

THE PACIFIC CIRCLE



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PACIFIC CIRCLE NEWS

Business Matters

The Circle's email address is thepacificcircle@gmail.com. Please contact the Editor and/or Editorial Assistant should you have any questions or requests. Information about Member publications and conferences can be sent, as well.

The University of Hawai'i Foundation requests that dues or contributions made by check be made payable to "The U.H. Foundation" with "The Pacific Circle" in the memo space. The subscription and dues rates remain steady: US\$25.00 for individuals and US\$35.00 for institutions. Only contributions can be made online. Dues must be paid by check or credit card. Thank you.

The Circle web site includes past issues, documents from conferences, links to affiliated and complementary groups, and a blog with information about events and publications. There is also an option for searching previous issues of *The Bulletin*. Please visit <http://thepacificcircle.com>.

25th International Congress for the History of Science and Technology

The Congress will meet in Rio on July 23-29, 2017. Approved symposia are listed at: http://www.ichst2017.sbhc.org.br/view?ID_CONTEUDO=289 and include one on "Science and Empire on New Localities," no. 45. We have been kindly invited to contribute to this symposium, as the Circle will not be sponsoring one of its own.

If you are interested in participating, please email no later than November 30th Dr. Niklas Thode Jensen (ntjensen@gmail.com) and send a cc to Prof. John Gascoigne (j.gascoigne@unsw.edu.au).

Additional details can be found at <http://www.ichst2017.sbhc.org.br/>.

Recent Publications, Honors & Scholarly Activities by Circle Members

This has been a busy year for Circle member scholarship. Among the most recent publications are:

John Gascoigne, "Background to the *Endeavour* voyage," in Neil Chambers, ed. *Endeavouring Banks: Exploring Collections from the Endeavour Voyage, 1768-1771*, New South Wales Publishing and London: Paul Halberton, 21-26.

Roderick W. Home, *A Distant Authority: Ferdinand (von) Mueller, the Communication of Ideas, and the Colonial Search for International Standing in Science*, pp. 20, Ancora Press, Monash University, The Louis Green Lecture for 2015.

Marc Jason Gilbert, *South Asia in World History*, Oxford University Press and "For Want of a Ship, Empires were Lost: The Impact of the Logistical Dilemmas of

Operation Masterdom on the Allied Re-entry into French Indo-China, 1945,” *Global War Studies* 12:3 (June 2016).

Zuoyue Wang, “Planning for Science and Technology in China and India,” *Themes* 1, BJHS Themes Vol. 1 (2016) pp. 83-113 and available online at www.cambridge.org.

Hans van Tilburg, “Underwater Survey of Historic US Navy Seaplane,” *Sea Technology* 57:5, 27-31 and *The Lost Submarines of Pearl Harbor*, with James P. Delgado, Terry Kerby, Steven Price, Ole Varmer, and Russell Matthews, Texas A&M University Press, forthcoming.

Alan L. Bain, *Guide to the American Anthropological Association Records, 1904-2005*, National Anthropological Archives, Smithsonian institution, 2015. It is 331 pages long.

Alexander Mawyer, “Uncanny Rights and Prohibited Labors: The Ambiguity of State Authority in the Gambier Islands,” Tamatoa Bambridge, ed. *The Rahui: Legal Pluralism and Environment in Polynesia*, Australian National University Press and “The State of Mana, the Mana of State,” Matt Tomlinson and Ty Tengan, eds. *New Mana*, Australian National University Press.

Buhm Soon Park and Miyih Shin, “The Governance of Human Biological Materials: The Issue of Donors’ Rights in the Institutionalization of National Biobank of Korea,” *Bioethics Policy Research* 9, 45-77.

Jonathan Coopersmith, “Fraud and Froth: Free-Riding the 3d Printing Wave,” in Bibi van den Ber, Simone van der Hof, and Eleni Kosta, eds. *3D Printing: Legal, Philosophical and Economic Dimensions*, T.M.C. Asser Press, 2016, 137-152.

Jock Hoe, Mathematician, Linguist and Historian, 1929-2016



It is with sadness that we report the passing of Jock Hoe. Ruth Barton and Alistair Kwan, two colleagues from New Zealand, offer this remembrance:

Jock Hoe, a New Zealander of Chinese descent, was committed to increasing European appreciation for Chinese achievement. To this end he moved sideways intellectually, from mathematics to the history of Chinese mathematics, and to the opposite side of the world geographically, from Wellington (New Zealand) to Paris. While teaching in Wellington he spent study leaves and many southern

summers in Paris winters, studying under the supervision of Jacques Gernet, founder and director of the Unit for Teaching and Research on Languages and Civilisations of East Asia (Université de Paris VII) and, later, Professor at the Collège de France.

Jock's thesis was a French translation of and commentary on the methods used in the 1303 text, *The Jade Mirror of the Four Unknowns* (四元玉鑿) by Zhū Shìjié, who explains how to solve systems of polynomial equations using a grid of counting rods, manipulated in a manner parallel to Gaussian elimination. Jock's exposition was published in French in 1977 but is little-known in the Anglo-world.

Jock overcame many difficulties in making a career. He was the seventh child in a family of nine and, from an early age, assisted before and after school in the family greengrocery. He was encouraged by scholarships (to Wanganui Collegiate School and to Otago University) but disempowered by racism, in forms both systemic and personal. From a B.A. in mathematics at Otago he went on to a Master's degree in Mathematics in Wellington and a teaching diploma in Auckland; he taught at his old school in Wanganui before going to Cambridge where he took the Mathematics tripos and a Diploma of Mathematical Statistics. He taught mathematics and statistics to engineers in Paris, to undergraduates at the University of Malaya and, after a bout with TB, for two decades to undergraduate and graduate students at Victoria University of Wellington.

After completing his doctorate in 1976 Jock taught in both the Mathematics and Chinese Departments in Wellington. In the early 1980s Jock moved to Shanghai, where he taught English to students and lecturers at the Shanghai Foreign Languages Institute. He later returned to New Zealand where he taught Chinese at both Massey University and Christchurch Polytechnic. In his retirement he translated his French thesis into English, as *The Jade Mirror of the Four Unknowns: An early fourteenth century mathematics manual for teaching the derivation of systems of polynomial equations in up to four unknowns* (Christchurch: Mingming Bookroom, 2008; available through Qí Lùbǎo, qilubao@yahoo.com).

Jock's translation process reveals how Chinese mathematical thought proceeded. He observed that the Chinese language used certain words much like algebraic variables and operators, and how that technical use of everyday language allowed mathematics to meld seamlessly into the surrounding prose. He devised a semi-symbolic English to convey this (e.g. "HYP MULT BASE" for "multiply the length of the hypotenuse by the length of the base"), contrasting both historiography and mathematics against the translations and studies of Mesopotamian and Greek mathematics then available. Jock hence demonstrated that Chinese script inherently provided a symbolic handling for algebraic quantities and actions, and that this ability of the Chinese language helps to explain why a separate symbolic algebra did not develop in China: it was not needed.



HSS NEWS

The upcoming meeting of the History of Science Society is scheduled for November 3-6, 2016. The venue will be the Westin Peachtree Plaza in downtown Atlanta, Georgia. For information, please visit info@hssonline.org.

FUTURE MEETINGS, CONFERENCES and CALLS FOR PAPERS

2-3 November 2016. Workshop on Writing the Transnational History of Science and Technology, to be held at the School of History and Sociology of the Georgia Institute of Technology, one day before the annual HSS meeting, noted above. For information, please contact: joh.krige@hsoc.gatech.edu.

19-23 June 2017. AAS-PD Annual Conference, to be held on the Big Island of Hawai'i, at the Hawai'i Preparatory Academy, located in Waimea (Kamuela). For information about sessions and accommodations, please contact Alan Bain at baina@si.edu.

23-29 July 2017. 25th International Congress of History of Science and Technology, to be held at the Federal University of Rio de Janeiro. The theme is: "Science, Technology and Medicine between the Global and the Local." For additional information about papers and accommodations, please visit <http://www.ichst2017.sbhs.org.br/>.

BOOK, JOURNAL, EXHIBITION and RESEARCH NEWS

East Asian Science, Technology and Society volume 10, number 2 (2016) is a special issue devoted to "Transnational Psy Sciences in East and Southeast Asia," and is co-edited by Wen-Ji Wang and Harry Yi-Jui Wu. Articles include studies of mental illness, neurasthenia and psychiatric studies in Singapore, Japan and Taiwan.

Special Issue #41 of *East Asian Science, Technology and Society* covers "The History of Chinese Medicine," and includes "The Catchy Epidemic: Theorization and its Limits in Han to Song Period Medicine," by TH Hinrichs, and "The Qing Imperial Academy of Medicine: Its Institutions and the Physicians Shaped by Them," by Chei-chia Chang.

The 21st issue of *The History of Oceanography Yearbook* (2016) contains several articles of possible interest. Those include, Harald Schliemann, "Erna Mohr

und ihr Werk uber Meeressauger;" Wolfgang Matthaus, "Friedrich Mockel (1919-1993): Pionier der Meeresforschungstechnik in der DDR;" Hjalmar Thiel, "The First Phase of Persistent Research on Deep-Sea Benthos Ecology in Germany: Roots, International Background and the 1960s to the 1980s" and Thiel and Gerd Schriever, "Fifty Years of Applied Biological Deep-Sea Research in Germany." Thanks to Walter Lenz for his information.

SELECT RECENT and FORTHCOMING PACIFIC BIBLIOGRAPHY

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Field Guide to the Plants of East Sabah, by **Rogier de Kok**, The University of Chicago Press, 2016.

The Kew Tropical Plant Families Identification Handbook, by **Timothy Utteridge**, The University of Chicago Press, 2016.

Phillipps' Field Guide to the Mammals of Borneo and Their Ecology: Sabah, Sarawak, Brunei, and Kalimantan, by **Quentin Phillipps** and **Karen Phillipps**, Princeton University Press, 2016.

The Reef: A Passionate History, by **Iain McCalman**, Scientific American/Farrar, Straus and Giroux, republication of the 2013 edition.

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“Whale Meat in Early Postwar Japan: Natural Resources and Food Culture,” by **Jakobina Arch**, *Environmental History* (2016), 21 (3):467-487.



BOOK REVIEWS



Jonathan Coopersmith, *FAXED: The Rise and Fall of the Fax Machine*, Baltimore, MD: Johns Hopkins University Press, 2015, xi + 308. Notes. Essay on Sources. B&W Photos. Index. Cloth US\$54.95 and ISBN 978-1-4214-1591-8 and EBook US\$54.95 and ISBN 978-1-4214-1592-5.

Jonathan Coopersmith has been interested in fax machines since 1990, or earlier. Today, we have the result of his decades of research. He writes: “If I had completed this book when first intended, I would have missed one of the most exciting aspects of the facsimile’s history, the long-predicted, chaotic, and delayed triumph of digitalization over faxing. My procrastination has thus enabled me to report the obsolescence and decline of faxing, a story as fascinating as its long, uncertain, and unpredictable rise.” (8)

The idea of sending a picture over a wire occurred almost as soon as the electric telegraph was invented. Though the first patent was taken out in 1843, the fax did not reach its promise until the 1980s, well over a century later. The reasons are many and complex. Some were technical. Mechanical scanning was difficult until it was replaced by photoelectric cells in the 1920s. Until the development of the G3 standard in 1977, fax transmitters could only communicate with compatible receivers made by the same manufacturers; as of 1928, for instance, there were nineteen incompatible systems, four of which were commercialized. Receivers were equally problematic, for they required special paper and ink. And all of these devices were delicate and prone to failure.

Then there were commercial impediments. The history of individual inventors is littered with unfulfilled promises. Major corporations got involved: AT&T, Western Union, and the Associated Press offered fax services before the Second World War, as did Nippon Electric in Japan and the French PTT. After the war, Xerox, Magnavox, and 3M tried to enter the fax market. They all faced a daunting dilemma: not only were their machines costly to buy and to service, but transmissions were slow and telephone charges far higher than telegraph or mail. As a result, only wealthy

organizations with special needs for pictures in a hurry could afford to use faxes. Newspapers were the first buyers. During World War II, the U.S. armed forces needed to transmit maps, drawings, and photographs, although the equipment was delicate and the lines too unreliable for use in the theaters of war. Banks needed faxes to verify signatures. From 1949 to 1960, Western Union's Desk-Fax machines were marketed to businesses as substitutes for office teleprinters, but could only communicate with one another. By the 1970s, fax machines represented a small part of the office machine market.

In the late 1970s, as the American fax market was just limping along, the boom began. One reason is the deregulation and improvement of telephone service worldwide. In Japan, the government made two major corporations, KDD and NTT, accept a common standard, allowing compatibility across brands. Very oriented toward consumer electronics, Japanese equipment manufacturers seized the opportunity to introduce a variety of small, reliable, efficient fax machines suitable for home as well as office use. They proved particularly popular among consumers in Japan, where the use of the *kanji* writing system, with its 2,000 to 3,000 commonly used characters (and thousands more special characters) made the telegraph difficult to use. Within a few years, Japanese machines and the common worldwide G3 technical standard made the fax enormously popular. In 2002, half of Japanese homes had a fax machine.

By then, however, the end of the fax was already in sight, and the cause of its demise was digitalization. In the 1990s, personal computers became able to send and receive faxes over the Internet, instantaneously and at almost no cost. Printers incorporated scanners and fax circuits. Except for certain uses requiring a picture, for example a signature, email has largely replaced the fax.

In telling this story, Coopersmith has given us a detailed, yet readable account of a fascinating technology from birth to near-death, with a sophisticated understanding of the technical, commercial, cultural, and political issues involved in its rise and fall. We are fortunate that the author took the time to complete this book, because our understanding of the history of faxing, and of the history of modern technology in general, is much richer for it.

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Roosevelt University



Eden Medina, Ivan da Costa Marques, and Christina Holmes, eds., *Beyond Imported Magic: Essays on Science, Technology, and Society in Latin America*, foreword by Marcos Cueto, Cambridge, MA: The MIT Press, 2014, Pp. xiii + 396. Figures. Index. Paper US\$35.00 and ISBN 978-0-262-5262903.

The sixteen essays in this edited collection highlight the maturation of STS scholarship focused on, and often developed in, Latin America.

They point to several inspiring trends in this field and bring together perspectives from researchers across the Americas and Europe, which is an achievement in itself. The volume's title emphasizes the editors' desire to move beyond diffusionist models that assume science and technology emanate from centers of wealth and power, to be adopted by passive recipients with no change to their usage or symbolic meaning. In contrast to this outdated view, many contributors to this collection "use science and technology to illustrate how structures of power have shaped both knowledge production and material life in Latin America, from its colonial past to its neoliberal present." (p. 6) Latin America offers an especially rich field for examining the intertwining of knowledge production and political power, and many of the essays provide compelling models for such work. As with any such collection, some essays are stronger than others, and I will not attempt to deal equally here with each of the contributions.

The volume is divided into three sections. The first highlights the development and practice of science in Latin America. It also includes a literature review (by E. Medina & M. Lemon) of scholarship from a range of fields that impinge on Latin Americanist STS, emphasizing the value of cross-fertilization between the largely separate scholarly communities of history of technology and Latin American history. "Giving greater attention to Latin America and other areas of the global South...forces investigators to examine how Western ideologies affect the way we study technology and confront how and why we frame certain experiences as the local, the other, or backward," the co-authors argue. (113) Conversely, "the history of technology offers Latin American studies a powerful way to...connect studies of resistance, discourse, affect, ideology, and social movements to...business,

policy, economics, culture, and international relations.” (125) Above all, the goal of this volume is to introduce scholarly communities that have not generally been aware of each other’s work but would benefit from reciprocal exchange.

The four remaining essays in this section examine the politics of knowledge development and dissemination, in quite divergent historical and contemporary cases. Fressoli, Dias, and Thomas consider organizations that promote science and technology in the service of social inclusion and progressive change, supported by multinational development agencies. Their case studies highlight the importance of co-constructing knowledge, networks and technologies with impoverished communities, rather than simply importing solutions from other contexts and actors. Relatedly, in “Ontological Politics and Latin American Local Knowledges,” Marques engagingly examines a struggle in Brazil over claims regarding a children’s nutritional supplement, popular since the mid-1970s. Nutritionists deny that *multimistura* has any scientifically demonstrable value and have successfully displaced it from school meal programs. However, many residents of poor communities vigorously attest that they have witnessed its lifesaving impact, and it continues to be a staple of community organizations that serve the very poor. Marques analyzes the participants on either side of this debate as inhabitants of ontologically distinct worlds, where different kinds of knowledge and evidence are authoritative.

Pérez-Bustos, Olarte Sierra and Díaz de Castillo H. present a fascinating gendered analysis of forensic genetics in Colombia. This is a female dominated field deeply embedded in political concerns about state violence; the authors describe it as “a situated science, performed by women geneticists who carefully touch and are touched by their subjects in a context of war.” (79) Engagement with political issues and explicit care for crime victims reduces the status of these female scientists, in the eyes of male geneticists. Unable to conduct original research due to the staggering volume of cases that they labor to resolve, forensic scientists are regarded as “mere technicians” by colleagues in the more prestigious (and politically removed) scientific field. (80)

The second section on “networks of innovation” examines “how politics shape the movement, selection, and use of ideas, practices, and artifacts.” (13) In “Latin America as Laboratory,” Hall considers how Kodak’s panorama camera shaped foreign understanding of Machu Picchu, following a National Geographic Society-sponsored expedition in the 1910s. Peruvians had little influence over the camera’s use or how the resulting images were interpreted. “While Peruvians helped guide Bingham to Machu Picchu, making its picture was the exclusive privilege of Yale.” (257) Contrastingly, Rodriguez discusses a technique for classifying fingerprints that

emerged in early 20th-century Argentina, when that state was grappling with the (real and imagined) impact of growing immigration. The goal of *dactyloscopy* was to enable easy management and sharing of criminal files across provinces, and it was subsequently adopted in Europe to address a similar challenge: the need for shared record-keeping and transfer across political borders. Here then is one historical example of a scientific technique that emerged in Latin America to influence countries at the political-economic “center” with parallel concerns.

In “Tropical Assemblage,” Palmarola and Alonso consider the transfer of prefabricated cement panel housing from the Soviet Union to Cuba, following the political realignment precipitated by Castro’s revolution and the 1962 missile crisis. In both countries, the cement architecture was promoted as embodying egalitarianism and national self-reliance. However, economic, cultural and climatic differences shaped Cuba’s use of these panels. Due to the U.S. embargo, the Cubans were forced to use less cement. The resulting decision to perforate the slabs also met the need for ventilation, in a tropical setting, and allowed for a range of design innovations aligned with Cuban aesthetic preferences. Thus a transferred technology was quickly adapted to suit a distinct cultural and environmental setting.

Finally, two essays in this section investigate the One Laptop Per Child educational initiative. Chan’s ethnographic research contrasts the global program’s vision of transformation through technology with the changes that actually occur, inflected by the specific aspirations of user populations. Her research reveals the constructive work performed by people who mold this initiative to suit their desires, and in so doing make the project more sustainable. Relatedly, Ames describes the XO laptops as “charismatic objects” that enable teachers and students to pursue their own desires, in ways that differ from the vision of the laptop’s designers. He also highlights the practical challenges to this initiative that are realities in underdeveloped regions, such as limited staff training and difficulty keeping the computers maintained.

The third section on “Science, Technology and Latin American Politics” considers “how technologies can interrupt or change legal practices, regulations, and classification systems and intersect with such state structures as policy making and legislation.” (15) In this vein, Delgado and Rodríguez-Giralt analyze the challenges surrounding the integration of “creole” seeds (a politicized term celebrating their native origin, versus globally standardized commercial seeds) “into national legal, scientific and bureaucratic systems,” such as federal policies governing farmers’ insurance against crop failure. The two categories of seeds are developed through different processes that embrace opposing logics; in the “creole” case the goal is diversification,

to yield a communal seed stock resilient in the face of unpredictable environmental fluctuations. “Ironically, integrating creole seeds within state institutions seems to be the only way to preserve them,” the authors conclude. “If they are not included within those institutions, the seeds might appear as too risky for farmers.” (343)

Two essays examine the political utility and promotion of nuclear research programs in Cold War Argentina and Mexico. In both cases, state leaders carefully emphasized the non-military uses of nuclear science, for energy (in Argentina) and medicine (in Mexico). Argentina’s effort, in particular, was a scientific failure, even a fraud – but Hagood argues that it served important political purposes nonetheless. “The promise of a bottle of atomic energy in everyone’s home made Peron’s otherwise abstract investment in the development of Argentina’s industrial and energy sectors a concrete populist technological project that appealed to people throughout the nation and, as a political technology, promoted continued support of his regime.” (281)

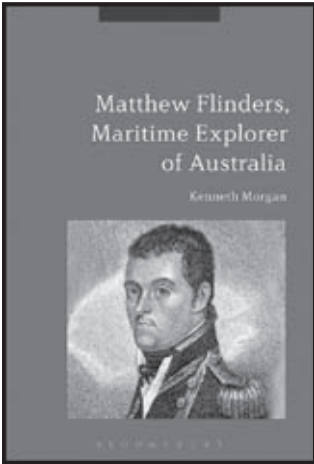
Essays on Chilean neo-liberalism and Brazilian health rights embed the concept of technology deeply within economic and legal systems. Tironi and Barandiarán describe neo-liberalism as a “political technology” that had lasting, transformative impact on governance. Neo-liberalism “acts as an ensemble of thoughts, techniques, and knowledge that are applied to predetermined political goals by shaping the methods for knowing the world and the communities of experts responsible for producing that knowledge.” (323) In the case of agencies governing nuclear and hydro-power in Chile, the cultural impact of neo-liberalism included replacing engineers with economists (deemed more objective), defining community benefits in solely economic terms, and constraining interventions by local governing authorities. The inscription of neoliberal ideology within “technologies, practices, forms of expertise, and evaluation tools” continues to affect policy and regulation, as evidenced by the authors’ analysis of constraints on Environmental Impact Assessments in the 21st c.

Concluding the volume with an examination of technological access mediated by law, Biehl investigates what he terms the “Juridical Hospital” in contemporary Brazil. He finds that many poor Brazilians appeal to courts to guarantee their constitutional right to medical technologies, primarily pharmaceuticals. This is a matter of survival, since without court intervention, patients with fatal conditions cannot hope to receive state services in time. “Poor people are not waiting for medical technologies to trickle down; they are leveraging public legal assistance and a receptive judiciary to hold the state accountable to its mandate and to their medical needs, now.” (350)

As the capsule summaries above indicate, this ambitious volume succeeds both in presenting the scope of Latin Americanist STS scholarship and in demonstrating how deeply these analyses are embedded in examinations of politics and diverse local contexts. *Beyond Imported Magic* is an excellent introduction to the current state of the STS field in relation to Latin America. It will no doubt succeed in the editors' and contributors' aim of encouraging greater intellectual engagement and cross-pollination among Latin Americanists and science studies scholars who specialize in other global regions.

Eve Buckley
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Morgan, Kenneth, *Matthew Flinders, Maritime Explorer of Australia*, London: Bloomsbury Academic, 2016, Pp. xv + 313pp. Maps. Notes. Bibliography. Index. Hardcover US\$131.99 and ISBN 978-1-4411-7962.

Matthew Flinders (1774-1814) died at the age of 40 without receiving the fame to which he was undoubtedly entitled. With a strong, but not exaggerated, belief in the quality of his hydrographic work, he did not believe he would ever equal the immortal Cook. He hoped, though, that he might merit the rung just beneath. The map of Australia is his memorial. Flinders defined

the country's outline. First, he circumnavigated Tasmania (October 1798-January 1799) on *Norfolk* proving it to be an island. Secondly, he circumnavigated the mainland (December 1801-June 1803) on *Investigator* proving it to be one landmass. He suggested the country's name, and personalised his resulting chart by adding hundreds of toponyms such as the Great Australian Bight; Cape Leeuwin and Spencer Gulf. He named nothing after himself.

His account, *A Voyage to Terra Australis*, two volumes with an atlas, was published on 18 July 1814, the day before he died. A superbly written narrative, it provides an insight into Flinders' devotion to exactitude. He stated that his charts, the permanent record of his work, would be his legacy and if these were not done well he had done nothing well. In November 1802, while in the Gulf of Carpentaria, Flinders wrote: 'I have hitherto considered, that my business is to make so accurate an examination of the shores of New Holland and New South Wales, that there shall be no necessity for any further navigator to come after me; and with this object always in view, whenever circumstances would allow it, I have ever kept close in with the land that nothing might escape our notice...I always desired to see the washing of the surf upon the shore.'

Until the last decade or so there had not been much scholarly work on Flinders and his voyages. Ernest Scott's *The Life of Matthew Flinders* (1914 reprinted 2001) held the field for decades and is still valuable though much of the source material was in 1914 not readily available. Geoffrey Ingleton's *Matthew Flinders: Navigator and Chartmaker* (1986), written by a renowned Australian hydrographer, is dense with facts and tantalising, though tangential, diversions but not an accessible biography. Miriam Estensen's *The Life of Matthew Flinders* (2002 and reprinted several times) is the benchmark against which others should be

measured. Elegantly written, thoroughly grounded in the sources, it gives a picture of both Flinders the man and Flinders the hydrographer. She brings her subject to life.

No doubt spurred on by the bicentenary of his circumnavigation in 2001-2003, a great many books and articles have been recently published on various aspects of Flinders' career. Some of the important source material has been published for the first time such as the diary of the botanist on the voyage, Robert Brown (edited by TG Vallance, DT Moore and EW Groves, 2001) and Flinders' private journal 1803-1814 (edited by Anthony Brown and Gillian Dooley, 2008). In 2015, Kenneth Morgan, the author of this new biography, edited the log book and journal of the *Investigator* for the Hakluyt Society. This work is a monument to scholarship in the tradition of John Cawte Beaglehole, the great editor of James Cook's journals, and provides the evidence for a thorough evaluation of Flinders as a navigator, hydrographer and scientist.

This biography does not provide any new information or interpretation. It is, however, a well-written and detailed account of Flinders as a maritime explorer as the title states. Morgan is conversant with all the sources and has produced a superb bibliography and comprehensive notes. This amounts to a third of the text. The book would seem to be an enlarged version of what was provided by way of biographical detail in Morgan's 2015 publication. Morgan details Flinders' method of charting and the painstaking care he took in this work. He notes that Flinders was an innovator in hydrographic practice such as distinguishing on his charts between night and day tracks and indicating which parts of the coast he had examined and which parts had been copied from other sources. Although Flinders had no astronomical training, he rose to the occasion and carried out the duties of this technically complex position on *Investigator* when the astronomer had to return to England.

A welcome focus is on the scientific aspects of the voyages. The *Investigator* voyage was very much the project of Sir Joseph Banks, President of the Royal Society, who was given a free hand by the Government. He engaged the botanist, Robert Brown whose work greatly influenced future botanical scholarship; the artists Ferdinand Bauer (whom some regard as the most accomplished of all botanical artists) and William Westall; the miner John Allen and the gardener, Peter Good. Thirty-eight cases of natural history specimens and drawings arrived back in England. There were 3,600 plant gatherings from Australia and 200 from Timor. In 1810, Brown published his *Prodromus* to Australian plants. This work was for fifty years considered the greatest botanical work that had ever appeared.

What is disappointing about this biography is the lack of attention to Flinders' character especially as there is so much material available to allow an assessment. The book could leave the reader with the impression that Flinders was a passionate and meticulous hydrographer, which he was, but there was nothing else

in his life. He was a one dimensional figure. In fact, Flinders was remarkably well rounded. He did not see his work as the full picture. He wanted more from life.

While under house arrest on Mauritius in 1808 and thinking that his achievements would remain unnoticed, he wrote to his brother, Samuel: 'I shall seek my future happiness in domestic relations. A library, a select society of friends, a garden, and my own family will then be the bounds of my ambition, and perhaps afford more true happiness than any other plan of life I could lay down'. The life of scholarship and contemplation always had a strong pull. He was engaging, witty, well read with a great capacity for friendship, a loving husband and father. This is the context for an understanding of his work.

All books contain errors but there are rather a lot of factual inaccuracies in this biography which should have been picked up at the proof-reading stage. For example; Bligh made three Pacific voyages not four; Tasman did not name New Holland; Cook was never at Sydney Harbour; the *Reliance* sailed in 1795 not 1794 (Flinders had in fact fought in the Battle of the Glorious First of June in 1794); the Wellesley Islands were not named after Arthur Wellesley and he was not the Governor-General of India. They were named after his brother Richard who was Governor-General. I cannot understand why Melchisédec Thévenot is spelt Thévonot throughout. I can find no source for this and it is not the way his name is spelt on the title pages of his books. The Bonaparte Tasman Map (one of the glories of the Mitchell Library) was not published in Thévenot's *Relations*.

This biography is a valuable introduction to Flinders' hydrographic achievements and a useful adjunct to the author's superb edition of the *Investigator* log. However, the reader still must go to Estensen to understand Flinders.

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State Library of New South Wales



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