

Orchid Research Newsletter No. 56

When Worlds Collide

In 1831 two worlds collided on board HMS *Beagle*. FitzRoy was a 26-year-old Tory who had entered the Royal Navy College at Portsmouth at the age of 12 and became one of the world's most renowned meteorologists and coastal surveyors of his time. Darwin was a 22-year-old Whig, a would-be naturalist whose theories would shake the foundations of science and polarize society. FitzRoy loved the sea. Darwin loathed it. What forces conspired to bring this unlikely pair together and change the course of history?

HMS *Beagle*, a 90-foot brig 24.5 feet across, set sail on 22 May 1826 for her first voyage, under the command of Captain Pringle Stokes. The mission was to accompany the larger ship HMS *Adventure* on a hydrographic survey of Patagonia and Tierra del Fuego under the overall command of the Australian Captain Philip Parker King. Faced with the more difficult part of the survey in the desolate waters of Tierra del Fuego and feeling that he wasn't up to the task, Stokes fell into a deep depression. In the Strait of Magellan he locked himself in his cabin for 14 days, then (in August 1828) shot himself in the head and died of brain gangrene 11 days later. Captain Parker King then replaced Stokes with the Executive Officer of the *Beagle*, Lieutenant W.G. Skyring. They sailed to Rio de Janeiro where on 15 December 1828 Rear Admiral Sir Robert Otway named as (temporary) Captain of the *Beagle* his aide, Flag Lieutenant Robert FitzRoy (Nichols, 2003).

After an extensive refitting to FitzRoy's specifications, financed partly by FitzRoy himself, the *Beagle* was ready to undertake its new commission from the Admiralty -- to map the coastline of South America including a second survey of Tierra de Fuego. He asked Captain Francis Beaufort, then hydrographer for the Admiralty, to recommend 'some well-educated and scientific person' (King *et al.*, 1839) to accompany him. Beaufort wrote to Professor George Peacock of Cambridge, who then consulted Professor John Stevens Henslow. Henslow proposed the name of his prize student, Charles Robert Darwin, as a budding naturalist. Although Darwin leapt at the opportunity, his father was initially opposed to it; however, Darwin's Uncle Jos successfully interceded on his behalf. Darwin met with FitzRoy in Beaufort's office at the Admiralty in Whitehall in London, learned the particulars of the voyage, and accepted without second thoughts (Desmond and Moore, 1991).

On 27 December 1831 the *Beagle* finally set sail from Plymouth, England, for its second voyage, this one back to Tierra del Fuego to complete the surveys of the coast and then continue on into the Pacific, around the Cape of Good Hope, and back home again. Although Darwin spent much of the next five years seasick, FitzRoy wrote that Darwin otherwise acquitted himself well on the voyage, and the crew nicknamed him 'Our Flycatcher' and the 'dear old philosopher'. FitzRoy himself shortened that to 'Philos'. On Sunday mornings FitzRoy conducted church services on deck for the crew, sitting among the giant skeletons of extinct animals and other fossils, seashells, and plants that Darwin had collected (Nichols, 2003).

The *Beagle* anchored at the Cape Verde Islands, Rio de Janeiro, Tierra del Fuego, the Falkland Islands, and Concepción (Chile) before reaching the Galapagos Islands. They were there only 34 days, and the significance of his discoveries there would not dawn on Darwin for over a year. Then it was on to Tahiti, New Zealand, Sydney, Hobart (Tasmania), until they finally reached Falmouth, England, on 2 October 1836.

Darwin disembarked and raced home to see his family, while FitzRoy sailed on to Greenwich for more measurements. He and Darwin exchanged warm letters a week later, in which FitzRoy announced that he was engaged to marry one Mary O'Brien. Their marriage, which produced four children, lasted from December of that year until 1852 when she died. Two years later he married a cousin, Maria Smyth, with whom he had a daughter Laura. It was Maria who was likely the source of his religious fundamentalism later in life and helped to drive a wedge between him and Darwin, who was headed in the other theological direction (Gribbin and Gribbin, 2003).

After the *Beagle* returned, FitzRoy finished preparing the charts from the voyage for the Admiralty and also prepare long accounts of both *Beagle* voyages even though Captain Pringle Stokes was dead and Captain Parker King had retired. It was agreed that FitzRoy would write two volumes (one for each voyage), and Darwin would write up his account of the second voyage for a total of three volumes. (Gribbin and Gribbin, 2003). FitzRoy received the Gold Medal from the Royal Geographical Society for his work on the *Beagle* voyages and also served as 2nd Governor of New Zealand from 1843 to 1846. He became Rear-Admiral in 1857 and Vice-Admiral in 1863.



The FitzRoy gravesite in the churchyard of All Saints With St. Margaret Upper Norwood in south London.

He had inherited a tendency to depression from his mother's side of the family, compounded by the fact that he had been passed over for the post of Chief Naval Officer in the Marine Department. In his zeal to help Darwin collect specimens, he felt as if he had helped the devil. And so, on Sunday, 30 April 1865, shortly before 8 a.m. and in utter despair, he rose from bed and kissed daughter Laura on the way to his dressing room. There he picked up his razor and cut his throat. Darwin later contributed £100 -- over £6,700 (US\$10,000) in today's money -- toward a collection for Maria FitzRoy (Nichols, 2003).

We recently celebrated the bicentenary of the birth of Charles Darwin (1809); many of us have made pilgrimages to see his gravemarker in Westminster Abbey. However, the world seems to have forgotten the man born 205 years ago this month (July), who took Darwin around the world to gather specimens and fill notebooks that would be used as data supporting the theory of natural selection. This editorial was meant to rectify that and illustrate his grave in Upper Norwood in south London for many who have never seen it. The gravesite is maintained by All Saints Church and the National Maritime Museum to honour a man who was a great seafarer and Fellow of the Royal Society (nominated by none other than Charles Darwin). He was also the originator of the FitzRoy barometer and weather charts for the British coastline, which are still used today and have saved lives. It was he who invented the weather forecast and even the term 'weather forecast.' As much as he came to regret his role, it was he who was 'evolution's captain' (Nichols, 2003).



Buried along with Robert FitzRoy are his wife Maria (who died at Hampton Court Palace in 1889) and daughter Laura (who died in 1943).

Alec Pridgeon

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News from Correspondents

Please submit any news about newly completed research, future research plans and needs, change of address, upcoming or recent fieldwork, etc. to Alec Pridgeon (a.pridgeon@kew.org). Graduate students are especially encouraged to share the subjects of their thesis or dissertation with the international community. We will print submissions in the format below. Many thanks to those who have contributed.

James Ackerman (Department of Biology, University of Puerto Rico, P. O. Box 23360, San Juan PR 00931-3360) would like to add to last issue's list of the principal developments in orchid science in the last 10 years: 1) advances in our knowledge of orchid mycorrhiza, at both the ecological and molecular levels; 2) studies of selection

and genetic drift; 3) genetic structure of populations; 4) ecological studies with emphasis on conservation such as research on population dynamics.

Roberto Gamarra (Department of Biology, Faculty of Sciences, Universidad Autonoma of Madrid, Spain; e-mail: roberto.gamarra@uam.es), his colleagues Pablo Galán and Emma Ortúñez, and his graduate students are studying the micromorphology of seeds in all genera of tribe Orchideae. They would like to obtain mature seeds from field or herbarium specimens, principally from America and Asia. Also, they have finished their research on the labellar epidermis in the Iberian taxa of the genera *Ophrys* and *Serapias* using scanning electron microscopy.

In Memoriam: Howard Page Wood, M.D.

Howard Page Wood, M.D., husband of the former Anne Graydon Carrington, died from cancer at home on June 20, 2010, at the age of 87. Born in Philadelphia, Pennsylvania, Howard was a graduate of Haverford College (1943) and the University of Pennsylvania, School of Medicine (1947) with a specialty in psychiatry. At the Academy of Natural Sciences in Philadelphia, he was President of Friends of the Library from 1990–2000 and a Research Associate in Botany from 1991 until his death.

Howard achieved international fame with the publication in 2006 of *The Dendrobiums*, a monumental tome of over 800 pages and 659 color photos, most of which he took himself. After retirement from his psychiatry practice, Howard devoted almost two decades to writing and editing the book. The volume contains chapters on ecology, morphology, evolution and plate tectonics, pollination, taxonomy and nomenclature, and culture (drawing on his experience growing in four greenhouses), as well as botanic descriptions of more than 600 *Dendrobium* species, plus 15 appendices and more than 800 references. Many of his photos were taken on the 50+ trips that he and his wife Anne made to all the major continents, some of which are described in his book. In 2006, the International Association for Plant Taxonomy recognized his achievement by awarding him the prestigious Engler Silver Medal.

In addition to growing *Dendrobium* species, Howard was a prolific writer. He was co-author and a photo-illustrator for Botanica's *Pocket Handbook of Orchids* (2002) and a co-author of *Flora of China*, vol. 25, Orchidaceae (2009). He wrote at least 20 scholarly papers on *Dendrobium* and terrestrial species that were published in U.S. and international journals. In his later years, he was a frequent companion on local forays to find terrestrial species. One of these excursions resulted in his final paper, posthumously published in *Orchids* (August 2010). At his death he had drafted notes for at least five papers on subjects as diverse as species identification and the use of roots in systematics. Howard would lament his "one-day wonders," orchids that bloom for only a day. They would flower during the day when he was on rounds, and by time he returned to the greenhouse he would be faced with folded flowers.

A lifelong Quaker, his modesty, worldliness, charm, and dedication to orchid education made him a popular figure among hobbyists at all levels. Color blindness prevented him from becoming an American Orchid Society judge, but judges and scholars from around the world sought his counsel on species identification and taxonomy. He assumed a leadership role in every institution he joined and remained loyal to all of them to the end. He donated his papers and all his orchid slides to the

AOS to preserve his research and advance orchid education. He was a friend and inspiration to many and a true great in the history of orchid scholarship.

In addition to his wife, Dr. Wood is survived by his children, Julie G. Foster of Atlanta, Georgia, H. Page Wood, Jr. of Sherman Oaks, California, George C. Wood of Bryn Mawr, Pennsylvania, and M. Wistar Wood, III of Sherborn, Massachusetts, as well as 10 grandchildren.

Catherine Higgins
Mark Werther

The Seidenfaden Database of Orchids: a new online facility for research on tropical Asian Orchidaceae

The Seidenfaden Database of Orchids is an electronic register of the spirit-preserved orchid specimens and the original line drawings and colour slides of orchids that make up part of the Seidenfaden collection at the Natural History Museum of Denmark, University of Copenhagen. It is now freely accessible on the Internet.

Gunnar Seidenfaden and his collections

The renowned orchidologist and former Danish ambassador to Thailand, Gunnar Seidenfaden (1908–2001) was the main responsible for changing the Thai orchid flora from one of the least-known to one of the best-known orchid floras in tropical Asia. In his later years, he also published important revisions of the orchid flora in former Indochina, Peninsular Malaysia/Singapore, and certain parts of India. When Seidenfaden passed away, we lost not only the world's leading authority on the orchids of the southeast Asian mainland but also a former high-profile diplomat and one of the last pioneering explorers of the Arctic. Several obituaries and other papers on Seidenfaden and his collections exist; Friis (2002) compiled a list of Seidenfaden's scientific publications and provided particularly comprehensive information on his career.

Seidenfaden's orchid material (Sterll and Rasmussen, 1988; Pedersen, 2004), particularly his spirit collection and working file, still represent an important and useful source of data for taxonomic, morphological, and biogeographic research (Pedersen *et al.*, 2009). Similarly, his original illustrations still depict an almost complete set of Thai orchids, and they will continue to be useful for illustrating scientific papers and books.

Seidenfaden left all of his spirit samples, original illustrations, and working file to what is now the Natural History Museum of Denmark – together with a generous amount of money for the reorganization and future utilization of the material.

The Seidenfaden Database of Orchids

Already in 2002, C. Lange, K. Anker, I. Friis, and I designed the Seidenfaden Database of Orchids for registration of the diverse orchid-related material – and K. Anker, L. K. Skougaard, L. Fosdal, M. E. Hessellund, S. K. Jacobsen, and C. S. Madsen completed the registration of spirit samples, colour slides and line drawings during the following years. Now the database is accessible online for searching among more than 11,000 spirit samples, 3,000 original line drawings, and 7,000 colour slides in the Seidenfaden collection. This will enable everybody working on

tropical Asian orchids (especially the orchid flora of Thailand) to obtain original information on Seidenfaden's collections online and check for the existence of line drawings and colour slides depicting specific taxa and specimens. To access this new facility, visit the homepage of the Natural History Museum of Denmark (<http://snm.ku.dk>) or use the URL of the database itself (<http://130.225.211.89/seidenfaden/index.htm>).

Spirit samples

Seidenfaden's more than 20 expeditions in Thailand resulted in one of the world's largest living collections of orchids. Today, the extant parts of the living collection are accommodated in the Botanical Garden, Natural History Museum of Denmark. Largely by sampling from his living collection, Seidenfaden gradually built a comprehensive spirit collection of orchids from Thailand, and it was regularly supplemented with material that his many contacts sent him from other countries in tropical Asia. When Seidenfaden left his spirit collection for the Natural History Museum of Denmark, it contained about 11,000 samples.

The Seidenfaden Database of Orchids can be used for generating lists of spirit samples of particular taxa or from particular geographic regions and also for displaying collection data for individual samples. As a general rule, the fragile spirit-preserved material is not sent abroad on loan, but researchers, graduate students, etc. are welcome to study the material during visits to the Natural History Museum.

Line drawings and colour slides

Much of Seidenfaden's spirit-preserved orchid material was carefully sketched by Seidenfaden himself, and he thoroughly utilized his observations from this activity for delimiting taxa and preparing copious identification keys. Some of Seidenfaden's sketches were later inked in by professional artists (usually Kai Olsen, Poul Juul or Katja Anker), and the resulting line drawings were published in his revisions. All of the original line drawings are now kept at the Natural History Museum of Copenhagen.

Over the years, Seidenfaden also established a large collection of colour slides of Thai and other tropical Asian orchids, and he left all of the slides for the Natural History Museum of Denmark. Several photographers have contributed to this fine collection, but Gösta Kjellsson must be mentioned particularly, as he is responsible for a high number of close-up photographs of outstanding quality.

The Seidenfaden Database of Orchids can be used for locating existing line drawings and colour slides of particular species. All of the drawings and slides have been scanned in high resolution, and general copyright agreements have been signed with Olsen, Juul, Anker, and Kjellsson. The agreements make the illustrations available for new scientific publications on favourable terms. We hope that, in the not-too-distant future, we will be in a position to make the drawings and slides viewable online through The Seidenfaden Database of Orchids.

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Upcoming Conferences

We welcome any news about future conferences for promotion here. Please send details to Alec Pridgeon (a.pridgeon@kew.org) as far in advance of the event as possible, remembering that the *Orchid Research Newsletter* is published only in January and July of each year.

Recent Orchid Nomenclature

New orchid names may now be accessed on the IPNI website:

(www.ipni.org/ipni/plantsearch?request_type=search&output_format=query&ret_defaults=on)

Click on "Show additional search items" on the right-hand side of the screen. After the search page appears, type in **Orchidaceae** under family name and (for example) **2005-11-30** under "Record date" and "Added since." This will pull up a list of all names added to the IPNI database since 30 November 2005.

Recent Literature

Anna Lynch provided micromorphological references, and for this we are grateful. We will consult a variety of other sources for recent literature, and you will find a more extensive range of journals from more disciplines than ever before. If you are aware of any recent citations not listed here and henceforth, please send them – **in the exact style below** – to Alec Pridgeon (a.pridgeon@kew.org) for publication in the following issue (January or July). Write "ORN references" in the subject line of the e-mail. Book citations should include author(s), date of publication, title, publisher, and place of publication (in that order).

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