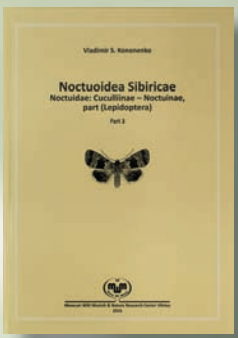


Tatyana A. TROFIMOVA & Dmitry F. SHOVKOON & Thomas J. WITT
A revision of the genus Calliteara Butler, 1881(Lepidoptera, Erebidae, Lymantriinae).
Proc. Mus. Witt Vol.3, Munich and Vilnius (2016), (117 distribution maps, 17 colour plates, 68 plates with genitalia figures, 292 pages).
Preis € 78.-



Alexander SCHINTLMEISTER
An Illustrated Type Catalogue of the Notodontidae in the National Museum of Natural History Washington D.C.
- Proc. Mus. Witt Vol.4, Munich and Vilnius (2016)
(604 pages, numerous colour plates).
Preis € 150.-

Vladimir KONONENKO
Noctuidae Sibiricae Part 3.
Proc. Mus. Witt Vol.5(3), Munich and Vilnius (2016)
(497 Seiten, 19 Farbtafeln, 166 Schwarzweißtafeln mit Genitalabbildungen, 498 Verbreitungskarten).
Preis € 140,-



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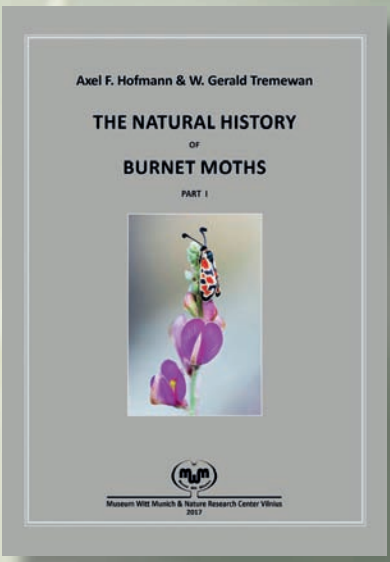
THE NATURAL HISTORY
OF
BURNET MOTHS
PART I



Museum Witt Munich & Nature Research Center Vilnius
2017

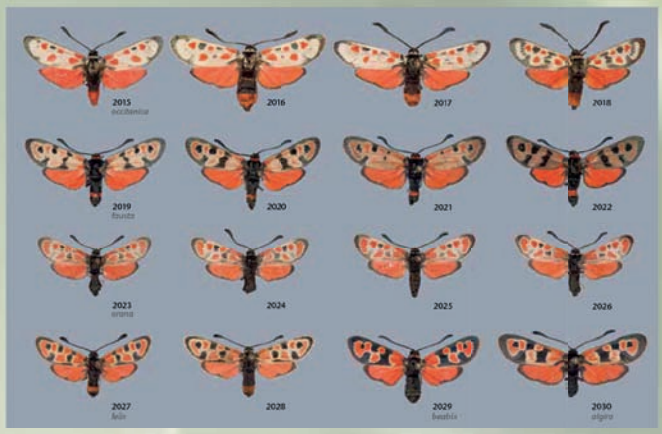
Seit nunmehr fast 30 Jahren haben die beiden Autoren dieses Werk vorbereitet. Im März 2017 erscheint nun der erste Band der auf drei Bände konzipierten Monographie der Rotwidderchen (Zygaeninae), beginnend mit einem Vorwort von Roger L. H. Dennis und einem Grußwort von Günter Ebert. Text in Englisch, 631 Seiten, durchgehender Vierfarbendruck, 2403 Farbabbildungen, 1958 Schwarz-Weiß-Abbildungen der Genitalstrukturen beiderlei Geschlechts aller (!) Arten.
Ins Zentrum der Betrachtung stellen die Autoren die Art in ihrer Komplexität in Zeit und Raum.

Carl von Linné (1707–1778)

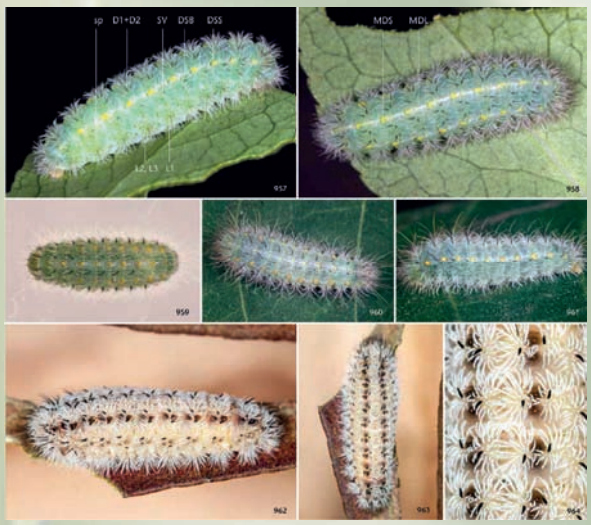
Except for the description of the imago of *Zygaena filipendulae* in 1775 and of *Z. ephialtes* and *Z. fausta* in 1767, to our knowledge there is no contribution by Linnaeus of any biological information on burnet moths. But his work on systematics and especially on nomenclature was (and still is) so strongly reflected in biology that he cannot be ignored in this historical chapter. Moreover, his life divides scientific epochs into pre- and post-Linnaean periods. Although the current systematic zoological nomenclature begins with volume 1 of Linnaeus's 10th edition (1758) of his *Systema Naturae*, there were serious scientists carefully observing biological development and working with such categories as classification and species before that date.

Ausführlich diskutiert werden stammesgeschichtliche Entstehung, räumliche Differenzierung und die vielen unterschiedlichen regionalen Anpassungen der einzelnen Stadien, vom Ei bis zur Imago. Neben den paläarktischen Arten der Gattung Zygaena werden auch alle afrotropischen und orientalischen Gattungen ausführlich behandelt und viele Arten (Eigelege, Raupen, Kokons, Falter) abgebildet.

Figs 2012–2014. White *Zygaena* forms of North Africa ♂ and Spain ♀ (I). 2012, 2013, *Zygaena fausta elodia*, two females nectaring on *Rubus* sp. (Morocco: Rif Occidental, Route de Ouezanne à Mokhrisset, 340 m, 14.vi.2012); 2014, *Z. occitanica vandalitia* nectaring on *Eryngium bourgatii* Gouan (Spain: Sierra de Segura, 8.vii.2006). Photos: J.-M. André (2012, 2013), F. Lencina (2014).



Verbreitungsmuster und Besonderheiten der rezenten paläarktischen Faunenregionen werden diskutiert, phänotypische Ausprägungen wie Sexual-Dimorphismus, Polymorphismus, Melanismus und Erythrismus werden erstmals für das gesamte Areal der Gattung Zygaena auf Arealkarten dargestellt. Ein umfassendes Kapitel ist historischen Autoren und deren Beiträgen zu unserem heutigen Kenntnisstand gewidmet.



Band 1 enthält die Kapitel Introduction and abstracts – Origin, phylogeny, out-groups and systematics – The Zygaena purpuralis/minos complex – Distribution and zoogeography – Morphological terminology and early stages – Variation in phenotype, Geographical patterns and clusters – Historical observations on the biology of burnet moths – Genitalia of all currently known Zygaena species – References – Glossary. Diese Monographie ist das Ergebnis jahrzehntelanger Literaturrecherchen, ungezählter Auslandsreisen, endloser Zuchten und der Auswertung veröffentlichter und unveröffentlichter Berichte und Tagebücher. Zahlreiche Kollegen haben ihre besten Bilder beigesteuert.

Trotz des großen Umfangs und technisch hervorragender Ausstattung konnte ein moderater Verkaufspreis dadurch ermöglicht werden, dass der Herausgeber dieser Monographie einem Non-Profit-Projekt zustimmte.
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