The Dipterist C.R.W. Wiedemann (1770-1840). His life, work and collections

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The German entomologist and dipterist C.R.W. Wiedemann (1770-1840) published the first monographs on "exotic" (non-European) Diptera. Biographical information is presented in order to provide the scientific and social background for these studies, and the relationship between Wiedemann and contemporary entomologists is discussed, especially his interaction with B.W. Westermann, J.W. Meigen, Count J.C.von Hoffmansegg, and P.S. Pallas. Annotated lists are given of the collectors who supplied the material that Wiedemann studied and of the localities from which his new species were described.

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CONTENTS

1. INTRODUCTION

This is the first in a short series of papers that will deal with the life and achievements of C.R.W. Wiedemann. Christian Rudolph Wilhelm Wiedemann (or, when latinised, Christianus Rudolphus Guilielmus) was a man of prodigious talents and accomplishments. He occupied a seminal position in the development of "exotic" Dipterology (i.e. of non-European Dipterology) in the early decades of the 19th century, yet no biographical information is available in the entomological literature apart from the sparse accounts given by Henriksen (1925: 164-165) and, based on this, by Papavero (1971: 111-113). The following pages are based on Nitzsch (1841: 1-15), Winckel (1897: 381), Hirsch (1934: 927), Grabe (1949: 1-73), Schipperges (1967: 146-147), Haferlach (1987: 382-385), and on the posthumously-published autobiographical reminiscences of his widow (L. Wiedemann 1929). In addition, this paper provides information on Wiedemann's interactions with other notable entomologists of the day (with separate sections on Meigen, Westermann, Hoffmansegg and Pallas), and enumerates the various collectors who supplied him with material and the localities from which he described his new species.

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2. BIOGRAPHICAL BACKGROUND[1]

Wiedemann was born in Braunschweig [Brunswick] on 7 November 1770, and died at Kiel on 31 December 1840. His father, Conrad Eberhard Wiedemann (1722-1804), was an art dealer and his mother, Dorothea Friederike née Raspe (1741-1804), was the daughter of an accountant in the Royal mining service and a lady of very refined tastes. After a school education in Brunswick, Wiedemann matriculated in 1790 in the Faculty of Medicine at the University of Jena, where he was a contemporary of Friedrich von Hardenberg (the poet Novalis). Whilst at university, he travelled in Saxony and Bohemia. He obtained his doctor's degree in 1792 with a thesis entitled *Dissertatio inauguralis sistens vitia genus humanum hodiernum debilitantia*. Natural history interests were already a prominent element in his life, and he then undertook a 14-month journey to southern Britain to further his studies in mineralogy. Whilst in London he learned that he had been appointed Professor of Anatomy in the Theatre of Anatomy and Surgery at Brunswick's Collegium Carolinum. His inaugural lecture in October 1794 was entitled *Über das fehlende Brustbein*, and discussed a condition that he had observed in a boy at Llandeilo, Wales.

In 1795 Wiedemann began courting Luise Michaelis[2]. She was the daughter of Johann David Michaelis (1717-1791), the eminent Orientalist of Göttingen University. Her older sister Caroline, widowed whilst still young, married first the literary critic and historian A.W. Schlegel and then the philosopher F.W.J. von Schelling. She

[1] In this biographical section, unreferenced quotations are from L. Wiedemann (1929), translated by myself.

[2] Luise Michaelis was born in Göttingen on 12 September 1770 and died in Kiel on 30 June 1846. Her autobiographical reminiscences were written in the early 1840s, after the death of Wiedemann. They contain much interesting information on her life and the many eminent people with whom she came into contact. She does not say a great deal about Wiedemann, however: whilst a few details emerge about his professional activities nothing is said about entomology or entomologists. The editor Steinberger refers to an unpublished *Life* of Wiedemann by his grandson, and Luise herself refers to a *Leben*. Perhaps these are references to a single document, in which case Luise may well have been sparing in her own account of her husband because so much detail was available in this other source. Life was hard in those days, and she writes much about illnesses and bereavements. But she also writes with great warmth and affection about her many good friends. She was particularly devoted to her brother-in-law Schelling who, more than thirty years after the death of his wife Caroline (Luise's older sister), was still warmly attached to the Michaelis family: "Schelling has remained a devoted and loyal friend right up to the present ... May God grant me still the joy of embracing once more that dear man whom I love so much, and respect so much as a person."

Fig. 1. No portrait of Wiedemann is known to exist, so this example of his hand-writing must serve as an illustration instead. The letter, now in the Hope Entomological Archive in the Oxford University Museum, is to Professor J.O. Westwood. Transcription:

"6. *Aussereuropäische Zweiflügler* 1828 Vol^{e} I with seven lithographic plates or tables.

The second and last vol^{e} is finished and to appear end of the present year.

This moment I am preparing a *Monography of the Midas Genus* which will be published in the Acta Academiae Caesareo-Leopoldinae with coloured engravings of every species. I have in my own collection 8 species of Midas, but I have seen and described 23 species, two of which I do not know the habitation of, they were sent me from the Vienna and the Leyden Museums.

If you have any Diptera from New Holland I would be very much obliged to you for communicating them to me. If you wish to have any Diptera german or exotic let me know. The steamboat going between Hamburgh and London will be the surest mode of communication, but in case you send any insects I desire you will pack them so that they may bear the landcarriage; if you put the box containing the insects into another box, somewhat wider and fill the space between with tow, or cotton, but loosely, it will stand landcarriage. I am Sir! Yours C.R.W. Wiedemann.

My address: Dr. Wiedemann Prof. Medic. Kiel in Holstein."

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The second and last vol^e is finished and to appear end of the present year

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Yours
C.R.W. Wiedemann

My address:
Dr. Wiedemann Prof. Medic.
Kiel in Holstein

was a celebrated figure in early Romantic literary circles of the day but died in 1809. A brother Gottfried Philipp Michaelis was also a medical doctor, and a warm friendship developed between him and Wiedemann, so much so that when Michaelis died in a cholera epidemic Wiedemann took his two sons into his house and brought them up as his own. Luise was warmly received by Wiedemann's family and especially by his mother whom she found a highly cultivated woman.

Wiedemann married Luise in Brunswick on 28 March 1796, and it proved to be a good match, with much mutual affection. The couple settled in Brunswick, where Wiedemann's medical practice thrived. It was typical of Wiedemann's character that his appointment in Brunswick was not an excuse to rest on his laurels but was a stimulus for still greater activity and achievement. He was also appointed a lecturer in obstetrics, a field in which he was increasingly specialising, and served for several years on the local Board of Public Health ("Obersanitätskollegium"). He wrote a *Handbuch der Anatomie* [*Handbook of Anatomy*] in 1796, which ran to a second (1802) and even third (1812) edition. This work was extremely popular, being well-organised, succinct, and ideal for medical students. Being fluent in Latin, English, French and Italian, he undertook translations of scientific works, and Luise writes that he found such work easy and remunerative. It was also part of an endeavour among German scientists to establish German, instead of Latin and French, as the language of learning inside Germany, a trend that was centered at Brunswick at the end of the 18th century. Most notable of such translations (and revisions) were: G. Cuvier's *Tableau Élémentaire* of 1798 as *Cüvier's elementarischer Entwurf der Naturgeschichte der Thiere, aus dem Französischen übersetzt und mit Anmerkungen versehen von C.R.W. Wiedemann* (2 volumes, Brunswick, 1800) [in which the entomological portion was translated and revised by J.K.W. Illiger (see Muggelberg, 1975: 267-268)]; *B. Harwood's System der vergleichenden Anatomie und Physiologie. Aus dem Englischen übersetzt und mit Anmerkungen und Zusätzen versehen von C.R.W. Wiedemann* (Berlin, 1799); J. Méhée, *Über die Schusswunden* (Brunswick, 1801); Fourcroy's, *System der chemischen Kenntnisse* (1801)[3]. There was even time for productive work on natural history, and he wrote *Übersicht der mineralogischen einfachen Fossilien* (1800). Evenings were also spent in more convivial activities. Once a fortnight the Wiedemanns held musical evenings, and Wiedemann performed on the violin and, more expertly, on the cello. The first four of nine children were born, two dying in infancy. It was just after the death of their second son in 1801 that Wiedemann received a scholarship from the Duke of Brunswick for a study-visit to Paris. He had to leave his grieving wife for six months, but she noted with pleasure the "numerous loving and informative letters from W in Paris". In Paris he studied both obstetrics and natural history, meeting Cuvier and other eminent zoologists, and on his return published a detailed account of his medical experiences in *Über Pariser Gebäranstalten und Geburtshelfer, den letzten Schamfugenschnitt und einige andere zu Paris beobachtete Geburtsfälle* (Brunswick, 1803), and in 1802 he accepted an additional appointment as Professor of Obstetrics at the College of Anatomy and Surgery. With this appointment came his nomination as "Herzoglich Braunschweigisch-Lüneburgischer Hofrath" ("Privy Councillor at the court of the Duchy of Brunswick and Lüneburg"). At this time he wrote his *Unterricht für Hebammen* (Brunswick, 1802; *Manual for Midwives*), which appeared shortly after in a Danish edition (*Underviisning for Giordemødre*, 1805). Greatly expanded and revised, it was subsequently published as *Lesebuch für Hebammen* (1814, *Primer for Midwives*; 2nd edition, 1826). During this period, in addition to writing many articles for the medical and anatomical literature and to editing several journals, Wiedemann also wrote an introduction to the treatment of accident victims (*Anweisung zur Rettung der Ertrunkenen, Erstickten, Erhängten, vom Blitze Erschlagenen, Erfrornen und Vergifteten; nach den neuesten Beobachtungen entworfen*, Brunswick, 1796; second edition, 1804) and advice on smallpox vaccination (with K.H.

[3] Antoine-François de Fourcroy (1755-1809), Professor of Chemistry at the University of Paris and, incidentally, well known to entomologists as author of *Entomologia parisiensis* (1785)

Himly and T.G.A. Roose, *Über das Impfen der Kuhpocken, für besorgte Mütter*, Brunswick, 1800). He also produced a second, revised, edition of the standard textbook on human anatomy and health by J. Stuve, *Lehrbuch der Kenntniss des menschlichen Körpers und der Gesundheitslehren* (Brunswick, 1805).

Wiedemann's star continued in the ascendant, and Luise writes that "he was greatly respected and loved, both as a doctor and as a friend". He received but turned down offers from Dorpat and Würzburg. In 1804 he delivered the Duchess of Oels of a son in a very long and difficult birth, and gained great credit from this. But later that year an event occurred which had a devastating effect on the rest of his life. In the course of a delivery which he supervised in person as was his custom, he infected himself with a venereal disease, most probably syphilis. He was seriously ill on and off for years, and never fully recovered. Fortunately it was diagnosed immediately and Luise appears to have escaped infection.

In 1805 came an invitation to Kiel as Professor of Medicine, to open a new maternity hospital where all classes of women could be admitted and where midwives were to be trained. He accepted the post, since it enabled him to give up general medical practice, but Luise was most unhappy about leaving her settled life in Brunswick and travelling to Kiel which was then in Denmark and part of the Duchy of Holstein. Although it had a university founded in 1665, Kiel at that time was a small and very provincial town. The title of Royal Danish "Justitsraad" went with the post, which was eventually (1829) upgraded to "Etatsraad"[4]. Wiedemann was very ill on the journey, and needed nursing when they reached Luise's brother G.P. Michaelis at Harburg, near Hamburg; another infant died; in Kiel, the new institute had not been built, nor was there even a house to live in. The first priority was Wiedemann's health, and he was granted a year's leave of absence. "It was immediately decided that W should first be fully restored to health, and this is what happened up to a certain point, but never again was he the energetic man who could overcome every adversity. It was only later, after visiting Aachen spa in 1817, that he became stronger and could again ride, bathe and swim." The year was spent in the south of France.

Conditions for Wiedemann's medical work in Kiel were difficult. At this time Denmark was the centre of a Scandinavian maritime empire and a major military power in northern Europe, but she sided with Napoleon and lost much after 1814. Even before that, the course of the Napoleonic Wars had brought political and economic ruin to this part of Europe. It was not until 1809 that Wiedemann finally found a house that was suitable for use as a maternity hospital, and he had to put his own money into the essential building and conversion work. It functioned like this until 1826, when it was further enlarged, again mainly at Wiedemann's expense. Moreover, he had constantly to contend with numerous bureaucratic and financial obstacles. He ran the midwifery courses along very strict lines, and based his teaching on his own *Lesebuch für Hebammen*. He gave the instruction himself, both in Danish, which he had rapidly learned, and in German.

During the English bombardment of Copenhagen in 1807, the Danish Crown Prince and his wife were in Kiel. Wiedemann supervised the Princess's confinement. Crown Prince Frederik was son of the mad King Christian VII (1749-1808), who was married to Queen Caroline Mathilde (1751-1775): her affair with the court physician Struensee and the liberating reforms that they initiated had caught the literary and romantic imagination of Europe (e.g. Mary Wollstonecraft, 1796, *A short residence in Sweden, Norway and Denmark*, letters 7 and 18; and, most recently, the contemporary ballet *Caroline Mathilde* by Flemming Flindt). Frederik ruled Denmark during his father's madness from 1784 to 1808 and then alone, as Frederik VI, until 1839.

In 1811, Wiedemann travelled south to Italy for his health, and it was on his return that Luise's brother G.P. Michaelis died. Of the two sons that came to live with them, Gustav Adolf Michaelis (1798-1848) was the object of Wiedemann's es-

[4] "Justitsraad" (Counsellor of Justice) and "Etatsraad" (Counsellor of State) were honorary titles given to men of high rank in the social hierarchy during the period of absolute monarchy in Denmark (1665-1849). Although initially functional titles for state officials, by Wiedemann's time they had become purely honorary and were bestowed upon officials of the 5th or 4th rank (Justitsraad) and of the 3rd rank (Etatsraad).

pecial pride and pleasure. He followed in his uncle's footsteps and became his assistant in 1830. As Wiedemann's health declined during the 1830s, he took over more and more of his uncle's duties, and after his death was appointed director of the clinic. Although one of the great names in the development of obstetrics as a scientific discipline, he became embroiled in a controversy with I. P. Semmelweiss over puerperal fever and committed suicide by throwing himself in front of a moving train.

In 1812 the last of the children was born. In all, the Wiedemanns had 6 daughters and 3 sons, but 2 daughters and 2 sons did not survive their first year[5]. Rudolph, the only son to live beyond infancy, followed his father and became a medical doctor. Two daughters, Emma and Minna, married brothers in the Welcker family, Emma the law professor Karl Theodor Welcker (who achieved notoriety as a leading player in the radical politics of the 1840s) and Minna the pastor Ernst Welcker. It was when visiting Emma and her husband in Bonn that Wiedemann travelled on to Stolberg for his first meeting with Meigen. The Welcker family home was at Ofleiden, which Luise sometimes writes as Obernfleiden, on the River Ohm in Hessen. The Wiedemanns frequently visited the Welckers, and Luise wrote in old age that she would like to be buried at Ofleiden. A third daughter, Zoe, married Justus Olshausen who had been a regular dinner companion in the Wiedemanns' house with the Michaelis boys and Rudolph Wiedemann, "and father treated these three like sons". Zoe died tragically young, leaving her mother inconsolable, and Olshausen eventually married a sister of the Michaelis boys. He became Professor of Oriental languages at Kiel University, and Luise remained greatly attached to him, "whom I shall always love as a mother, and respect as a friend". It was through the Olshausen family that many of the Wiedemann records and papers survived.

Wiedemann continued working and travelling, and his health slowly improved. In 1817 (*Zool. Mag.* 1 (1)) and in certain other sources he is referred to as "Professor der Arzneikunde" ("Professor of Pharmacology"). For many years he served on the Board of Public Health for Schleswig Holstein, and in 1825-1826 was Vice-Chancellor ("Prorector") of the University. In 1817 he visited Bad Aachen ("the baths greatly increased his strength"), and Luise mentions visits to Copenhagen, Hamburg and Berlin though without going into details. It seems very probable that the time he had to spend in enforced sedentary occupation to avoid overtaxing his fragile strength led to the sudden expansion in his interest in taxonomic entomology from around 1814. At other times, when the entire Wiedemann family was travelling together to visit friends and relations, something of the energy and drive of the old Wiedemann returned: "Wiedemann hurried on alone from Ofleiden where we had been, simply from love of the sciences, and we travelled a bit later ... Father went on further, which was so typical of him as he was accustomed to travelling alone, roaming through the world with few requirements, either on foot or by coach, rising early and always in good spirits". It is known too that when at home and when there was an opportunity he would begin work at 5 am and write descriptions all day. His enthusiasm was such that he could never restrict his lecturing duties to obstetrics, and his name appears in lecture lists for all branches of natural history, especially entomology. It was presumably for these lecture courses that he wrote and published his *Tabulae animalium invertebratorum* (1810). An old colleague remembered him as always on the lookout for insects - "selbst während der Prüfungssitzungen machte er Jagd auf Insekten" ["even during examinations he went hunting for insects"].

During the 1820s, Wiedemann accomplished all that he could in Dipterology. In 1830, when he attended a scientific meeting in Hamburg and exhibited at both the medical and the entomological sessions (Anon 1831), his active life was drawing to a close. By 1829 his eyesight had become so poor that he was compelled to give up close work in order to preserve his vision (Wiedemann 1830: vi). His work at the maternity hospital also declined since he suffered a number

[5] Conrad Rudolph (1797-1798), Emma (1798-1844), August Ferdinand (1800-1801), Minna Eleonore Louise Friedericke (1801-?), Maria (1804-1805), Dora Bertha Zoe (1807), Zoe Anne Caroline (1809-1829), Rudolph Waldemar Benvenuto (1811-?), Theone Isabelle Rosalie Auguste (1812-?)

of minor strokes after 1828. These affected his motor abilities but not his mental activity: he carried out operations until 1831, and entries in the day-book recording the confinements and case-histories continued in his hand until 5 September 1839. Small wonder that Luise complained that no one had any right to regard themselves as indispensable. She records his slow but inexorable physical and mental decline after 1828. Her account of their last years together runs as follows:

"But Wiedemann was no longer able to travel with us. He had made the journey to Berlin for the natural history meeting with too much haste, and had overtaxed his strength with so much work there as well as attending the social meetings, followed by the rapid journey home, for he knew that his friend Himly and wife as well as his brother Eberhard would be in Kiel. As a result he had an attack of the shakes, and this recurred so he never again felt that he had the same intellectual powers, and he suffered ever more frequent attacks. How sad it was to see the progressive decline of a man with such intellectual gifts, to whom work of all kinds came so easily and who was such a charming companion! And it was particularly difficult and taxing for me because he no longer felt himself capable of undertaking any business and was himself aware of his decline.

"In the meantime Theone had also presented us with a grandson who gave his grandfather much joy. How touching it was to see him lay his hand in blessing on the infant, the dear William, for whom he also acted as godfather. Theone had a difficult confinement, and it was a trying time. It was also difficult because after a short time I too began to suffer from gout so that I was unable to leave the house at all, for years on end. This eventually became such a habit that I no longer had any desire to do so as long as I could still see the water and the trees. As I have already written in father's *Life*, he gave up his home and retired, feeling that he could no longer accomplish anything as he had formerly done. We now moved to the Grube house. There I could still see trees and water, and I could still go for an hour to Theone though I rarely did; for Wiedemann, who was so used to having me around although we seldom conversed because he did not care for it, paid no heed to this, but my presence was a necessity for him and only once did I find it difficult not to go out. Moreover, I was almost always alone because all our acquaintances felt that Wiedemann did not find it pleasant to have anyone about him except for the children, who now visited us almost every day. Theone and the little boy came to see us, and so did Michaelis, and also the dear good Olshausen who has remained a faithful son although Zoe is no longer alive. Marie has made him as happy as it is possible for anyone to be after such a loss, and he has dear children whom Zoe would have loved!

"Father became weaker and weaker and longed to be released from his post; but he always spoke of this with his colleagues and never with us. It came to the point that he thought that he still had to accomplish something and believed in a certain indispensability. This was such a distressing time, and even more so to attempt to describe how it was to live through it day after day, not being able to help, and not even being able to care for him as I was no longer in a position to do so, and, when I was unable to help him myself, he himself could not appreciate that I was 71 years old just like him. I too fell ill, and suffered indescribably.

"Father W came once more to me and, as on the previous occasion, he remained standing by my bed. I did not want to ask him to sit down, for I was afraid that he might fall from the little chair when he tried to stand up again. So he stood there, and it was the last time that I spoke with him. I asked how it had been for him at mealtime. My granddaughter Emma from Ofleiden told me that grandfather had not eaten anything. I enquired further, and learned that he had sunk down on to the sofa. I immediately sent for Michaelis. He was put to bed, running a violent fever, and frequently asked for me.

"On the night that he died I lay in the most excruciating pain, and fell asleep from exhaustion when the pain abated.

"Now I was alone, at night as well. How I regret that I did not throw myself down before him and beg him once again to forgive all my faults. Right up to the end he thought so highly of me and loved me, and was so kind, and always so cheerful. Often when he sat there on the sofa I

was moved, mindful of the old days, to throw myself into his arms but I restrained myself because the excitement of doing this would have strained him as well as me, but now I wish I could have those times back so that I could do it. Now that I have recovered I could again seek out some company, but I prefer to remain at home. At that time it was as if I had a beloved child at home whom I could not and did not wish to leave, and now wherever I may be I am drawn back to my home. I shall never forget 31st December 1840. He rests in peace.

"I recovered slowly, and the many business affairs after Wiedemann's death caused me a great deal of anxiety. Many unexpected matters came to light, but everything was subsequently resolved to my satisfaction and so I can look forward to ending my life without further worries. In spite of his considerable income, no great sum was saved because Wiedemann spent much money on books and also on many works of art which, when sold, did not fetch a quarter of what they cost. Nevertheless I have my dowry of 5,000 thalers and another 1,000 thalers of capital which will eventually be divided up among my four children. So I now live in Kiel, quietly and in seclusion, and have only been out of the house a few times in almost two years ... The quiet life has become a necessity for me, and I do not feel comfortable in company and prefer to read, which I can still do without spectacles, as it is difficult for me to understand people even though it is a pleasure to converse with a few of them, both men and women. I am also delighted that my friends, both old and young, have not completely forgotten me, and I count among them State Counsellor Hegewisch and Falck, as well as Olshausen and Michaelis who have remained loyal to me."

As mentioned earlier, Wiedemann was a man of wide interests and accomplishments, described by Schipperges (1967) as "ein enzyklopädisch eingestellter Gelehrter der Aufklärung" ["an Enlightenment scholar of encyclopaedic endowments"]. In addition to his main field of obstetrics, he carried on researches in anatomy, mineralogy, conchology and, of course, entomology, and he was a member of many scientific, medical and natural history societies (e.g. Göttingen, Westfalia, Jena, Hannover, Avignon). He had a deep interest in modern languages and published a multi-volume *Chrestomathie zeitgenössischer britischer Schriftsteller* (*Chrestomathy of contemporary British writers*) [which may be the same as a two-volume translation mentioned in one source as *Modern English Poems*, 1815-1816]. A man of broad cultural interests, he assembled a large collection of books and paintings. He took the greatest pleasure in the developing talents of his daughter Minna as a singer and performer on the fortepiano. Luise writes of how welcome were the annual visits of his brother Eberhard, who contributed a fine bass voice to their musical circle.

So far as money was concerned, it appears that Luise had some cause for complaint, for Wiedemann had a very cavalier attitude towards this commodity. His income was large but was easily spent. Although he replaced her dowry, the frequent journeys for his health (always accompanied by his library of books) meant that little could be saved towards their old age, and Wiedemann spent so much "for so many hobbies, such as minerals, books and paintings". It was noted above how Wiedemann used his private funds to subsidise building work on his maternity hospital, and he also used his own money to support Meigen (see below, section 4).

In 1827 Wiedemann's collections included 5,000 minerals, and over 3,500 species of Diptera of which over 900 were exotic. He sold his insect collection for 300 thalers to Wilhelm von Winthem of Hamburg some years before his death, once he became incapable of caring for it (see Weidner 1993). After his death the mineral collection was purchased for Kiel University by the Queen of Denmark, for 300 thalers. His library fetched 1,000 thalers. The paintings had been sent to Hamburg for sale some years prior to this but were all destroyed in a warehouse fire.

Wiedemann was said by a contemporary to be one of the best and most reliable teachers of obstetrics in Germany, and his international contacts and experience enabled him to give direction and leadership to the German schools. Grabe (1949) characterises him as one of the great pioneers of obstetrics in Germany. As a practising obstetrician, he held ideas that were in advance of his time. For example, he was very much opposed

to the customary but dangerous practice of forcibly removing the afterbirth. His recommendation was that midwives should at most apply compression from the outside to facilitate the natural expulsion of the afterbirth. He took a middle path between the English methods of natural birth and the French methods using mechanical contrivances, and all sources refer to him as an exceptionally gifted and skilful practitioner, humane and concerned only for the good of his patients. He believed that the doctor should in the first place be nature's assistant. According to Michaelis' statistics, the infant mortality (excluding still births) for 2573 births in his hospital between 1805 and 1832 was 5.7%, a very low figure for the time. On average he would have 2-3 students active at his clinic, and he would personally accompany them to the confinement rooms and supervise their activities. Every case report included his own detailed personal comments (see Grabe 1949). Through his energy and drive, the maternity hospital in the little town of Kiel achieved an international reputation (Schipperges 1967), which was further enhanced by the work of his nephew and successor G. A. Michaelis. His achievement appears all the more remarkable when set against the background of his chronic ill-health from 1804 onwards.

The Wiedemann home was a focal point for much intellectual and social activity at Kiel. The music evenings have already been mentioned, and the latest developments in the arts, in painting, sculpture, literature, were eagerly discussed. His colleagues met there regularly, and after 1815 the *Kieler Blätter* [*Pages from Kiel*] were prepared each day. There can be no doubt that those associated with him were greatly inspired by his lively mind and wide-ranging interests.

No portrait of Wiedemann is known to exist (letter from S.L. Tuxen, 1974; and letter of 24.ii.1992 from H. Vosgerau of the Institute for the History of Medicine and Pharmacy, University of Kiel).

3. WIEDEMANN THE DIPTERIST

Wiedemann's roots were in Germany. He was essentially a medical man and a teacher, with connections at the highest levels in the royal courts, the universities, and the learned societies of north-west Germany and Denmark. His influence in these circles as well as the income from his various medical duties must have been considerable, for he was able, for example, to found and edit two important though short-lived journals: *Archiv für Zoologie und Zootomie* (vols 1-5, 1800-1806, 2356 pp., Berlin and Brunswick), which contained many papers on anatomy by himself; and *Zoologisches Magazin* (vols 1-2, 1817-1823, 749 pp., Kiel and Altona), which contains his early entomological papers. His entomological interest focused on the Diptera, but he also published descriptions of numerous Coleoptera and of at least one Hymenopteran. Although Dipterology can only have been a spare-time hobby begun in early middle age in a life full of medical activities and responsibilities, Wiedemann had an entirely serious attitude towards what he was doing. He was no dilettante, and brought the same high-minded purpose to his Dipterology as did to his other professional and intellectual pursuits. He was in contact with all the leading Dipterists and many other entomologists of the day, and his relationship with J.W. Meigen (see section 4) was particularly fruitful. He came to see himself as the successor to J.C. Fabricius (1745-1808) in the field of exotic Dipterology and as doing for the exotic Diptera what Meigen was doing for the European Diptera.

Wiedemann was highly regarded by his contemporaries and by subsequent generations of Dipterists as a careful worker and describer, and even a cursory glance at his papers shows a number of clear advances on the work of his predecessors and, indeed, of many of his contemporaries. In his later papers his procedure when describing species, both old and new, was to include a brief Latin diagnosis, a full description which was more detailed than most of those published at the time and generally in German, the sex of the specimens, the locality where they were collected, and the collection in which they were deposited; sometimes the collector was also included.

Reference was made above to his years in Brunswick (1794-1805), and during that time he was associated with J.K.W. Illiger and J.C.L. Hellwig and, after 1801, with Count Hoffmans-

egg (see also section 6). The activity of these three had made Brunswick a centre for entomology (even Fabricius had chosen to publish his last major work, the *Systema Antliatorum* of 1805, in Brunswick), and Illiger had attended some of Wiedemann's lectures. He took part in the drive for accuracy and precision that Hoffmansegg and Illiger were bringing to zoological terminology and nomenclature and to the descriptive method (Illiger 1800), and he introduced into his own work a consistent and precisely-defined terminology for morphological structures and, most especially, for colours.

It was at the insistence of his publisher that his magnum opus, *Aussereuropäische zweiflügelige Insekten* (1828, 1830) was published in German and not in Latin, and it was conceived as an extension of Meigen's work on the European Diptera (Wiedemann 1828: iii-iv). The work contains descriptions of about 1000 new and 500 old, mainly Fabrician, species. Wiedemann followed Meigen in his concept of genera, and if he is to be faulted it is in his very conservative view of genera when faced with the bewildering diversity of tropical Diptera then becoming available in European collections.

In one of his early papers (Wiedemann 1817b: 63), he stated that he had compared his specimens with those in Fabricius' collection (at that time in Kiel) in order to ensure the accuracy of his identifications. He observed that he only used specimens bearing Fabricius' labels because the others, without labels, were subsequent additions and did not always belong to the same species. This shows a clear understanding of the type-specimen concept in the modern sense of original, authentic, specimens.

The preface to volume 1 of *Aussereuropäische zweiflügelige Insekten* (Wiedemann 1828) contains a stern critique of the shortcomings in Fabricius' work. In a letter to Westermann of 1818 he had written: "It is time to leave the road he [Fabricius] so gloriously has trodden." But he was appalled by the errors and carelessness that he had found in Fabricius' work. In particular, he pointed out that Fabricius assigned species to the wrong genera, some species were described twice, the descriptions themselves were inadequate, the perception and description of colours was faulty, and the terminology was inconsistent. In several papers he took the opportunity to caution against the proliferation of species-descriptions and the multiplication of synonyms, and urged the need for careful descriptions.

He went to great pains to make his work comprehensive. He studied material from the private collections of two highly acquisitive entomologists, Wilhelm von Winthem of Hamburg (see Weidner 1993) and B.W. Westermann of Copenhagen (see section 5), both of whom allowed him to retain much material in his own collection. He also studied extensive collections in the museums of Copenhagen, Berlin, Frankfurt, Kiel, Leiden and even Vienna. Although he complained that the Vienna authorities had forbidden him access to their new collections from Brazil (Wiedemann 1828: v; see also Papavero 1971: 112-113), a certain amount of earlier material from Vienna was described. By an irony of fate, his personal collection was eventually acquired by the Vienna Natural History Museum. He studied Say's North American types from the Philadelphia Museum, but was unable to afford a visit to London to study the Linnaean types and the Fabrician types in the Banks collection, or to Paris.

The verdict of his contemporaries was typified by Swainson (1840: 369): "One of the first authorities upon dipterous insects, of which his descriptions are models of accuracy. It is to be regretted that he has published no systematic views on their arrangement, as his principal work is merely supplementary to that of Meigen." Almost a century later, Patton (1925: 181) wrote: "Wiedemann made very few mistakes, and showed himself to be a master of his subject; no dipterologist can afford to ignore his species." More recently, Fairchild (1967: 73) has written: "His descriptions were a great advance over the brief and often inaccurate diagnoses of his predecessors and most of his contemporaries, and remain models of clarity and insight. In general, there has been little difficulty in recognising his species."

4. WIEDEMANN AND MEIGEN

Johann Wilhelm Meigen (1764-1845) is rightly regarded as the father of European Dipterology. A

man of humble origins, and entirely self-taught, he was an outstanding entomologist, botanist, draughtsman and artist, musician, linguist. His autobiography, narrated in a delightfully unassuming manner, was not published until comparatively recently (Morge 1974). The present author has given a summary and appreciation of Meigen elsewhere, and has dealt with many of the collectors and other Dipterists with whom he was in contact (Pont 1986).

The first contact between Wiedemann and Meigen took place in 1815. It is recounted by Meigen (in Morge 1974: 121, §41) as follows:

"It is necessary for me to go back a few years in this description of my life in order to give an account of the publication of my work on the Diptera. In 1815 I received a letter from Professor Wiedemann, in which that excellent and enthusiastic naturalist enquired if there was no longer any hope of my continuing the work that I had begun in 1804. He offered to support me in this work to the best of his ability as he had ready access to the collection of Professor Fabricius, who died in 1808, which was now the property of Kiel University. I replied that of course I was not averse to publishing this continuation or even to preparing a completely new edition of this work if a publisher could be found, for such an undertaking exceeded my own financial resources, and that if this were to happen then I would accept his offers with grateful thanks. Wiedemann then wrote to the Kings of Prussia, Denmark and Württemberg, to the Emperor of Austria, and also to the then Crown Prince Karl of Brunswick, asking them to support me in this undertaking. This support was soon forthcoming. Our esteemed king [Friedrich Wilhelm III of Prussia] gave 40 Friedrichsd'Or, the King of Denmark and the Crown Prince of Brunswick each gave 20 Friedrichsd'Or, Emperor Francis 100 Viennese guilders, and the King of Württemberg 150 Rhenish guilders[6]. In the summer of 1816[7], Wiedemann, one of whose daughters was married to Professor Welker in Bonn, himself came to Stolberg and stayed with me for a week[8]. He also arranged that all the European Diptera in the Imperial Museum of Vienna should be sent to me by the curator of the Museum, Mr Megerle of Mühlfeld. I now had plenty to do, dealing with the many new species that were sent to me for study, drawing them, describing them, and including them at the right point in my work.

"On his return journey, Wiedemann travelled via Berlin and sent me a further batch of material from the celebrated Hoffmansegg collection and from the legacy of Professor Pallas which the latter had collected in southern Russia and in Tauria [= the Crimea]. With all these additions the total of known European species now rose to a considerable figure."

Despite the differences in their background and professional lives, the two men got on extremely well and apparently remained close friends until Wiedemann was forced to give up all entomological activity. Wiedemann appears to have been unusually altruistic, and went to considerable lengths to support Meigen (see Meigen 1818: vii-viii). It was not just moral support and encouragement that he provided. He obtained loans of material for Meigen's work, as noted above by Meigen himself. He found a publisher for Meigen, and, by canvassing for a list of subscribers, enabled the work to embark on a sound commercial footing. Volume 2 (Meigen 1820: unnumbered page [365]) notes that the King of Denmark had subscribed for 20 copies and the Prussian Chancellor von Hardenberg for 10 copies, magnanimous gestures which can only have been brought about through Wiedemann's personal connections and initiatives.

In this connection, it is instructive to note that Luise Wiedemann (1929: 111) reproduces a letter (stated to be in the library of the University of Kiel) from her brother-in-law Schelling which

[6] See also Meigen (1818: iii).

[7] This is certainly an error for 1817 and Meigen's recollections in old age were mistaken in this detail. Wiedemann (1818a: 1) and Luise Wiedemann (1929: 45) refer to this as 1817: "Als ich im Sommer 1817 in des Grafen von Hoffmansegg Sammlung zu Berlin für das Meigensche Werk über die Zweiflügler arbeitete ...". Meigen himself (1818: vii), in his preface dated 20 June 1818, referred to Wiedemann's visit to Stolberg "im verflossenen Sommer".

[8] Elsewhere Meigen (1818: vii) refers to this visit from Wiedemann, as well as his generous and extensive support, and mentions in addition that Wiedemann brought him part of the Fabricius collection and many of Fallén's species to study in Stolberg.

illustrates the process of obtaining royal patronage for projects of this nature. This letter is dated 28 March 1818, a time when Schelling was living in Munich, though he had not yet attained his subsequent eminence as Professor of Philosophy at the University, President of the Academy of Sciences, and Curator of the Scientific Collections. Wiedemann had asked Schelling to transmit a letter to the King of Bavaria, and the date of Schelling's response suggests that it was a letter requesting support for Meigen. Schelling's letter contains his apologies for the great delay in writing, an explanation of how he had passed on the letter to Privy Counsellor Ringel who dealt with all the King's private affairs, how the matter had been overlooked due to the various absences of the King and the numerous other matters that he had to deal with, and finally a request to Wiedemann to send him another copy to pass on to the King. Whatever Wiedemann's response was to this, the outcome appears to have been negative, and despite the influence of his powerful friend Schelling Wiedemann was unable to interest the Bavarian monarch in Meigen's work.

Wiedemann wrote the introductory section on the Diptera for Meigen's work (Wiedemann & Meigen 1818: xiii-xxviii), which, as Meigen remarks in his own foreword, contains only a few additional comments and alterations by Meigen himself. Meigen (1818: viii, footnote) acknowledged all this: "My noble friend has engaged in all these exertions with the greatest unselfishness, although they have involved him in considerable expense, without making the slightest claim and without accepting any reimbursement, simply out of his love for the science. I feel compelled to make this profession in public in order to prevent any incorrect judgements being made, although I know only too well that his modesty will not leave him comfortable with this acknowledgement."

Wiedemann again stayed with Meigen for several days in 1822, and urged him to visit Kiel and study his own and Fabricius' collections. Meigen undertook this arduous journey the following year, setting off on 23 June 1823. Out of his personal funds, Wiedemann paid his travelling expenses and also a small bursary to compensate for his loss of earnings as he was away for 12 weeks altogether. Meigen gratefully acknowledged this support: "auf dieses gewiss höchst edelmuthige Anerbieten ..." ["with this truly extremely generous offer ..."]. He went first to Hamburg, where he stayed with the family of Wilhelm von Winthem, and then continued on to Kiel. Travelling overnight through a storm in an open carriage, he arrived at Kiel at 9 am, soaked to the skin. He found his way on foot to Wiedemann's house where he was welcomed with great warmth. Wiedemann sent for his luggage, and he changed into dry clothes. Almost immediately Wiedemann brought him a box of flies for study, "which, however, I had no great desire to look at for the moment". He was saved by Luise Wiedemann: "My God, just let him get his breath back before you start burdening him with your flies!" The box was put on one side, at least for the moment (Meigen in Morge 1974: 132).

The two men sailed to Copenhagen, where they were guests of Westermann. It is interesting to note that the wealthy Westermann had Professor Wiedemann staying in his own house, whilst Meigen was assigned a room in Westermann's Phoenix warehouse. However, this seems to have had the purely practical purpose of giving Meigen an undisturbed milieu where he could work as he wished, for the room was clean and light. He was thus able to utilise the longer daylight hours to rise at 4 am and begin his work, and could still read by natural light at 11 pm. Wiedemann worked with him in the Royal Museum, and they both took their meals at Westermann's house, where they also spent their leisure hours (see also Tuxen 1974).

Wiedemann and Meigen travelled on to Lund as guests of Fallén and Zetterstedt. There the polyglot table talk (in four languages) seems to have fascinated Meigen: he and Fallén conversed in French, which Fallén preferred to German; Zetterstedt knew little French, and spoke Latin with Wiedemann; and Fallén and Zetterstedt spoke Swedish to each other (Meigen in Morge 1974: 138). On the return journey, Meigen stayed for a further three weeks with the Wiedemann family in Kiel, and left full of gratitude for the generosity and warmth of their hospitality.

This journey bore fruit in the increased amount of material that Meigen was able to include in his work from North Germany and South Scandina-

via, from volume 4 (1824) onwards. As a consequence, Wiedemann's collection contains numerous types of Meigen species. It also resulted in the exchange of material, for example between Wiedemann and Fallén: specimens with Fallén labels are to be found in Wiedemann's collection in the Vienna Natural History Museum, and Wiedemann material is present in Fallén's collection in the Stockholm Natural History Museum.

Wiedemann and Meigen met again in 1825 when in Berlin for a scientific conference. They worked in the Royal Museum ("Wiedemann war stäts mein Gesellschafter im Museum" ["Wiedemann was always my companion in the Museum"] (Meigen in Morge 1974: 149)), and were also together during the social meetings.

Meigen wrote nothing further about Wiedemann in the sections of his autobiography covering the years 1825 to 1844, although he had noted earlier (Meigen in Morge 1974: 122) that he had prepared the 12 plates of illustrations for Wiedemann's great work on the exotic Diptera (1828, 1830). He also advertised Wiedemann's volumes in his own work (Meigen 1826: v-vii; 1830: unnumbered page [404]).

How best can we judge Wiedemann's unusually generous and altruistic support of Meigen? It is most likely that the obvious explanation is the correct one. Wiedemann had been a lifelong enthusiast for entomology, and was particularly obsessed with Diptera. Whatever he did was carried out with energy, determination and thoroughness, and clearly with the desire to create a reliable and lasting body of knowledge. As a teacher, he was used to encouraging students and their research and to fulfilling his own aspirations through his pupils. Perhaps his relationship with Meigen was in part an extension of this. An enthusiast for Diptera but realising his own limited opportunities because of his full professional life, he recognised Meigen's ability and did all he could to promote and support a project so dear to his heart. Furthermore, in an age with an attitude quite different from our own towards money and enterprise, when great personal wealth was as frequently used to support philanthropic activities as for personal consumption and ostentation, the giving (and receiving) of patronage was an accepted channel through which a man of talent was able to make a living, whether he was a writer, painter, musician or scientist. The spirit of William Godwin's *Political Justice* (1793), that those with a surplus have a duty to deploy it where it will provide maximum good, was not yet dead.

5. WIEDEMANN AND WESTERMANN

Bernt Wilhelm Westermann was born on 2 October 1781 in Copenhagen, where his father was an assistant secretary in the Ministry of Commerce (and not at Ringkøbing on the west coast of Jutland, as has frequently been stated). As a youth he collected insects and was fired with the ambition to travel to the tropics, particularly to the Far East. His opportunity came in 1801, after he had joined the Copenhagen firm of Hemert as a clerk: he was able to travel to India in one of the company's ships, and in the British colony of Calcutta joined an English firm in which he eventually became a partner. From 1801 to 1811, when his firm went bankrupt, his home was in Calcutta from where he could see the Danish colony of Frederiksnagore, which included the two villages Serampore (previously called Srirampur) and Akna, on the opposite bank of the Hooghly River (see Tuxen 1980: fig. 1). In 1811, he moved from Bengal to Batavia [modern Djakarta] in Java, which was under British administration from 1811 to 1816[9]. He married a widow and acquired a considerable fortune thereby. A son from his wife's first marriage, H. van Teylingen, remained in Batavia as a medical doctor and collected insects for Westermann. He decided to return to Denmark, and set off home via the Cape of Good Hope in December 1816[10]. He stayed just over a year at the Cape (January 1817 to February 1818), and finally reached Copenhagen in 1818.

Unwilling to "retire" at such a young age to enjoy his wealth and insect collections, he plunged back into business. He became a wholesale dealer, shipping owner, and proprietor of the

[9] These were the years when Sir Thomas Stamford Raffles (1781-1826) was lieutenant governor of Java.

[10] Evidently he did not visit Mauritius, though Wiedemann studied a few insects from that island from some other undefined source.

"Phoenix" sugar-refinery in the Slotsholmsgade in Copenhagen. This was founded on trade with the Danish colonies in the West Indies, operating throughout the 17th and 18th centuries, and was one of three such processing plants in 19th century Copenhagen. From 1821 to 1838 he also worked in a voluntary capacity at the Royal Museum of Natural History in Copenhagen. In his later years his hearing began to fail, and he increasingly withdrew from society until he became totally deaf. He died on 10 March 1868.

Westermann was evidently a man of charm and great kindness. The naturalist Schnebbelei who met him in Java wrote to him on 26 December 1814: "Nobody has proved so kind to me at Batavia than you" (Tuxen 1980: 37). Dohrn (1868: 215) commented: "Dass er von seinen bedeutenden finanziellen Mitteln im Interesse der Humanität jederzeit freigebigen Gebrauch gemacht ...".

Westermann's only scientific publication was a "letter" to Wiedemann solicited by the latter, outlining some of his collecting experiences and some features of insect life in the tropics (Westermann 1821; in French translation: Westermann 1833; see also Audinet-Serville 1833). This paper gives a little information on collecting sites, and also includes a number of footnotes with descriptions of new species by Wiedemann.

Westermann's collecting can be summarised as follows (see Westermann 1821: 411-427; Tuxen 1980: 43):

- India, Bengal, Calcutta. Labelled "Bengalen", April, May, July, August, September, 1808, 1809, 1810, 1811. Westermann mentions only the Burdwan district by name (100 km NNW of Calcutta), and notes that the rainy season was the best time for collecting. He lived in Calcutta, on the opposite side of the Hooghly River from the Danish colony of Frederiksnagore.
- Java, Batavia. Labelled "Java" or "Batavia", March, May, 1814, 1815, 1816. His business kept him in Batavia for most of the time, where he collected in his own garden and in neighbouring villages and rice fields. On a few occasions he collected in the inland mountains, and noted how different the insects were. Again, he found the rainy season the best time for collecting.
- South Africa, Cape of Good Hope. Labelled "Cape of Good Hope", all months, 1817. He collected in the Cape Town area, in the dunes and on the seashore; also around Table Mountain, including the peak and the far side. He noted the greatest variety of insects in spring (September, October, November).

After his return to Denmark, Westermann collected insects around Copenhagen up to 1834, and continued to acquire as many tropical insects as he could find, so long as their condition was perfect. He obtained material from Liebmann (Mexico), Högberg (Veracruz, Mexico), Chenon (Guinea), Ecklon (Cape), William (Himalaya Mts) and Zebes (Crete), as well as from entomological dealers; and, of particular interest to us here, from Trentepohl (China, Sumatra), Hornbeck (West Indies) and P.W. Lund (Brazil).

He had contacts with all the leading entomologists of the day from 1828 to 1850 (enumerated in Henriksen 1925: 162), and his voluminous correspondence is still preserved in the University Zoological Museum, Copenhagen. He exerted a considerable influence on contemporary entomologists, but through his personality and generosity rather than any scientific publications.

His collection was renowned for its size and the beautiful preparation and condition of the specimens. The French Coleopterist Dejean commented early on: "Il possède une très belle collection, et il a bien voulu me faire plusieurs envois de la plus grande beauté." It seems that it was more of interest to him for its aesthetic properties than as a scientific resource, but he was more than generous with it: "[er] sei im entomologischen Verkehre der nobelste, freigebigste, mit seinen Materialien zur Förderung jenes wissenschaftlichen Unternehmens bereitwilligste Mann." On his death there were some 45,000 species, of which 31,000 were beetles. The collection, together with the cabinets and display cases, was bequeathed to the Royal Museum of Natural History, Copenhagen on condition that it was kept separate and that it had its own curator: in the event this was Løvendal, who had been Westermann's assistant in his old age. These conditions were kept until 1900, when parts of it (though not the Diptera) were amalgamated with the Museum's collection.

On his return to Copenhagen in 1818, Westermann contacted Wiedemann and entrusted him with the identification of many of his insects. Wiedemann published descriptions of some Coleoptera, but was most interested in the Diptera. Initially 308 examples of 234 species were sent to and identified by Wiedemann. He worked steadily on Westermann's Diptera for over 10 years,

incorporating the results into his monographs on exotic Diptera (Wiedemann 1828, 1830). It is fair to say that the Westermann collection was the most significant single element in Wiedemann's work, and Wiedemann was lavish in his praise not only of the material but also of the beneficence of Westermann, for example: "Der gütigen freigebigen Mittheilung dieses eifrigen Sammlers verdanken wir acht und sechzig Arten von Zweiflüglern, als Dupletten seiner Sammlung, worunter sich nur achtzehn fanden die von Fabricius schon aufgeführt sind, und sechs, die wir in diesem Magaz. I. 40 u.ff. schon beschrieben haben, also vier und vierzig neue Arten, deren Beschreibung wir hier geben."

The correspondence between Westermann and Wiedemann is also preserved in the archives of the University Zoological Museum, Copenhagen (Spärck 1952; Tuxen 1980). The first letter from Wiedemann to Westermann is dated 25 September 1818. They wrote in English: perhaps this was an affectation, but it seems more likely that after his long years in the Far East Westermann was fluent in English but not in German. The two men must have met on a number of occasions. Wiedemann's first visit to Westermann was in 1821: Westermann reported that Wiedemann worked all day from 5 am on his descriptions, evidently making best use of his limited time and the hours of daylight. Tuxen also notes how the correspondence showed increasing personal warmth after they had met.

6. WIEDEMANN AND HOFFMANSEGG

No biographical information is available in English on Hoffmansegg, despite the crucial role that he played in the development of entomology in Germany and in the establishment of a natural history museum in the newly-founded University of Berlin. The following account is based on the biographies by Reichenbach (1850) and Lichtenstein (1856).

Johann Centurius Graf von Hoffmansegg[11] [Count Hoffmansegg] (1766-1849) was born at Rammenau in the Lausitz, some 4 miles from Dresden. Educated at the universities of Leipzig and Göttingen, he was fluent in several European languages, accomplished in the fields of painting, poetry and music, and interested in geography and history. His greatest passion, however, was for the natural sciences. After a brief spell of military service in the Saxon army, he took over the administration of his family estate at Rammenau in the early 1790s.

In 1793-1794 he undertook an 18-month natural history expedition through Hungary and Austria to Italy, collecting much entomological and ornithological material. This was followed in 1795-1796 by a six-month preliminary botanical exploration of Portugal, and then by a much longer expedition through France and Spain to investigate the natural history of Portugal. With H.F. Link (1767-1851), at that time Professor of Botany at Rostock, he spent 4 years (1797-1801) on this expedition and returned with materials that far exceeded his expectations. Valued connections were also established with all the leading botanists and zoologists in Paris.

Then began a more settled period of scientific research and publication. Hoffmansegg and Link jointly published the *Flore Portugaise; ou description de toutes les plantes qui croissent naturellement en Portugal* in 23 folio volumes with 109 colour plates (Berlin, 1809-1833), which was financed entirely by the Count who spared no effort or expense to achieve the highest standards: he even set up his own studio in Berlin and imported the most skilful colour printers and the best paper from outside Saxony. He himself undertook the zoology of the expedition. From

[11] The spellings Hoffmannsegg and Hoffmansegg are both common. Both Reichenbach and Lichtenstein consistently use the spelling -n-, the former even citing a plant genus *Hoffmanseggia*. Yet the spelling -nn- is twice used on page 4 of the *Protokoll*, the page preceding Reichenbach's obituary. The -nn- spelling seems more usual in the entomological literature. Wiedemann consistently used the -nn- spelling in his 1817 papers. Meigen also used the -nn- spelling in the first volume (1818) of his great work and in his autobiography (in Morge 1974); only in the list of subscribers (Meigen 1818: iii) does the -n- spelling appear once. Bibliographers spell the name with -n- (Percheron, Hagen, Horn & Schenkling) or -nn- (Agassiz, the London Natural History Museum printed catalogue and card indices). According to Dr Heidi Muggelberg (letter of 7.vii.1992), the Count always signed himself "Hoffmansegg" in correspondence, for which reason the -n- spelling is to be preferred and is used in this paper.

1801 he worked in Braunschweig [Brunswick] together with J.C.L. Hellwig (1743-1831) and J.K.W. Illiger (1775-1813). The insect collection of these three friends was amalgamated in 1802 and, as they worked to expand and improve it, it became the definitive reference for German and other entomologists during the early decades of the 19th century, eventually being the most complete and scientifically important private collection in Europe. Wiedemann too, in 1816, wished this collection to become a prime object of reference for work on identification and classification, and available to all entomologists (Muggelberg 1975: 277).

Despite his youth, Illiger was already the most profound and influential German entomologist of the time (see Muggelberg 1975). The collaboration of these three friends gave a tremendous impetus to the study of entomology in Germany, for professional scientists and for amateurs alike.

Hoffmansegg's material was valued particularly for its meticulous preparation, labelling, and reliable identifications. Using the connections that he had earlier made at the Portuguese royal court, he sent his devoted servant and curator F.W. Sieber to collect for him in Brazil for 12 years (1801-1813). Other collections from South America acquired by the Count are detailed in Papavero (1971: 48-49). He subsequently considered these years of intense scientific work with Hellwig and Illiger to have been the best years of his life. Late in 1802 he visited the spa at Aachen together with Illiger, and the two of them visited Meigen at Stolberg.

When Wilhelm von Humboldt (1767-1835), the scholar, statesman and brother of the celebrated naturalist Alexander von Humboldt (1769-1859), founded the University of Berlin in 1809, Hoffmansegg used his influence to have a natural history museum included in the plans, as a centralised repository for the public and private collections widely scattered through the German states, and in 1810 was able to secure the post of first director for his friend Illiger. His collection was moved to Berlin where it remained in temporary accommodation until the provision of space in the University. Illiger's early death from tuberculosis in 1813 shattered Hoffmansegg both psychologically and physically, and he temporarily gave up all involvement with entomology and the museum. M.H.C. Lichtenstein (1780-1857) took over as director of the Museum, a post he held for 40 years, with J.C.F. Klug (1775-1856) heading entomology as a separate unit. The mounting costs and indifferent reception of the *Flore* also added to Hoffmansegg's depression. In 1816, he sold the entire Hoffmansegg-Hellwig-Illiger collection to the Berlin Museum for 22,000 thalers[12] (the sale was actually completed in 1819), on condition that it was curated by Klug and not by Lichtenstein, and then retired to Dresden. Even before 1810 it had contained almost 9,000 European species and 7,500 "exotic" species. In 1820, according to Klug, it contained about 19,000 species.

In Dresden he settled into a routine of domestic and scientific work. He converted the Rammenau estate into a magnificent park and botanical garden, open for the citizens of Dresden. In 1825, at the age of 59, he married for the first time. He painted, and wrote poetry and translations: for example, he translated Schiller's play *Die Braut von Messina* into Italian, which astounded Italian critics by its fluency and idiomatic touch. He continued with scientific work, freely providing identifications and advice in great detail and depth for colleagues. He even began a new insect collection in the late 1830s. After 1844, ill-health compelled him to give up most activities, and he died on 13 December 1849. He was buried in Dresden next to the composer Carl Maria von Weber, whose remains had been brought back from London to Dresden in 1844 by Richard Wagner.

Hoffmansegg's importance lay in the enormous collection he formed, which provided a definitive point of reference for so many Germans at that time, and his true memorial was the continuing health and success of the Museum für Naturkunde of Berlin University.

7. WIEDEMANN AND PALLAS

The insect collections of the great Russian natu-

[12] According to information obtained for me by Dr Heidi Muggelberg (letter of 7.vii.1992), this large sum is roughly the equivalent in purchasing power of 220,000 to 230,000 DM.

ralist Peter Simon Pallas (1741-1811) were acquired by the Berlin University Zoological Museum. It was there that Wiedemann saw them, and he was given the Diptera for his personal collection. He himself narrates the circumstances (Wiedemann 1818b: 1-3):

"During the summer of 1817, whilst I was in Berlin studying the collection of Count Hoffmansegg in connection with Meigen's work on the Diptera, I made the interesting acquaintance of that extremely perceptive entomologist J.F. Schüppel who has already impressed the entomological public most favourably with his excellent illustrations for Klug's monograph of the genus *Sirex*. I expressed my admiration to Mr Schüppel for his drawings of beetles, which were really outstanding and beyond praise, and which he was preparing with incomparable finesse and beauty from the entomological estate of the celebrated Professor Pallas. I also admired the industry which that indefatigable scientist had bestowed upon the collection and preservation of the tiniest species of beetles from his country. The charming modesty with which Mr Schüppel accomplishes all this (he was previously a bookseller), and the most engaging unselfishness with which he delights every scientific entomologist, would oblige the writer to offer him tokens of his gratitude in public if Mr Schüppel's own modesty did not compel him to keep silent. To be brief, Mr Schüppel gave the writer all the Diptera that could be found among Pallas' riches, to use for his scientific work.

"This gift consisted firstly of a number of insects belonging to the Diptera, and secondly of the manuscripts which the late naturalist left on this order. Whilst it is unfortunate that there is much in both categories that is unusable, there is also much that is extremely valuable and we hasten to make an announcement and presentation about the whole of this material.

"The Latin manuscript consists of some 25 sheets, eight of which contain preliminary drafts, whilst the rest were written later and are evidently ready for publication. Nevertheless, we would not be doing the public any great service if we were to allow this script to be published either in its original language or in translation. In the first place, there is understandably much in it that is already adequately known. In the second place, several species are assigned to genera to which they no longer belong according to present knowledge; but they are not sufficiently well characterised for one to determine to which genus they correctly belong. It is greatly to be regretted that the surviving remnants of the collection are not of the same standard as the manuscripts. Many species have been lost or, as may be the case with the smaller species in particular, they were not preserved by the late Professor Pallas but were actually described on the spot from living specimens. It is inevitable that many species will remain doubtful forever, and as there is already no shortage of unrecognised names in entomology we believe that we have done right by only publishing what is unclouded by any doubts or obscurities.

"The genera revised by Pallas are as follows: *Hippobosca*, *Tabanus*, *Oestrus*, *Conops*, *Asilus*, *Bombylius*, *Volucella* (but neither in the original sense of Geoffroy nor in the sense of Fabricius, but of *Nemestrina* Latr.), *Nemotelus* (in the sense of De Geer, therefore *Anthrax* of recent authors), *Bibio* (in the sense of Geoffroy), *Tipula*, *Culex*, *Empis*."

8. QUESTIONS OF AUTHORSHIP

There has been confusion over the authorship of certain names published in Wiedemann's and Meigen's works. This lies in two areas: on occasion both authors quoted verbatim and in quotation marks the descriptions of new species prepared by other workers; and both authors quoted unpublished manuscript or collection names that they found in the material that they studied, which were either used for new species or were cited as synonyms.

The *International Code of Zoological Nomenclature* (3rd edition, 1985) is quite unambiguous on matters of authorship:

- Article 50 (a), Identity of authors. "The author of a name is the person who first publishes it in a way that satisfies the criteria of availability. If it is clear from the contents of the publication that only one of joint authors, or some other person, is alone responsible both for the name and for satisfying the criteria of availability other than publication, then that person is the author of the name."
- Article 50 (g), Names first published as junior synonyms. "If a scientific name (taken, for example, from a label or

> manuscript) is first published in the synonymy of an available name ..., its author is the person who published it as a synonym, even if some other originator is cited."

In his paper on Diptera from the Kiel district, Wiedemann (1817b) attributed the names of the new species to "mihi" [= "to me", i.e. to himself], Hoffmansegg and Meigen. However, all the descriptions are actually by Wiedemann himself, and none are given in quotation marks as being from Meigen or from Hoffmansegg. Furthermore, all but one or two species are described from Holstein and were evidently collected by Wiedemann himself. Wiedemann, who was most probably writing after his visit to Meigen and Count Hoffmansegg, was quoting the manuscript or collection names of these two colleagues. The authorship of all these names should be attributed to Wiedemann.

The Pallas paper (Wiedemann 1818a) is much more complex. Wiedemann had edited and enlarged the Pallas manuscript notes, adding his own comments freely. It is necessary to read every line of the Latin and German text in order to see who has contributed the descriptive data for each new species. It has to be said that, in spite of his express desire not to burden the literature with superfluous or dubious names, Wiedemann has in fact done just that - though only when judged from the viewpoint of our late 20th century *Code* of nomenclature.

The following situations are found in the Pallas paper:

(1) For some species Wiedemann quotes only descriptive matter from Pallas' manuscripts: diagnosis and description in Latin. Sometimes a few words are added by Wiedemann in square brackets, also in Latin, of a non-descriptive nature: a clarification of the terminology, or the size or sex of the specimen.

Authorship: Pallas, in Wiedemann, 1818.

(2) For some species, Wiedemann quotes Pallas' diagnosis and description, and intercalates his own more extensive additions or comments in Latin (in square brackets). And/or he adds a paragraph in German with descriptive matter and his comments on the species, on the surviving material, on the generic assignment, or on synonymy.

Authorship: Pallas and Wiedemann, in Wiedemann, 1818.

(3) For some species, Wiedemann quotes Pallas' diagnosis and description in Latin, and gives further comments in German which are of a non-descriptive nature or which state that no Pallas specimens have survived, in other words Wiedemann had not seen the species for himself.

Authorship: Pallas, in Wiedeman, 1818.

(4) Collection names are mentioned (Pallas, Hoffmansegg); Pallas manuscript names are given as synonyms; even Meigen names are anticipated, as nomina nuda (not published by Meigen until 1820). All are unavailable as they stand.

Authorship: Wiedemann, 1818 [with an annotation as to the circumstances].

It is worth pointing out that similar questions of authorship arise in Meigen's work, where some species names are attributed to "Hgg.", "Wied." and others, especially in the early volumes of his work, since this has also caused confusion.

Meigen states that species not seen by him are marked " ". Wiedemann and Hoffmansegg sent him descriptions both of old species and of new species from their collections which he (Meigen) had not seen for himself, and the descriptions are given in quotation marks with the names attributed to "Wied. " or "Hgg. " and the authorship of the text also indicated, the latter being for the most part by Wiedemann. It should be noted that the Latin diagnoses preceding the German descriptions were composed by Meigen, but this does not affect the authorship of the names which, as Meigen intended, should be attributed to his collaborators. For example, see the following examples of new species in Meigen (1818):

On page 115, there is: "16. *Er. varia.* Hgg. " [*Erioptera*]. On page 124, there is: "9. *Limn. geniculata.* Hgg. " [*Limnobia*]. These are descriptions sent by Wiedemann of new species for which Hoffmansegg collection names are used. Authorship: Wiedemann, in Meigen, 1818.

Previously unpublished manuscript or collection names used by Meigen simply to provide names for new species for which he himself furnished the descriptions have to be attributed to Meigen alone. For example, the descriptions of "8. *Er. trivialis.* Hgg." [*Erioptera*] (Meigen 1818: 112), of "5. *Er. taenionota.* Wied." [*Erioptera*] (op. cit.: 111), and of "4. *Oc. flavipes.* Meg." [*Ocydromia*] (Meigen 1820: 353) are all

by Meigen himself, and the names are to be attributed to Meigen.

The same system applies to previously-described species that Meigen did not know from personal knowledge. For example, on pages 150-152 of volume 1 (Meigen 1818): descriptions no. 61 and 63 are original contributions from Hoffmansegg; no. 62 is quoted from Fabricius, and nos. 64 and 65 are quoted from Linnaeus.

9. WIEDEMANN'S MATERIAL (NOTES ON COLLECTORS AND COLLECTIONS)

Wiedemann did not often name the collectors of his material. Perhaps he did not know who they were in the majority of cases. Some of the biographical material given here has been traced through Papavero (1971, 1973) and Gilbert (1977).

Afzelius. "Von Adam Afzelius entdeckt/mitgebracht, vom grossen Dipterologen Fallén geschenkt." Adam Afzelius (1750-1837) was one of the "apostles" Linnaeus sent overseas on journeys of botanical exploration, and he collected in Sierra Leone. He was the collector of some of the first tse-tse flies (*Glossina*) to reach European collections.

Baggesen. "In der Sammlung des jüngsten, leider für die Wissenschaft zu früh in Paris verstorbenen Baggesen." Paul Baggesen (-1822), youngest son of the well-known and much-loved Danish author and poet Jens Immanuel Baggesen (1764-1826). When his father left Copenhagen for Paris for the last time in December 1820, Paul accompanied him, and both he and his mother died there in 1822.

Berlin, the Royal Museum. "Mus. reg. Berolin; in Museo Regio Berolinensi; Mus. reg. Berol.; in Museo Berolinensi; im Berliner Museum; aus dem königl. Museum zu Berlin; im Kön. Berliner Museum." Also: "In Museo academico Berolinensi; in Museo academ. Berolinensi." Also: "Aus dem königl. preussischen Museum."

This period spanned the reign of Friedrich Wilhelm III (1797-1840) of Prussia, who transformed Berlin from a mere provincial capital into the city which, along with Vienna and Munich, was to dominate German intellectual life during the 19th century; he founded a new Berlin university in 1809, and did more for the arts and sciences in Prussia than any other Hohenzollern king.

From its inception, the Zoological Museum has been part of the University of Berlin. Originally called "Zoologisches Museum an der Königlichen Friedrich-Wilhelms-Universität in Berlin", its present title is "Zoologisches Museum und Institut für Spezielle Zoologie des Museums für Naturkunde an der Humboldt-Universität zu Berlin".

The collectors and collections from South America are discussed by Papavero (1971).

Berlin, the Academic Museum. "In Museo academico Berolinensi; in Museo academ. Berolinensi." See: Berlin, the Royal Museum.

Prince Christian Frederik, the future King Christian VIII of Denmark (1786-1848). "In der Sammlung Seiner Königlichen Hoheit des Prinzen Christian; in der Sammlung Sr. Königl. Hoheit des Prinzen Christian zu Koppenhagen; in Sr. kön. Hoh. des Prinzen Christian Sammlung." Even by 1830 this collection had been greatly damaged as a result of neglect, and no Wiedemann types are represented among the surviving remnants now in the University Zoological Museum, Copenhagen (Zimsen 1954: 5). A detailed history of the collection is given by Henriksen (1925: 166-169).

Colsmann, Johannes (1771-1830). "Colsmann's Sammlung." Zimsen (1954: 7) mentions the collection of Colsmann, a Copenhagen medical doctor and later Professor of Surgery, but this was a collection of Coleoptera and contained no Diptera (Henriksen 1925: 160-161).

Copenhagen, the Academic Museum. "Im akademischen Museum zu Koppenhagen/Kopenhagen; in Museo academico Havniensi; in Museo academico Havn.; in Museo academ. Havn.; in Museo acad. Havn.; in Mus. acad. Havn." This refers to the Copenhagen University collection

which at the time of Professor Morten Thrane Brünnich (1737-1823) included a number of important collections. They were neglected and much damaged in the early part of the 19th century, and in 1862 were finally amalgamated with the collections of the Royal Museum to form the present University Zoological Museum collection in Copenhagen (Zimsen 1954: 7).

Copenhagen, the Royal Museum. "In Museo Regio Havniensi; in Museo regio, Mus. reg. Havn., Mus. regio, in Mus. reg.; im Kön./Königl. Koppenhagener/ Koppenhag. Museum (later as Kopen-); im kön./königl. Museum zu Kopenhagen/Copenhagen; im Koppenhagener Museum."

The nucleus of the Royal Museum collection in Copenhagen (now the University Zoological Museum) was the collection built up jointly by Count Ove R. Sehestedt (1757-1838) and Niels Tønder Lund (1749-1809). These two friends were senior government officials, and were able to use their influence to have insects collected in the Danish colonies in Guinea (West Africa), Tranquebar (India) and the West Indies. Much of the work of Fabricius was based on their collection, and it was purchased by the Danish government after the death of Lund (Zimsen 1954: 5-6). Specimens studied by Wiedemann are easily recognised from his characteristic hand-written labels.

Note: On its own, "im Königl. Museum" refers to Copenhagen, not to Berlin: cf e.g. the statement "im Königl. und im Berliner Museum".

Eschscholtz, Johann Friedrich (1793-1831). "Im Berliner Museum von Eschscholtz." Eschscholtz was born and died in Dorpat, Estonia, where he was a medical doctor and Professor of Medicine at the University. From 1815 to 1818 he was naturalist on board the Russian expeditionary vessel "Rurick", and collected principally in Brazil, the Pacific islands and on either side of the Bering Strait (Kamchatka, Aleutian Islands). South American collecting stations were in Brazil (Santa Catarina state) and Chile (Concepción). Some of the "Rurick" material is said to be in Dorpat Museum, Estonia (Horn & Kahle 1935: 69).

Fabricius, Johann Christian (1745-1808). The celebrated Kiel entomologist. "In Museo Fabricii; Mus. Fabr.; in Fabricius Sammlung; im Fabricischen Museum." This refers to Fabricius' personal collection, at that time in Kiel University but eventually, after many decades of neglect, transferred in 1950 on indefinite loan to the University Zoological Museum in Copenhagen. Most of the Diptera in this collection were severely damaged or destroyed through neglect, but pins and labels have been preserved.

Wiedemann's work on the non-European material in this collection is of great significance since his redescriptions and generic re-assignments of the Fabrician species are all that are now available to guide us in the interpretation of many Fabricius names.

Frankfurt Museum. "Im Frankfurter Museum; ex Museo Francofurtano." Mostly from South America (Heyden collection, collector Freyreiss), and N E Africa (collector Rüppell). This is now the Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt.

Freyreiss, Georg Wilhelm (1789-1825). Born in Frankfurt, he lived and travelled extensively in Brazil from about 1812 onwards. Details of his journeys are given by Papavero (1971: 56-60). Some of his Diptera were acquired by the Frankfurt Museum and von Heyden, through whom they were sent to Wiedemann. The name is spelled "Freireiss" on the labels.

Germar, Ernst Friedrich (1786-1853). A leading German coleopterist. "Mus. Prof. Germar; in Prof. Germars Museum in Halle." Germar continued the work begun by A. Ahrens, *Fauna Insectorum Europae* (24 fascicules with 600 plates, 1812-1847). Ahrens produced the first two fascicules (1812, 1814), Germar and F. Kaulfuss the third (1817), and Germar alone the remaining 21 (see Rautenberg 1957). Several fascicules contain names attributed to Wiedemann (e.g. Germar 1824), but these should be credited to Germar and not to Wiedemann. Most of Germar's non-Coleoptera collections are in the Deutsches Entomologisches Institut, Eberswalde (Horn & Kahle 1935: 89).

Gistel, Johannes Nepomuk Franz Xaver (1803-1873). The notorious Munich Coleopterist, teacher, traveller, writer and natural history dealer (Strand 1919). In 1857, Gistel published an undated letter that he had received years earlier from Wiedemann, in which Wiedemann listed a number of Diptera species that he was giving to Gistel. This list contains several manuscript names. It is not possible to date this letter from internal evidence, though Wiedemann refers to his visit to Berlin (1817) and to his wish to obtain a copy of Kirby & Spence (*An introduction to entomology*). Little of Gistel's collection survives in the Bayerische Staatssammlung, Munich, which acquired it in 1877: most was lost through neglect or mislaid for lack of labelling, and part was destroyed by fire during the Second World War (letter from W. Schacht, 11.ix.1986).

Hagenbach, Jakob Johann. Mentioned only in the context of material from Java, "im Leydener Museum, von Kuhl gesandt, von Hagenbach mitgetheilt". Hagenbach was of Swiss origin. From late 1823 to early 1825 he worked in the Leiden Museum and then returned to Bern in Switzerland, where he died soon afterwards. As an entomologist, he served as an intermediary in transmitting Kuhl's material to Wiedemann (P.J. van Helsdingen, in litt.).

Hasselt, Johan Coenrad Van (1797-1823). A friend of Kuhl's who was also invited by the Netherlands Natuurkundige Commissie to survey the natural resources of Java. He collected from 1820 onwards and, although not mentioned by Wiedemann, appears on Leiden Museum labels with Kuhl, "K. & v. H.".

Hesse. "Pastor Hesse" is not Johan Vilhelm Hesse (-1815), who collected (and died) in Guinea and whose material was studied by Fabricius (see Zimsen 1964). "Mus. n. a Hessio donatus." Wiedemann (1818b: 40) wrote "[er] brachte bei seiner Rückkehr in's Vaterland auch dem Herausgeber - an ihn durch Jugendfreundschaft geknüpft - eine schöne Sammlung von Insecten aller Ordnungen ..." Nothing is known about this Hesse.

Heyden, Carl Heinrich Georg von (1793-1866). Born in Frankfurt, where his whole life was spent. He and other Frankfurt entomologists founded the entomological section at the Senckenberg Museum in 1822, although a number of collections were already there (Franz 1967). He did not personally visit Brazil (Kraatz 1866), but arranged for Wiedemann to study the material collected by Freyreiss in Brazil in 1820 and 1821.

Hoffmansegg, Johann Centurius, Count von (1766-1849). "Mus. Hoffmannseggii; Mus. Hgg.; aus dem Hoffmannseggischen, jetzt Königl. Museum in Berlin; in der Hoffmannseggschen Sammlung; Graf Hoffmannseggs Sammlung." Count Hoffmansegg was the leading patron of botany and entomology of the day in Germany, and formed an enormous collection of insects from all over the world (see section 6 above). Wiedemann studied his collection in Berlin on several occasions (1817, 1825), working on the exotic material himself and arranging for the European material to be sent to Meigen. Wiedemann often used and published various Hoffmansegg collection names (as did Meigen), and in fact his collection in the Vienna Natural History Museum contains many species with the Hoffmansegg collection names still retained, sometimes re-identified by Wiedemann. In 1816, Hoffmansegg gave up entomology altogether and sold his collection to the Berlin Museum where it remains to this day.

Hornbeck, Hans Baltzar (or Balthasar) (1800-1870). "In (Herrn) Hornbeck's Sammlung zu Kopenhagen." A medical doctor from Copenhagen, who worked in the West Indies from 1825 to 1844 (Puerto Rico and Virgin Islands). His collection of insects was auctioned after his death. So far as the fate of the Diptera collected by Hornbeck and acquired by Westermann are concerned, the types no longer exist, but other specimens identified by Wiedemann are still in the Westermann collection in Copenhagen (Zimsen 1954: 7).

Kuhl, Heinrich (1797-1821). Together with J.C. Van Hasselt, sent by the Netherlands Natuurkundige Commissie to survey the natural resources of the East Indian colonies. Leaving for Java

in July 1820, they made several collecting trips across the island. Kuhl fell ill and died in September 1821. The collections from Java, labelled "K. & v. H.", are in the National Museum of Natural History, Leiden.

Lehmann, Johann Georg (1792-1860). "In Professor Lehmann's Sammlung in Hamburg." Principally a botanist, who founded and directed the Hamburg Botanical Gardens. In his early days he also dealt with the Hamburg fauna, and in 1824 published a paper on Diptera. This contains descriptions of new Diptera, some of which were his own discoveries ("mihi") and some of which were based on material studied or donated by Wiedemann ("Wied. in litt."). All these names should be credited to Lehmann. Wiedemann also refers to some Egyptian material in Lehmann's collection. In 1821, Meigen made drawings of plants from dried specimens in Professor Lehmann's collection, for the latter's work on the Asperifoliae. Meigen also visited Lehmann's botanical garden when in Hamburg in 1823. The fate of Lehmann's zoological collections is unknown: most likely they were split up and dispersed after his death (see Weidner 1967: 97-101, portr.).

Leiden, the Rijksmuseum. "In Museo Lugdunensi; in Museo Lugdunensi, a Professore Rheinwardt allata; in Mus. Lugdunensi Rheinwardt, in Museo Lugdun. Rheinwardt, in Museo Belgico Lugduni Bat.; im Leydener Museum; im Leidener Museum." Mostly Java, "im Leydener Museum, von Kuhl gesandt, von Hagenbach mitgetheilt" or "von Professor Reinwardt mitgebracht". The National Museum of Natural History in Leiden was founded in 1820 through the amalgamation of several collections, with C. J. Temminck as the first director.

Lund. "Von Dr. Lund". This is Peter Wilhelm Lund (1801-1880) (as distinct from Niels Tønder Lund: see above under Copenhagen), who collected insects in Brazil. After completing his studies he was found to be suffering from tuberculosis and moved to Brazil where, for the rest of his life, he was based at Lagoa Santa, some 350 km north of Rio de Janeiro. Lund is particularly well-known for his very rich collections of subfossil animal and human bones from Brazilian caves. Westermann acquired his most striking insects, whilst the remainder went to the Royal Museum, Copenhagen.

Pallas, Peter Simon (1741-1811). "Aus Pallas Nachlasse, in meiner Sammlung." - "von Herrn Schüppel in Berlin geschenkt." The great Russian naturalist, born in Germany, who went to Russia in 1767, to the court of Catherine II, and remained there for the rest of his life (see Smith in Jardine 1850: 17-76). Diptera material in the Wiedemann collection, now in the Vienna Natural History Museum (see section 7).

Philadelphia Museum. "Im Museum zu Philadelphia; im Philadelphischen Museum; im Museum der Akademie von/zu Philadelphia." Now the Academy of Natural Sciences, Philadelphia. In 1830, Philadelphia was the second city of the United States, with a population of 160,000. Only species described by Say are involved, mostly seen by Wiedemann and possibly including syntypes; some also stated to be "in meiner Sammlung". See also under Say.

Aus dem königl. preussischen Museum. See: Berlin, the Royal Museum.

Reinwardt, Caspar Georg Carl (1773-1854). Material from Java, collected in 1820, in Leiden Museum. From 1815 to 1822 Reinwardt was based in Java, where Westermann met him, and travelled to many of islands of the East Indies, eventually returning in 1822 to the Netherlands, where he became Professor of Natural Sciences at the University of Leiden. He corresponded with Westermann from 1817 onwards.

Rüppell, Wilhelm Peter Eduard Simon (1794-1884). Originally a Frankfurt businessman, Rüppell was compelled by suspected tuberculosis to seek warmer climates, and in 1817 decided to devote his life to scientific pursuits. His accomplishments included geography, ethnography, history, archaeology, astronomy, geology, palaeontology and zoology, though his favourite subjects were mineralogy and numismatics. His first great

journey, from January 1822 to September 1827, took him from Cairo, through the Sinai peninsula, then south from Cairo, Fayum, Thebes, and into present-day Sudan; Dar Dongola was his base for a while, and El Obeid the most southern point reached; on another phase of this expedition he crossed Sinai again and sailed down the Red Sea, touching at Jedda (Saudi Arabia) and Massawa (Ethiopia) (detailed itinerary in Mertens 1949: 30-54). A second journey, 1831-1834, was devoted to the exploration of the Ethiopian highlands. Apparently he did not pay much attention to insects, but nevertheless his collections contained many new species. Wiedemann (1828: 545, footnote) stated that all species described in the Appendix from Egypt and Nubia were sent by Rüppell to the Frankfurt Museum. This material has been labelled as from "Abyssinia", but this was an error: Rüppell hardly touched Ethiopia on this journey, and "Nubia" [i.e. Egypt and Sudan], as given by Wiedemann, is correct.

Ruthe, Johann Friedrich (1788-1859). A Berlin schoolmaster who met Wiedemann and Meigen whilst they were attending a scientific meeting in Berlin in September 1825. Ruthe's Diptera collection was acquired by the Belgian Hymenopterist J.C. Puls (-1889) and is now in the Rijksuniversiteit, Gent. In addition to a small number of Meigen types (Pont 1986: 204), it contains specimens labelled "Kiel", which are obviously from Wiedemann.

Say, Thomas (1787-1834). The father of American entomology. Educated in Philadelphia, and a founder member of the Academy of Natural Sciences in Philadelphia in 1812. He was naturalist on Long's expedition into the far west and visited the Rocky Mountains during 1819-1820, and the sources of the St Peter's River, Lake Winnipeg, and Lake of the Woods in 1823. It was material from this expedition that was lent to Wiedemann. In 1825 he moved to the ill-fated, idealistic, communistic settlement of New Harmony, Indiana, where he remained after the break-up of the group until his death. His collection passed from the Academy of Natural Sciences of Philadelphia to the Museum of Comparative Zoology at Cambridge (Massachusetts) and back again. In the course of these peregrinations it was almost totally destroyed by beetle pests (Essig 1931: 756). It seems very probable that the material retained by Wiedemann and now in the Vienna Natural History Museum contains the only extant Say syntypes of Diptera.

Trentepohl, Johann Jacob (1802-1830). "In Dr Trentepohls Sammlung." Trentepohl studied medicine at Kiel, where he was a student of Wiedemann's. During 1826-1827 he was surgeon on the Danish East Asiatic Company[13] ship "Christianshavn", and, a fanatical collector, collected extensively around Canton [= Guangzhou] and Macao in south-east China and briefly in Sumatra (Wiedemann 1828: 542). In 1828 he went to Christiansborg in Guinea, where he died. He sent specimens to Westermann and to the Royal Museum, Copenhagen, where they were studied by Wiedemann. The fate of his own collection, which also contained types, is not known, and these types are presumed to be lost (Henriksen 1926: 201).

Vienna, Naturhistorisches Museum. "Im Wiener Museum; in Museo Viennensi." The Natural History Museum, Vienna.

Westermann, Bernt Wilhelm (1781-1868). "In museo Westermanni Havniae; in museo Westermanni; in Museo Westerm., in Mus. Westermanni, in Mus. Westerm.; in Westermanns Museum; in Westermanns Sammlung." Westermann was a wealthy Copenhagen businessman, and has been discussed above in section 5. His magnificent collection containing the insects that he collected personally in Bengal (India), Java, and Cape of Good Hope (South Africa), as well as material acquired during the half-century of life that still remained to him after his return to Copenhagen in 1817, was bequeathed to the Royal Museum in Copenhagen together with his cabinets and display cases. It contained 45,000 species. It was outstanding for its size and for the beautiful condition of the specimens, which can still be admired after more than a century together with the

[13] The buildings of the East Asiatic Company are shown in a painting dating from 1902 by the celebrated Danish artist Vilhelm Hammershøi (1864-1916).

striking elegance of the hand-written copperplate labels which give the species-name and locality. Hagen (1844: 130) commented on "die fast unglaubliche Sauberkeit und Schönheit der Exemplare". The Diptera still bear his original labels (Zimsen 1954: 6).

Wiedemann, Christian Rudolph Wilhelm (1770-1840). "In Museo nostro; in Mus. nostro, mus. nostrum, mus. nostr., mus. n., in Mus. ... et n.; in meinem Museum; in unserm Museum; in meiner Sammlung." Wiedemann kept collections of insects, shells and minerals. His insect collection filled 53 boxes in 1819. Some time before his death, he sold his insect collection to Wilhelm von Winthem of Hamburg, and in 1852 von Winthem's entire collection was purchased by Vienna's k. k. Hofmuseum (the present Natural History Museum, Vienna). Wiedemann's collection was still kept separate as late as 1880 (Brauer 1880: 106), but some time after this was combined with the von Winthem and other collections of Vienna Natural History Museum to form a single Diptera collection. The specimens have a printed label "det. Wiedemann" or "coll. Wiedemann", with the species-name usually added. Many are labelled with unpublished manuscript names of Wiedemann, and also with Hoffmansegg and Meigen collection names.

Most of the material that he described in his *Zool. Mag.* papers is stated in later papers to be in his own collection.

A number of Wiedemann specimens, bearing identification labels in his hand-writing, are present in the Fabricius Diptera collection in the University Zoological Museum, Copenhagen. Some of these could be syntypes.

Winthem, Wilhelm von (1799-1847). "In Museo de Winthem Hamburgi; Mus. de Winthem Hamburgae; Mus. de Winthem; Mus. de Winth.; in v. Winthems Museum; in von Winthems Sammlung." Von Winthem belonged to a long-established family of Hamburg merchants and continued the family tradition although all his talents and inclinations were for natural history. He amassed a huge collection of insects, concentrating on Diptera, Hymenoptera and Hemiptera. Most of his European Diptera were worked on by Meigen and he also purchased Wiedemann's Diptera and other insects. In this way he built up the most important Diptera collection of the age ("für Diptera möchte sie [die Sammlung] wohl zu den reichsten jetzt existirenden gehören" (Hagen 1844: 131)). In 1852, his collection was sold to the k.k. Hofmuseum in Vienna where, kept intact until at least 1880, it now forms part of the main Vienna Natural History Museum Diptera collection. Von Winthem's specimens can be recognised by the printed label "coll. Winthem", usually with the species-name added and with Wiedemann's or Meigen's own hand-written labels.

The Brazilian material described by Wiedemann (1819b) was lent but not collected by von Winthem, about whom Wiedemann (1819b: 40) wrote: "Die hier zu beschreibenden Zweiflügler verdanken wir fast alle an der Güte des Herrn Wilhelm von Winthem in Hamburg, eines jungen Mannes der in- und ausländische Insecten mit einem seltenen Eifer sammelt und schon manche willkommene Entdeckung gemacht hat."

10. LOCALITIES

Without a knowledge of Latin and German it is often difficult to disentangle the locality from the other data given with the description. This section enumerates all the localities listed by Wiedemann for his new species, including the various Latin and German forms that he uses, and where appropriate attempts some interpretation of the actual locations.

It is worth emphasising that in the early 19th century geographical knowledge of the world outside Europe was frequently sketchy, and also that politico-geographic terms did not always have the meaning that they now have. Wiedemann's "Pensylvania", for example, included the Rocky Mountains, Winnipeg, Arkansas and Missouri as well as other more familiar places.

Vaterland unbekannt. Also: Vaterland? Literally "fatherland", i.e. country of origin. Most of Wiedemann's specimens of unknown provenance came from the Vienna Natural History Museum, but a few were also from the National Museum of Natural History, Leiden.

NEW WORLD

Amer; aus Amerika. America, from America.

NEARCTIC

America borealis, America bor., ex America boreali, Amer. bor.; aus Nordamerika. North America.

Von Arkanses in Nordamerika, von Arkansa in Nordamerika, aus Arkansa, von Arkansa in Pensylvanien. USA, the state of Arkansas (not Arkansas city in Kansas state).

Ex Baltimore. USA, Maryland, Baltimore city.

Barton. USA, state not known. At least eight places of this name in the USA are known.

An den Felsengebirgen in Pensylvanien, Rocky Mountains in Pensylvanien. The Rocky Mountains, in the western USA.

Georgia Americae, Georgia Amer., e Georgia americana, Georgia americana, Georgia Americes; aus dem amerikanischen Georgien. USA, Georgia state.

Illinois. USA, Illinois state.

Aus Karolina. USA, states of North and South Carolina.

Aus Kentucky. USA, Kentucky state.

Aus Labrador. Canada, Labrador Peninsula in the provinces of Quebec and Newfoundland.

Aus Maryland. USA, Maryland state.

Am Mississippi. On the Mississippi [River]. This could be the southern USA, or the northern reaches of the river (North Dakota, Missouri, Illinois).

Aus Missuri, von Missuri in Nordamerika, aus Missouri, vom Missuri in Pensylvanien, von Missouri in Nordamerika. USA, Missouri state.

Aus Neu-Orleans. USA, Louisiana, New Orleans city.

Aus Neugeorgien. This is actually Georgia state, USA.

Aus Neuyork. USA, probably New York state rather than New York city.

Nordamerika. North America.

Am Ohio. On the Ohio [River].

Aus Ostflorida. USA, eastern Florida state.

Von Pembina in Pensylvanien. Pembina River, which flows southwards through Manitoba (Canada) and North Dakota (USA) into the Red River (see below).

In/aus Pensylvanien. USA, Pennsylvania state, but a very enlarged concept compared with modern Pennsylvania.

Aus dem / Im Nordwesten von Pensylvanien; aus dem nordwestlichen Gebiete von Pensylvanien. In the north-west / north-western region of Pennsylvania. This refers to the area west of the Great Lakes on the USA/Canada border.

Vom obern See im Nordwesten von Pensylvanien; an dem Ufer des obern See's im Nordwesten von Pensylvanien. On the shores of the upper lake in the north-west of Pennsylvania. USA, probably Lake Superior.

Savannah. USA, Georgia, Savannah city.

Am St. Petersflusse in Pensylvanien; am St. Peters- und dem rothen Flusse im Nordwesten von Pensylvanien. St Peter's River is the Minnesota River, a tributary of the Red River and contained entirely within the state of Minnesota.

Am rothen Flusse im Nordwesten von Pensylvanien. The Red River, which forms the boundary between the states of North Dakota and Minnesota in the USA and flows northwards through Manitoba (Canada) into Lake Winnipeg. This was one of the early centres of the fur-trapping trade, until overkill brought about the terminal decline of the "industry" soon after 1800.

Vereinigte amerikanische Staaten; in den vereinigten Staaten von Nordamerika. In the United States of America, which at that time consisted only of those states east of the Mississippi River, and the newly-acquired (1803) states of the Lousiana Purchase.

Aus den mittlern Staaten von Nordamerika; in den nördlichen und mittleren vereinigten Staaten von Amerika. In the central states of North America; in the northern and central United States of America. This probably refers to the states of the Lousiana Purchase (1803).

Aus Virginien. USA, Virginia state.

Winnepeek am rothen Flusse in Pensylvanien. Canada, Manitoba province, Winnipeg city, on the Red River.

NEOTROPICAL

America merid., America mer., Amer. mer.; aus Südamerika. South America.

America merid. insul. The islands of South America. This refers to the islands of the Caribbean Sea.

Von Antigoa. Caribbean, Leeward Islands, Antigua island.

Bahia in Brasilia, Bahia Brasiliae, Bahia Brasil; aus Bahia in Brasilien; aus Bahia. Brazil, Bahia state, Bahia city, now called Salvador.

Brasilia, in Brasilia, ex Brasilia, Brasil; aus Brasilien. Brazil.

Aus dem Innern von Brasilien. From the interior of Brazil.

Von Cassapawa, von Cassapawa in Brasilien, aus Cassapawa im innern Brasilien. From Cassapawa in the interior of Brazil. Brazil, Rio Grande do Sul state, Cacapava do Sol.

Cuba; von Kuba; ex insula Cuba. Caribbean, Cuba island.

Hayti. Caribbean, Haïti; the western half of the old Spanish Hispaniola island.

Ins. St. Domingo; St. Domingo. Caribbean, Santo Domingo, capital of the Dominican Republic which is the eastern half of the old Spanish Hispaniola island (under French rule 1795-1809, then part of Haïti until independence in 1844).

Von der Krabbeninsel bei Portorico. Island of Crabs, which is now called Vieques Island, just east of Puerto Rico, Caribbean Sea.

Von La Guayra in Columbien. Probably La Guaira, on the north-west coast of Venezuela. From 1819 to 1830, the modern countries of Ecuador, Colombia and Venezuela formed part of Greater Colombia.

Am La Plata-Strome. La Plata river (River Plate), between Argentina and Uruguay. Collector Bescke (see Papavero, 1971: 87).

E/Aus Mexico. From Mexico.

Von Minas Geraes. Brazil, Minas Gerais state.

Von Montevideo; von Montevideo in Brasilien. Uruguay, Montevideo city.

Von Oaxara [sic] in Mexico, von Oaxara [sic] im Mexikanischen. Mexico, the southern province of Oaxaca.

Aus Para in Brasilien. Brazil, now called Belém state and city.

Von Pernambuko. Brazil, Pernambuco state, Pernambuco city is now called Recife.

Portorico. Caribbean Sea, Puerto Rico island.

Rio Ianeiro; von Rio Janeiro. Brazil, Guanabara, Rio de Janeiro city.

Von Sct. Catharina. Brazil, Santa Catarina state; this perhaps refers only to the Ilha de Santa Catarina and Florianopolis city.
Von Sct. Croix. Caribbean Sea, Virgin Islands, St Croix Island.
Von Sct. Paul in Brasilien. Brazil, São Paulo state and city.
Von der Insel Sct. Thomas, von Sct. Thomas, Ins. St. Thom. Caribbean Sea, Virgin Islands, St Thomas Island.
Südamerika. South America.
Ex/aus Surinam. Surinam (formerly Netherlands Guiana).
Aus Westindien. West Indies.

PALAEARCTIC

No locality, in Wiedemann (1817b). Germany, Schleswig-Holstein, Kiel district.
In meinem Garten. The garden of Wiedemann's home on the outskirts of Kiel, close to the shore and overlooking the Kieler Förde.
Aus Aegypten. Egypt.
Von Alexandrien. Egypt, Alexandria city on the Mediterranean coast.
Algiriae; von Algier. Algeria, Algiers city.
Aus Andalusien. Spain, Andalucia province.
Aus Dalmatien. Dalmatia province, in the former Yugoslavia.
In Deutschland. Germany.
Egypten, aus Egypten. Egypt.
In Holstein. Germany, Schleswig-Holstein province. At the time, this area of north-west Germany was part of Denmark and formed the Duchy of Holstein.
Aus Japan. Japan.
Bei Kiel; aus der Gegend um Kiel. Germany, Schleswig-Holstein, Kiel and the Kiel district. Wiedemann's home town from 1805.
Lusitania. The western part of the Iberian Peninsula, generally referring to the modern Portugal.
Aus Marokko; Marocco. Morocco.
Von Mogador. On the Atlantic coast of southern Morocco, now called Eş - Şaouïra.
Ofleiden. Germany, Hessen: on the River Ohm just north of Homberg (between Homberg and Schweinsberg). Sometimes written by Luise Wiedemann (1929) as "Obernfleiden". Appearing on labels as "Ofleiden" or "Ofld".
Persia, aus Persien. Iran, and probably the northern areas. See Hyrcania in the next section (the former Soviet Union).
Aus Syrien. Syria, which includes the modern Syria and Lebanon.
Von Tangier. Morocco, Tangier (Tandja).
Von Teneriffa. Canary Islands, Tenerife island.
Vom Ural. Russia, Ural Mountains. The traditional division between Europe and Asia.

The former Soviet Union

Collected by Pallas, and perhaps also by Lepechin, and in Wiedemann's collection[14]. Abbreviations are those used in the recent *Catalogue of Palaearctic Diptera* (ed. Á. Soós & L. Papp): CET (Central European territory), ES (East Siberia), KAZ (Kazakhstan), SET (South European territory), TC (Transcaucasus), WS (West Siberia).

In deserto Barabensi. In the Baraba steppe. South-western part of WS.
A Borysthene (ad Iacum). From the River Dnieper, SET.
Ad mare Caspium, circa mare caspicum; am kaspischen Meere; in maxime australibus versus mare Caspium. On the Caspian Sea; in the extreme south towards the Caspian sea. This refers to KAZ or, less probably, to SET.
In deserto caspio, desertum caspium, in arenosis deserti caspici; aus der kaspischen Wüste. From the Caspian desert. KAZ.
In deserti caspici australibus, desertum caspicum [sic] australe, desertum caspium [sic] austr., in australioribus deserti caspii, in aridis australibus circa Caspium iacum; in/aus der südlichen kaspischen Wüste. In the southern Caspian deserts, in the southern deserts around the Caspian Sea. KAZ.
Ad Caucasum, circa Caucasum, versus Caucasum; in australibus ad Caucasum; am Kaukasus. In/towards/around the Caucasus Mountains. TC or SET (Northern Caucasus).
In/ex Hyrcania; in Hirkanien. The Hyrcanians were peoples living to the south-east of the Caspian Sea. This is probably Northern Iran, since Pallas possessed Gmelin's material from this area. But note that Pallas described his *Culex hyrcanus* from the northern coast of the Caspian Sea.
Ad Iaikum, ad Iaicum; ultra Iacum. On/beyond River Ural (formerly River Yaik), mainly in western KAZ.
Ad Irtin fluv., ad Irtin fl.; in desertis campis ad Irtin; in australibus Tatariae magnae, praesertim ad Irtin; am Irtis in Südrussland. River Irtysh, mainly in north-east KAZ.
Am kaspischen Meere. On the Caspian Sea.
Vom Kaukasus. From the Caucasus Mountains. TC.
Aus der Krim. From the Crimea. SET, Krim.
Versus/ad Obum fl. Towards the River Ob'. South-western part of WS.
Ad Rhymnum; a Rhymno usque ad Obum fl. per omnem Tatariam magnam; in australi deserto ad Rhymnum. Rhymnus is not listed by Graesse, Benedict & Piechl (1971), and has not been identified. According to Dr Kerzhner, Pallas mentions it in the descriptions of animals and plants given in his *Reise*, as a river in the vicinity of Gur'yev (KAZ). It may be a right affluent of the Ural River that no longer reaches the Caspian Sea.
In temperatis apricis Rossiae. In temperate sunny areas of Russia.
Rossia merid., Ross. merid., Rossia mer., Ross. mer., in meridionalis Rossiae, in australibus Rossiae, totius Rossiae australioris; aus Süd-Russland, Südrussland, aus dem südlichen Russlande. From southern Russia. SET.
Ad Salgir fluvium. River Salgir, Crimea, SET.
Sibiria; aus Siberien. Siberia.
In Sibiriae campestribus. In the Siberian plains.
Aus Süd-Russland, Südrussland. See Rossia merid.
Magna Tataria; desertum Tartaricum; in reliquis magnae

[14] I am very grateful to Dr I. M. Kerzhner for his kind assistance in identifying and/or verifying these localities.

Tatariae desertis; in australioribus deserti tartarici; in deserto tatrico; per omnem Tatariam magnam; in australibus Tatariae magnae; aus den grossen tatarischen, besonders den südlichen kaspischen Wüsten; aus der tatarischen Wüste, aus der südlichen tatarischen Wüste. Tataria = Tartary. Tataria magna most probably refers to the desert regions of the middle and lower Volga and adjacent areas as far as the Ural River or even the Irtysh River. CET and mostly SET, probably also KAZ and WS.

Ad Tanain, circa Tanain; in psscuis [sic] ad Tanain lecta; in Tauria, ad Tanain. In pascuis = in pastures. On/around River Don. SET.

Taurica Chersonesus; in montanis Tauricae Chersonesis; in Chersoneso Taurica. Both Tauria and Tauria Chersonesus refer to Crimea. SET, Crimea.

In desertis campis in transbaicalensibus. In the desert plains of Transbaicalia. ES.

Ad Volgam in australibus desertis; circa Volgam; in aridis australibus circa Volgam, in australibus circa Volgam; aus Südrussland an der Wolga. River Volga. On/near the Volga in the southern deserts. Probably CET, but also SET as the Volga is often mentioned together with the Caspian Sea.

AFROTROPICAL

Aus Afrika. Africa.

Aus dem wüsten Arabien. From Arabia Deserta, the modern Saudi Arabia.

Aus Benin in Afrika. Nigeria, the coastal region to the west of the Niger River.

Aus/von Guinea. West Africa, probably around the Danish settlement of Christiansborg which is now Teshi, close to Accra (Ghana).

Von Isle de France, insula Franciae. Island of France, now called Mauritius.

Vom Hoffnungskap. South Africa, the Cape of Good Hope, probably covering the whole area around Cape Town.

Aus dem Kafferlande/Caffernlande, aus der Kafferei. "Caffraria", an area now in South Africa; the land of the Kaffirs, a people settled at that time in the eastern Cape Province.

Vom Kap. South Africa, the Cape of Good Hope, probably covering the whole area around Cape Town.

Nubien, ex Nubia. Although Nubia generally equates with Sudan, the Rüppell material recorded by Wiedemann from Nubia in the Frankfurt Museum is actually labelled "Abyssinia" [Ethiopia]. Since Rüppell did not collect in Abyssinia during his first African journey (1822-1827), this is clearly an error and the labels will be rectified (W. Tobias, letter of 12.v.1992).

Aus Owar in Afrika. Nigeria, Owerri district in the Niger delta.

In/e Promontorio bonae spei, Promont. bon. sp., Prom. bon. spei, Prom. bon. sp., Prom. b. sp. South Africa, the Cape of Good Hope, probably covering the whole area around Cape Town. Mostly collected by Westermann; also a few by Pastor Hesse.

Vorgebirge der guten Hoffnung. South Africa, the Cape of Good Hope, probably covering the whole area around Cape Town.

Vom rothen Meere. The Red Sea, separating the Arabian Peninsula from the continent of Africa.

Von Sct. Helena. Saint Helena island, southern Atlantic. Collector Trentepohl.

Aus Sierra Leona; von Sierra Leone. Sierra Leone.

ORIENTAL & AUSTRALASIAN

Aus Amboina. Ambon Island. At the time part of the Dutch East Indies.

Aus Austral-Asien; aus Australasien. Australia ("Southern Asia").

Bengal, Bengalia, aus Bengalen. India, West Bengal, the area around Calcutta. This is where Westermann lived and collected, across the River Hooghly from the Danish settlement of Frederiksnagore (now Serampore (earlier Srirampur), 20 km N of Calcutta).

Von Canton. China, Guangdong province, Canton city (now called Guangzhou), on the southern coast.

Aus China. Material collected by Trentepohl was all from the Canton area (see above).

Iava. See Java.

India orientali, India orient., India or., Ind. or. East Indies or East India: see under Ostindien.

In insula Java, ex insula Java; Java, aus Java, von Java, von der Insel Java. Java, mainly from the area of Batavia, now called Djakarta (see section 5).

Von Makao, Macao. China, Guangdong province, Macao island and city, on the southern coast and close to Canton (= Guangzhou).

Von Manilla. Philippine Islands, Luzon island, Manila.

Von Nepaul in Ostindien. Nepal.

Aus Neuholland. New Holland is an old name for Australia, the "Terra Australis" (southern land) of 16th and 17th century explorers from Europe.

Aus Ostindien. "Ostindien" (and "India orientali") generally means East Indies, but could also mean East India. This is an unfortunate ambiguity, especially when type-localities need to be defined. It is usually Westermann's material that is so described, and Westermann collected in both East India (Bengal) and the East Indies (Java). However, it should be noted that (a) Wiedemann sometimes gave "Java" as the locality for a species in one of his earlier papers, and changed this to "Ostindien" in 1830; (2) "Westindien" only refers to the West Indies, and so by analogy "Ostindien" should be the East Indies. On balance, it is most likely that Ostindien refers to the East Indies in the majority of cases. To confuse the issue, however, Wiedemann's 1819a paper has "Ostindien" in the title, but describes species collected by Westermann in both Java and Bengal; moreover, Wiedemann (1830: 621) writes of "von Nepaul in Ostindien", though in this case it seems very possible that he did not know where Nepal was.

Von Port Jackson in Neuholland. Australia, New South Wales, now in the conurbation of Sydney.

Zwischen Sct. Paul und China. Collector Trentepohl. From the context, this cannot be St Paul Island in the southern Indian Ocean nor St Paul Island in the Society Islands. It seems most probable that it refers to St Paul's hill (now with a lighthouse), a landmark on the left bank of the

Malacca River by Malacca town, Malaya (see pp. 177-178 in *Malacca Strait and West Coast of Sumatra Pilot comprising Malacca Strait and its northern approaches, Singapore Strait, and the west coast of Sumatra.* Fifth edition, 1971. xiii + 475 pp., Hydrographer of the Navy).

Von Sumatra. Sumatra. Mainly collected by Trentepohl: it is not known exactly where Trentepohl collected in Sumatra, but it was a visit of only a few hours, most probably on the north coast, en route to China.

Tranquebar; aus Trankebar. India, on the east coast, Tamil Nadu (Madras) state, Tranquebar city.

Trevancour; misprinted as Trevamour (Wiedemann 1830: 179). India, a coastal area of south-west India, Kerala state, Travancore.

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