

William Freeman Daniell (1817–1865)

RWD Nickalls ¹
dick@nickalls.org

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— WORK IN PROGRESS —

please contact the author regarding errors or matters arising etc. Note that the bibliography is available as a separate file from this website.

¹retired (Department of Anaesthesia, Nottingham University Hospitals, City Hospital Campus, Nottingham, UK.)

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Introduction

My interest in William Freeman Daniell was first kindled in 1980 by being asked to give a talk on a drug called *physostigmine*, which is used to treat the anti-cholinergic side-effects of certain drugs. I soon discovered that physostigmine has a fascinating history stretching back hundreds of years—initially as an ‘ordeal poison’ in West Africa.

Like many drugs used in medicine, physostigmine is found in nature, where it exists as the principle active constituent of the seed of the tropical plant *Physostigma venenosum* (Balfour), which is a native of West Africa, particularly in the regions around Calabar, Nigeria. This plant, which is a member of the family *Leguminosae*, is not unlike a runner-bean plant, the seed being rather like a large brown/black broad bean both in shape and size. These seeds have since come to be known as ‘Calabar’ beans.

Some background reading soon led me to Goodman & Gillman’s *Textbook of Pharmacology*, where it was stated that a certain Dr WF Daniell was instrumental in drawing attention to these beans following an expedition to Calabar in the early 19th century.

Since this Daniell project is unlikely to be finished any time soon, I have, therefore, decided to place it on the web. Any feedback is welcome.

I am grateful to Antony Shaw for bring my attention to many genealogy details regarding WF Daniell’s close family.

To do

- Detail Daniell’s “life” from 1856–1865
- Finish documenting all the plant specimens
- Finish documenting all the letters
- Check all the references and quoted extracts
- Read the Oldfield ref (CV 1g) (London Medical and Surgical Journal; vol viii, p 406)
- Read 2 dermatology articles by Daniell’s “my friend Dr Willis” (see CV 1L) (medical Gazette, 1843-44, p 1 and 481)
- Read articles by Dr Boyle (CV 1a p 436)
- Read article by Dr Burton (see CV 1a p 436) (Provincial Medical J, 1842)
- Read Medical Reports of the Niger expedition by Drs McWilliam and Dr Pritchett (see CV 1a p 436)

- Read Clapperton's "Journal of second expedition into the interior of Africa" (see CV 1j, p 464)
- Find any letters to JD Hooker at Kew archives. I have a card reference to "Correspondence; 55 vols and papers". [Manuscript papers of British Scientists 1600–1940]

Chapter 1

Early beginnings

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1.1 Parents: George and Mary Anne Daniel

Daniell's parents, as recorded on his baptism register, were a George and Mary Ann Daniel. Their address at this time is not known, and a search through various local directories has not been very helpful. The most promising entry would appear to be that from Pigot and Dean's *Trade Directory for Manchester, Salford (1821–2)*, page 49, which gives the following listing for a George Daniel (Shaw 2010).

Daniel Geo. calico printer & fustian manuf. 1 Spring-gardens; h. 4
Broken-Bank, Salf

In Pigot and Dean's *Directory for Manchester, Salford (1824–5)*, there is the following listing for a George Daniel.

George Daniel, merchant, of Ardwick-green.

It seems likely that Daniell's mother was originally a Mary Ann Freeman from the parish Quorndon, Leicestershire (later the village changed its name to Quorn in order to avoid confusion with another village called Quarndon), and that she married George Daniel in Quorndon on 20 January 1817, as surviving marriage records from Quorndon have the following marriage entry

George Daniel, of Salford, co. Lanc., & Mary Ann Freeman,. lic. 20 Jan.
1817

(Phillimore's Marriages, Quorndon 1576–1837

<http://leicestershireparishrecords.blogspot.com/2010/05/phillimores-marriages-quorndon-1576-to.html>).

Note that here Ann is spelled without an 'e' although the baptismal register for Richard Silvester Daniell gives it as Anne.

Some eight members of the Freeman family in Quorndon, are recorded in the 1841 census records of that village.

1.2 Birth and baptism records

William Freeman Daniell was born (most probably in Salford, Manchester) on 16th November 1817. Note that Daniell states he was born in Salford in his Army service record, although he wrongly gives the date as 19 November, 1819 (see Appendix A). However, all other references to Daniell give his date of birth incorrectly, most commonly as 1818 (see DNB).

The record of Daniell's birth was drawn to my attention following a search of baptism lists compiled by the Mormon Surname Index held at the Lancashire Record Office¹. The entry reads as follows.

William Freeman, son of George and Mary Daniel, baptised 2nd February, 1819, at Salford, St. Stephens (C of E) Church.

According to the baptism register² for the parish of St. Stephen, Salford³, Daniell was born on the 16th November 1817, to George and Mary Daniel⁴.

Unfortunately the above Mormon baptism register does not give very much detail. However, it does indicate that Daniell's birth was not registered until February 2nd, 1819, some 21 months later. It is therefore possible that his late baptism was due to a house move, since the baptism register also shows that his brother George Silvester Daniel was born in the same parish on March 23rd 1819, and baptised on July 17th only two months later. Thus both Daniell and his brother were baptised within 5 months or so of each other.

The baptism register entry for George Silvester Daniel is slightly more informative, and indicates that their address was in Salford, and that their father was described as a manufacturer. The entries in the baptismal register shown in Figure 1; a photograph of the two entries is shown in Figure 2. A search of the register up to 1852 revealed no other entries for the Daniel family.

1819				
No. 93	Feb. 2 W ^m . Freeman Son of Geo. & Mary Daniel		Mr. Horne	
	born 16 Nov ^r 1817			
No. 100	July 17 Geo. Silvester Daniel			
	Son Geo. & Mary Anne Daniel	Salford	Manufacturer	Mr. Horne
	born 23 March			

Figure 1. Entries in the baptism register of the parish of St. Stephen, Salford, for 1819. Entry 93 is for William Freeman Daniel; entry 100 is for George Silvester Daniel.

¹Bow Lane, Preston, PR1 8ND.

²Register of baptisms in the parish of St. Stephen, Salford, in the county of Lancaster. This register is currently held at the church of St. Philip, Church Street, Salford.

³Salford is a borough of Manchester, UK

⁴Note that William's parents name was spelled *Daniel*, but he clearly used the spelling *Daniell* on all forms and correspondence. Apparently it was relatively common for people to adopt minor changes to their name in those days.

It seems likely that Daniell was unaware of his baptismal entry and of his true date of birth, as there is a significant discrepancy with respect to documents associated with his joining the Army as a Medical Officer in 1847 (see Appendix A and B). These documents indicate that Daniell thought his date of birth was November 19th, 1819, and that he therefore felt he was only 27 years old on the 22nd October 1847 when he applied to join the Medical Department.

Parish of St. Stephen, Salford

The church of St. Stephen was built in 1794. However, it was closed in May 1956, and demolished a few months later. Following this, the parish of St. Stephen was joined with the adjacent parish of St. Philip, resulting in the present parish of *St. Philip with St. Stephen* based at the church of St. Philip (Church Street, Salford) adjacent to the Salford Royal Hospital.

Surname

It appears that Daniell changed his surname from the original *Daniel* to Daniell in about 1841, but the reason is not known.

The baptism register clearly indicates that the original spelling of William's surname was Daniel, and indeed, this particular spelling is also used in the entry in the *Examination Book* of the Royal College of Surgeons of England (dated 5th November 1841), where it is recorded that he gained his MRCS diploma.

However, after 1841 all documents and correspondence give his surname as *Daniell*. It would appear, therefore, that on qualifying as a surgeon, William assumed the name Daniell.

1.2.1 Other family

There is considerable evidence (Shaw 2010) that Daniell probably had at least three brothers—John Coates Daniel, Richard Silvester Daniell, and George Thomas Daniell.

George Silvester Daniell

Although the name in the Salford baptismal register gives the name of a George Silvester Daniel, it now seems likely that he changed his name to Richard Silvester Daniell (as he is described as a brother in WF Daniell's Will).

It seems (Shaw 2010) that Richard Sylvester Daniel became a surgeon and married, in 1861, Annie Suttie Braid, the daughter of the renowned Manchester James Braid (DNB, 1795?–1860), who pioneered the use of hypnosis in surgery, and under whom Richard Sylvester Daniel began his medical training, which he completed at the Royal College of Surgeons England.

Richard Silvester Daniell is most likely the same person mentioned in the 1881 census [copy] as RS Daniels, a surgeon (aged 60), and living in Birkenhead with a niece (Evelyn, aged 25). These findings are consistent with George Silvester Daniell's birth in 1819, and Evelyn Lucy Daniell's birth in 1855.

A Richard Sylvester Daniell also appears as a witness to the marriage of a John Coates Daniell (see below).

George Thomas Daniell (1827?–1906)

George Thomas Daniell is mentioned as a brother in WF Daniell's Will.

He was married (aged 30) on March 9th, 1857, and so he was born 1827±1 year. He died in 1906 in Staffordshire.

John Coates Daniell

There is evidence that John Coates Daniel had a father George Daniel (born 1782—son of a Timothy Daniel, pottery manufacturer of Burslem, Stoke-on-Trent) and also a brother George Thomas Daniel.

Furthermore, a Richard Sylvester Daniel appears as a witness on the marriage certificate of John Coates Daniel (and the father of the groom was a George Daniel (Merchant!)).

Unfortunately there is little information regarding Daniell's early life. In view of Daniell's early *commercial pursuits*⁵, it is possible that this address relates to the correct George Daniel.

1.3 Medicine

There is little information regarding Daniell's early career, but it seems most likely that, since he obtained his MRCS in November 1841, he probably started his apprenticeship by at least 1833 or so, when he was about 16 years old.

In fact from the detailed summary of Daniell's medical training which survives in the Public Record Department, Kew, London (an Army document detailing his medical training prior to joining the Army in 1847—see Appendix B), it would seem that Daniell's early training was fairly typical of the time.

Daniell's application form to join the Medical Department of the Army (see Appendix B) shows that he spent 5 years apprenticed to a Thomas Brownbill, a surgeon with an extensive practice, who was also one of the surgeons to the Salford Dispensary (see Slugg, 1881).⁶ This is probably how Daniell started his medical career, with a view to becoming an Apothecary or Pharmacist.

Appendix B also shows that Daniell spent 18 months at the Royal Salford Hospital (Salford, UK), and one year at the Westminster Hospital (London).

1.3.1 Medical training regulations

The training requirements and regulations for both surgeons and physicians (Doctors) underwent major changes during the early 19th century, starting with the Apothecaries Act of 1815, as is well described in the following passages.

This Act [the Apothecaries' Act of 1815] was the first attempt to regulate the general practice of medicine by requiring those aspiring to practice to be regularly apprenticed to a recognised apothecary for a minimum of five years and then to attend lectures and a recognised hospital or Dispensary.

⁵See Daniell's obituary in *Journal of Botany*, vol 3, 1865, p 294–296; which states: ...Dr. Daniell's residence in Africa dated almost from his boyhood, and he was first occupied in commercial pursuits; but on his return to England he graduated as a physician [1841]...

⁶I am grateful to Nigel Tallis (Assistant Curator, Royal Pharmaceutical Society of Great Britain) for this reference.

Originally, courses in Anatomy, Theory and Practice of Medicine, Pharmaceutical Chemistry, and Materia Medica were all that was required. These requirements were increased to include Physiology and Medical Botany (1816), Demonstrations in Anatomy and the The Principles and Practice of Midwifery (1827), Clinical Lectures (1828), and Forensic Medicine (1836). Then, providing he was aged twenty-one or more, the apprentice obtained his license to practice by passing an oral examination at Apothecaries' Hall in London. ...

Another change that gradually occurred during 1815–1858 was that the number of pupils who became Members of the Royal College of Surgeons gradually increased... After 1837, sixty-eight per cent of the pupils obtained both qualifications.

Zwanenberg (1983).

Thus surgeons were people who passed the MRCS examination to become Members of the Royal College of Surgeons of England, while Physicians were those who obtained either the LRCP diploma from the Royal College of Physicians, or the MD Degree (Doctor of Medicine) from one of the recognised universities.

There are no records indicating that Daniell took the Apothecaries qualification, so we have to assume that Daniell went to Africa in an unqualified capacity with a view to taking the MRCS qualification in due course.

Daniell started as a surgeon (MRCS, 1841) and was known as Mr Daniell; only later in 1849 did he gain a MD degree, and subsequently called himself Dr Daniell (? cite example of Dr Willis, MD (1819), MRCS (1823), LRCP (1837)).

1.4 Early travels to West Africa

Daniell's early travel to Africa is most likely related to his Father being a trader with the West African communities—in fact his Father does give his occupation as “merchant” on Daniell's baptismal entry. There was a well established “African Company of Merchants” which was abolished in 1821 as part of the process whereby the British Settlements on the Gold Coast were transferred from the Crown back to African control. In 1830 a Mr George Maclean was made “governor” of the “Committee of London Merchants”, and the Crown reassumed control of the Gold Coast in 1843⁷.

It seems that Daniell travelled to West Africa at an early age, as the following extract from one of his obituaries indicates

Dr Daniell's residence in Africa dated almost from his boyhood, and he was first occupied in commercial pursuits; but on his return to England he graduated as a physician.

(Obituary; *J. Botany*, 1865; vol 3, 294–296).

In fact it seems likely that this was approximately 1838–1839, when Daniell was about 21–22 years old, as Daniell relates an episode of this time in a letter to Charles Darwin (see below).

⁷*The Gold Coast Handbook* (1928) — see photo of Christianborh Castle on page 18.

... —I will give you an anecdote which will prove at least that your q⁷ has been solved some 18 years⁸ ago by an African potentate. When I was a boy, I went with a party to visit the King of Warré, who resided on an island situated on a communicating stream between the rivers Rio Formosa and Niger in the Bight of Benin. The King after alluding among other topics to the mortality that occurred so frequently among his European friends who resided at the mouth of the former river, and particularly to some recent deaths that had taken place turned round and looked me fully in the face, at the same time enquiring what age I was. “Ah! said his sable majesty! it is the right age to bring white men to Africa, the younger the better, and he is a true child of the sun, his fire (light) hair will save him from many bad diseases; he and others like him, *will live*”!! ...

Daniell 1856c (8th October 1856)
(for full letter see Section A.3.1)

Daniell described Waree in Daniell 1845a, p 707–

By this time Daniell had most probably finished his 5 year apprenticeship and was gaining further experience as an Apothecary or Pharmacist on a commercial trading vessel, on what was known as the ‘West-Africa run’ out of Liverpool. —perhaps the non-military “merchant vessel” the ‘Waree’ mentioned in Allen and Thompson (1848).

Towards the close of the month of June 1841, a large ship to which I was then attached, having a compliment of 40 white men, passed from the Old Calabar river to Fernando Po to procure the necessary supplies of fish, water and provisions prior to the homeward voyage. During the period of seven [months ? weeks?] in which the crew were engaged in loading the vessel at the usual anchorage of the town, they suffered but slightly from the endemic diseases of the place.

(Daniell 1849)

In 1839, when Daniell was about 22 years old, he was certainly on the West coast of Africa in some medical capacity on a ship, as the following extract from one of his articles indicates.

When I visited this river [the Rio Formosa] in 1839, I found two vessels moored a short distance from its mouth, one of which, within the space of 5 months, had buried two entire crews, a solitary person alone surviving; the other, which had entered it at a much later period, had been similarly deprived of one-half of its men, and the remainder were in such a debilitated condition as to be incapable of undertaking any active or laborious duty. Another vessel sailed from this port previously to my arrival, in such a deplorable state as to be solely dependent on the aid of kroomen to perform the voyage homewards. After a stay of several weeks at the anchorage opposite Jacqua creek, the ship to which I was attached became so unhealthy that we were under the necessity of recrossing the bar into a purer atmosphere, having lost one-third out of a compliment of eighteen men. ... The plan of treatment I then pursued in the cases of fever which

⁸(1856–18 = 1838); also Daniell says he visited Warre and the Benin river in 1839 (see: Daniell 1845a, p 772)

came under my care, was local and general blood-letting, saline purgatives, calomel in large doses, &c; in fact that treatment sanctioned by the most experienced writers on tropical diseases of a similar nature. I regret to state that in these, as in numerous other instances, this system of treatment was evidently one which possessed no power of controlling the progress of the remittent fevers of inter-tropical Africa.

(Daniell, 1845a, p771–774)

While Daniell was abroad, he also took a keen interest in things medical, botanical, and ethnological and it was on one of these early voyages in 1839 that Daniell took an interest in a plant which was later to bear his name—the Katemfe plant (see Plant section).

1.5 The Katemfe fruit

It was at this time that Daniell first came across the triangular fruit of a plant belonging to the genus *Phrynium*, which was later to be named after him (*Phrynium danielli*) by his friend John Joseph Bennett⁹ in a paper which appeared in the *Pharmaceutical Journal* in October 1854 (Bennett, 1854a).

Daniell describes his first meeting with this fruit as follows.

When visiting Warree and Ebo, so far back as 1839, I casually met with a number of red triangular-shaped pods in the trading canoes from Bocqua and Kakanda, which from their colour I mistook for Kola-nuts (*Sterculia acuminata*, Pal. de Beauv.), as the natives of these localities carried on a considerable traffic with them, and it was not until 1841, during my residence in Old Calabar, that I became convinced of my error, by experiencing in person their extraordinary power on the palate. ... The natives assert that this fruit is to be found growing abundantly in Bosan kingdom, a few miles up Cross river, and is conveyed from thence by the palm-oil canoes, to be vended in the larger Efic towns; they are however, not only much less in size, but of inferior quality to those from Central Africa.

(Daniell, 1854c).

A footnote in this paper (Daniell, 1854c) indicates that Daniell sent one capsule of the Central Africa variety from Calabar to England in 1841. It was deposited in the museum of *Materia Medica* of King's College (London) by professor E. Forbes. Note that Daniell was friendly with professor Bentley¹⁰ (of Kings College, London, and the Pharmaceutical Society), and it is possible that Daniell sent the specimen to Bentley, who then gave it to Forbes. Daniell meets the Katemfe fruit again in 1853 while stationed in Sierra Leone (see Daniell, 1854c).

⁹JJ Bennett FRS, was secretary of the Linnean Society (London), and Keeper of the Banksian herbarium and library since its transfer to the British Museum in 1827. See Carruthers (1876).

¹⁰See Daniell's letter from Jamaica to Bentley.

1.6 Old Calabar

During the period 1839–1841 Daniell seems to have spent a considerable period of time in the region of Calabar, Nigeria, and took a keen interest in the local customs, language and medicine. Calabar is well described in one of Daniell’s early articles (Daniell, 1845a, p 512–514, p 555). Daniell also made a record of the language and vocabulary used in Calabar (see Latham, 1846). Daniell tells us he was resident in Calabar in 1841.

The houses and life-style of the native chiefs of Old Calabar were somewhat unusual, as Daniell indicates in the following passages from a paper he read before the Ethnological Society¹¹ entitled *On the natives of Old Calabar, West coast of Africa* (Daniell, 1846b, 1848).

The most remarkable architectural structures, however, which attracted the attention of the stranger, are the massive wooden houses of the more powerful chiefs. Most of these mansions were constructed either in Clarence Town (Fernando Po), or Liverpool, and transhipped from thence in detached pieces, accompanied by European carpenters, who generally paid the forfeit of their lives in erecting them. ... The rooms are, in many instances, elegantly fitted up with all the gorgeous and luxurious furniture of European habitations.

(Daniell, 1846b).

Daniell goes on to describe a visit he paid in 1841 to Egbo Sack, one of the principal chiefs of Old Calabar.

In order to give a general idea of the mode of life of the upper classes of the natives of this town, it will be as well to transcribe from my journal,¹² a few passages relating to a visit which I paid in 1841, to Egbo Sack, one of the principal chiefs of Old Calabar. “Upon my entrance into the room set apart for my reception and that of my party, the first object that arrested attention, was a small chamber or recess, within which were placed two or three sofas and ottomans, each carefully covered with a fold of chintz, and having the name of the owner emblazoned in gilt letters on the backs; a chest of drawers, a card table, and two beautiful and exquisitely finished time-pieces, which, with half-a-dozen chairs, constituted the furniture of this little alcove. In the centre of this apartment was situated a moderate-sized table, covered with a white table-cloth, and garnished with its usual accompaniment of knives, forks, plates &c. *à la Anglais*; while on the side table were ostentatiously arrayed decanters of spirits, palm wine, and native bitters. The country wine, and exudation from the *Saguerus vinifera*, or wine palm, known in this place by the term of *Minniefoot*, was flanked by several bottles of champagne and other wines, which were doubtless stationed in this conspicuous position, the more readily to attract the eye of the white stranger.

¹¹28th January, 1846. Note that while Daniell gave this talk to The Ethnological Society, the talk was first published in the *Edinburgh New Philosophical Journal* (Daniell, 1846b). This talk did not appear in the *Ethnological Society Journal* until 1848 (Daniell, 1848).

¹²Unfortunately this *Journal* has not been found.

“After a short and desultory conversation with our host, bitters (composed of the roasted rind of the sago palm-nut, steeped in brandy) were handed round, and the dinner immediately followed. It was carried into the outer compartment by female servitors, younger branches of the family, each bearing on her head a large calabash, covered with a square piece of white cloth or cotton. Most of these coverings (subsequently used as napkins) were richly embroidered with a number of minute designs, which must not only have greatly taxed the patience of the sempstress, but have required more than ordinary native skill in the execution. As we sat down in succession, a polished brass ewer, containing cold spring water, with a similar metallic basin and a large towel, were carried by two slaves to each individual, for the ablution of his hands, a custom, I believe, of oriental origin, and one that is almost universal in Central Africa. In this and the other rivers of equatorial Africa, it has been followed from time immemorial.

“The first course consisted of several dishes commonly known under the vulgar denomination of ‘yam-chop.’ They were a heterogeneous mixture of boiled yams, plantains, palm-oil, several varieties of dried and fresh fish, shrimps, and a few green vegetables, well seasoned with pepper. The succeeding course (for we had only two) consisted of a dish considered by themselves as their *chef d’œuvre* in the culinary art, somewhat similar to the preceding. It was made with palm-oil, dried fish, and shrimps, but with a more abundant supply of triturated vegetables, with the addition of ochres and a rich soup, the whole being boiled together with the same condiments as the former dishes. Foufo, or mashed yam, was eaten with that dish, as neither boiled yams nor plantains were incorporated with the ingredients in its preparation. During the period of our feasting, each person was attended by a small black slave, who constantly agitated the air around him by means of large fans, and thus all were kept in a refreshing state of coolness. Upon removal of the cloth, a small jar containing longitudinal pieces of the rind of the wine nut (*Sagus pendunculata*) was placed on the table, in conjunction with large decanters of palm-wine, spirits, champagne, &c.; for their country usages do not permit them to drink during the progress, but always after the termination of the meal. The ewer and basin were again called in requisition, and after a few hours of convivial enjoyment, in which our kind host fully participated, we departed to our respective vessels, amply satisfied with our cordial reception.”

(Daniell, 1846b)

1.6.1 The Calabar bean Ordeal poison

While in Calabar Daniell came across a so-called Ordeal poison derived from the seeds of a leguminous plant which grew locally, and have since become known as Calabar beans. The judicial system was particularly harsh in Calabar, with the widespread use of these poisonous seeds, as Daniell describes in the following extract from a talk he gave to the Edinburgh Philosophical Society on 28th January, 1846 (Daniell, 1846b).

The government of the Old Calabar towns is a monarchical despotism rather mild in its general character, although sometimes severe and absolute

in its details. The king and chief inhabitants ordinarily constitute a court of justice, in which all country disputes are adjusted, and to which every prisoner suspected of capital offences is brought, to undergo examination and judgement. If found guilty, they are usually forced to swallow a deadly potion, made from the poisonous seeds of an aquatic leguminous plant, which rapidly destroys life. This poison is obtained by pounding the seeds and macerating them in water, which acquires a white milky colour. The condemned person, after swallowing a certain portion of the liquid, is ordered to walk about until its effects become palpable. If, however, after the lapse of a definite period, the accused should be so fortunate as to throw the poison off from the stomach, he is considered as innocent, and allowed to depart unmolested. In native *parlance* this ordeal is designated as “chopping nut.” Decapitation is also practised, but not so much amongst criminals as the former process, being more employed for the immolation of the victims at the funeral obsequies of some great personage. Drowning is sometimes resorted to as a substitute for the first means of destroying life.

(Daniell, 1846b)

An earlier account is that by Holman who visited Calabar in 1828, in his book *Voyage to Old Calabar* (see Simmons, 1958). For an excellent account of the history and pharmacology of the Calabar bean, see the article by Holmstedt (1972).

A similar account was given by Daniell in June 1845, in a lecture to the British Association for the Advancement of Science, held in Cambridge, entitled *On the natives of Old Calabar, Africa* (Daniell, 1846a).

Daniell’s lecture on the same topic (Daniell, 1846b) which he gave to the Ethnological Society [28th January, 1846] is significant, since it seems to have stimulated research into the pharmacological properties of the active substance of the Calabar bean by Robert Christison, Professor of Materia Medica at the University of Edinburgh (see below). Professor Christison’s initial findings were presented in a paper read before the Royal Society of Edinburgh on February 5th, 1855, entitled *On the properties of the Ordeal bean of Old Calabar, Western Africa* (Christison, 1855a). A slightly shortened form of this paper was also published in the *Pharmaceutical Journal* (Christison, 1855b).

In this article Christison describes how his interest in the Calabar bean was stimulated by Daniell’s account as follows.

Meanwhile I have fallen in with another African Ordeal-poison, of much greater energy and interest, and not hitherto mentioned by any author on poisons I have consulted, although prevalently used in a district long accessible to Europeans. The only notice of any kind that I have seen of it, is a short allusion to it by Dr Daniell, in an ethnological paper in the Edinburgh New Philosophical Journal for 1846, p 319. From such trials as I have made, it seems one of the most singular and intense poisons yet known, and well worthy of a more complete investigation than I have been hitherto able to accomplish.

(Christison, 1855a)

As the Medical Officer, Daniell was privileged to see the effects of the Calabar bean, as Professor Christison describes.

I have received a few days ago some additional particulars respecting the uses of this poison from Dr Daniell, who resided for sometime in Calabar, and, by his influence with Eyamba, the king of the country, was allowed to witness scenes which are usually forbidden to Europeans. This gentleman confirms the testimony of the missionaries as to the deadly nature of the poison, and says it is used not only as an Ordeal-poison, but likewise often for dispatching the numerous wives and slaves which are buried on the occasion of the funeral of men of consequence.

(Christison, 1855a)

The plant itself was not known to botanists, and the difficulty in obtaining specimens was compounded by the fact that the plant was cultivated only in certain places, as Christison indicates.

According to information communicated to me by Dr Daniell, it was stated to him by the natives to grow in marshy places near Attarpah and Old-town in Calabar; and the Rev. Mr Waddell was informed that the plant is everywhere destroyed by order of the King, except where it is preserved for supplying the wants of justice; and that the only store of seeds is in the King's custody.

(Christison, 1855a)

The natives in Calabar were generally ignorant of the plant, as the following passage from a letter from Rev. Thompson to Mr Andrew Murray (29th August, 1859) indicates.

Very few of them (none that I have ever met with) know anything of the plant at all, however well acquainted they may be with the actual bean. Various most different leaves were brought to me as those of the Eséré;¹³ nor was it 'till the ripe fruit was seen that success was obtained, and a fine plant pointed out to me, with numerous pods still attached. From this plant we have got the flowers also.

(Balfour, 1861)

Eventually plant specimens were obtained, and a complete botanical description of the plant *Physostigma venenosum* was eventually made by John Hutton Balfour, Professor of Medicine and Botany at the University of Edinburgh, in 1860 (Balfour, 1860). However, although the seeds brought back from Calabar by Rev. Waddell germinated in the Edinburgh Botanic garden, they did not flower unfortunately, as Balfour says.

[the plants] "...grew vigorously and produced twining stems and leaves, they never flowered" (see Balfour, 1861).

The flowers, preserved in spirit, were brought to Professor Balfour in Edinburgh, by one of his former pupils, the Rev. Zerub Baillie, who was one of the missionaries in Calabar (Balfour, 1861).

Returning to Daniell, he left Calabar in June 1841. He describes leaving the area in his book (Daniell, 1849) as follows.

¹³Eséré is the native name for the plant.

Towards the close of the month of June 1841, a large ship to which I was then attached, having a compliment of 40 white men, passed from the Old Calabar river to Fernando Po to procure the necessary supplies of fish, water and provisions prior to the homeward voyage. During the period of seven [months ? weeks?] in which the crew were engaged in loading the vessel at the usual anchorage of the town, they suffered but slightly from the endemic diseases of the place.

(Daniell 1849)

It seems possible (but unlikely) that Daniell was attached to the 1841 Naval expedition to the Niger (exact dates ???) led by Captain (later Admiral) Henry Dundas Trotter¹⁴ (1802–1859). This consisted of three Royal Navy steamers (Albert, Wilberforce, Soudan) which navigated the Niger as far as the town of Eggan (Nigeria), but were forced to return owing to sickness and mortality (Encyclopedia Britannica, 11th Ed, 1911; Niger entry). I have not found any mention of him in the ship's crew listings for this expedition.

However, a merchant ship called the Warea is mentioned in the account of 1841 Niger expedition (Allen and Thompson 1848)—so Daniel might have been on this. Daniell says he left Calabar in June 1841.

1.7 In Britain 1841–1844

1.7.1 MRCS diploma

Daniell must have been back in England by at least October 1841, since he would have had to apply for the November MRCS examination at the Royal College of Surgeons in London by then (see RCS, 1842). In the event Daniell was successful in the MRCS examination of November 5th, as the following entry appears in the Royal College of Surgeons in London¹⁵ *Examination Book 1831–44*, volume 4, page 361, dated November 5th 1841.

William Freeman Daniel (Diploma), Manchester, £21

Interestingly, in this entry Daniell's surname is still spelled with a single 'l' which is consistent with the entries in the baptismal register. Unfortunately, the Examinations entry does not give a full address, although it does indicate the town as Manchester. Quite why Daniell later changed his surname to have 'll' is not clear, although it appears that such minor alterations to surnames was not uncommon in those days.

Daniell was one of a group of eleven students whose success at the examination was indicated in the November 19th 1841 issue of the *London Medical Gazette*, as follows.¹⁶

¹⁴see DNB entry.

¹⁵It was not until 1843 that the official name of the Royal College of Surgeons in London became 'The Royal College of Surgeons of England'.

¹⁶*London Medical Gazette, being a weekly Journal of Medicine and the Collateral Sciences*, vol 1, 1841–2, p 320. [November 19, 1841].

ROYAL COLLEGE OF SURGEONS.
 LIST OF GENTLEMEN ADMITTED MEMBERS.
Friday, November 5, 1841.
 G. Bransby, A. C. Fenoulhet, W. F. Daniel,
 J. Hudson, E. Ingoldby, B. Evans, R. T. Frere,
 F. G. Browne, R. Brown, F. Ranger, R. Gee.

see my pencil notes in original draft here

Daniell probably spent most of this time in England writing up his experiences in Africa. During this period, Daniell described his observations in Africa in a series of 12 articles which appeared in the *London Medical Gazette* between January and July 1845 (Daniell 1845a). These were Daniell's first publications. They also formed the basis of Daniell's book (Daniell 1849).

Drawing upon his experiences in West Africa, Daniell apparently wrote this series of articles with a view of filling a gap in current medical knowledge. For example, in the first article he writes the following.

During my residence in several of the rivers which form what is termed the delta of the Niger, and when anxiously engaged in my professional duties, I have often painfully felt the necessity of a work of reference which might throw some light on the disorders that were endemic in those districts, but I must confess that I have found nothing to aid my investigations on this important subject. This hiatus I have now essayed to fill up by the few succeeding hasty and, I fear, imperfect sketches. I am fully aware of the deficiencies that must almost necessarily be apparent in them, but I trust that ... the facts and observations I have to offer may contribute to the benefit of those who are obliged to visit the coast of Africa.

(Daniell 1845a, p 436)

West Africa was notorious for being the *white man's grave* as Daniell indicates in a later article as follows.

If we contemplate the present condition of these settlements, we shall discover ... how little has been done to abate the causes which create these deplorable results: the ominous title of the 'white man's grave' has been but too correctly applied to the countries situated within the tropics in Africa.

(Daniell, 1845a, p 516)

Daniell reads a lot of the contemporary medical writing which relates to West Africa, e.g. articles by his friend Dr Willis¹⁷ (see Daniell 1845a, CV 1g, p 555), Mr Oldfield (CV 1g, 888), Dr Burton and Mr Boyle¹⁸ (CV 1a, 436; Boyle, 1831)) etc.

see my pencil notes in original draft here p 10B

¹⁷Dr Robert Willis (1799–1878). MD (1819), MRCS (1823), LRCP (1837). Was also a librarian at Royal College of Surgeons. He wrote a book on William Harvey (Willis, 1878).

¹⁸Mr James Boyle, was a naval surgeon on board HMS Cyrene in 1822. Wrote a book of medicine on the west coast of Africa (Boyle, 1831).

1.8 Expedition to West Africa 1844–May 1845

Daniell probably went off to Africa again sometime in late 1844 after finishing writing his series of articles for the London Medical Gazette (published during Jan–July 1845), and returning to England in 1845 sometime before June as we know he gave a presentation in June 1845 in Cambridge.

It seems that Daniell probably stayed in England until about 1844, when he went on another expedition to West Africa, as plant specimens in the Missouri Botanic garden indicate they were collected in Sierra Leone in 1845. However, there is no evidence that Daniell went to the USA, but an exchange of botanic material between botanic gardens is quite common, and would account for this.

check out the Missouri Bot correspondence again

At this time Daniell says he met a Dr King¹⁹ on the Niger as follows (see Daniell, 1857c)

In 1845 Dr King, of the Ethiopie steamer, then trading up the Niger, presented me with pieces of this bark²⁰, purchased by him in the markets of Egga.

(Daniell, 1857c, p 400)

Daniell was also in Ambriz sometime in 1845, as Daniell indicates in his article on the black pepper of Western Africa (Daniell, 1854d), as follows.

When resident at Ambriz in 1845, I noticed that no inconsiderable quantity of apparently the same fruit, was brought by the slave-kabookas from the neighbourhood of M'bomma and other inland provinces of the Kongo...

(Daniell, 1854d, p 199)

Note that Daniell also mentions being in Angola in two other articles (see Daniell 1850, 1857b).

quote some of this from Daniell's article

1.9 Back in England early 1845

In June 1845, Daniell gave a presentation to the 15th Meeting of the British Association for the Advancement of Science, which was held in Cambridge. His talk was entitled *On the Natives of Old Calebar, Africa* (Daniell 1846a).

In July 1845 Daniell is in London²¹, and meets with officers from the Admiralty regarding a forthcoming expedition to Africa, as the following extract of a letter to Sir WJ Hooker (dated July 17, 1845) indicates (for full letter see Section A.1.1).

¹⁹I believe this is Mr Richard King (1811–1876). Surgeon and naturalist on expedition led by [—] to Great Fish River in 1832. He also was a founder of the Ethnological Society in 1842 (see DNB).

²⁰Yellow bark of the yellow-dye tree described in Daniell's article (1857c).

²¹7, Trinity Street, Trinity Square, Newington, London (Daniell 1845c).

I have just received your kind invitation for Saturday next, but I regret that prior engagements with Sir W Burnett²² and the Admiralty prevent me from having the pleasure of visiting you. Two or three officers who are on the eve of visiting Africa feel extremely anxious to see me, so that in fact the whole of the day would be fully occupied. Would either Monday or Tuesday suit your convenience (I leave town on Wednesday) if so, I will wait upon you early in the morning as I feel anxious to see the Niger expedition collection. . . .

(Daniell, 1845c)

In August Daniell writes to Sir WJ Hooker from Liverpool (Daniell, 1845d), saying he has found a plant for him as follows. The travelling he refers to would seem to be in Britain, since there would not have been enough time for him to travel to Calabar and back since his last letter in July—see above (Daniell, 1845c).

7 Canning Place,
Liverpool
August 26 1845

My dear Sir William,

After much trouble and travelling I have managed to obtain for you a specimen of the *Amomum clusii*²³, which I found in Old Callabar Western Africa. It is the same as those I gave to Dr Pereira²⁴ and which he considers to be so scarce in England. I had also procured for you some other seeds, but I regret to state that upon examination they were found entirely worthless. I am however going to see if I can obtain for you some I gave to a lady in Cumberland—if she has not planted them in her conservatory. If I should be so fortunate I will bring them with me when I come to town—or otherwise transmit them by a friend. If there is any other tropical production I can procure for you I shall feel great pleasure in endeavouring to assist you in your wishes—but before I leave England, I shall probably have the pleasure of seeing you in reference to the transmission of plants, and the apparatus best fitted for their preservation.

I remain

my dear Sir William

yours faithfully

WF Daniell

(Daniell, 1845d)

In November 1845 Daniell writes a hasty letter to Sir WJ Hooker (Daniell, 1845e) to tell him that he is thinking of going on another expedition to West Africa, as follows.

²²Sir William Burnett, 1779–1861. Physician-general of the navy (see DNB).

²³See Daniell 1845a, p 513. See also the articles by JD Hooker (1852a, 1852b) and Pereira (1855a, 1855b).

²⁴See Pereira (1855a, 1855b) and the note by Pereira at the end of the article by Hooker 1852b. Pereira used Daniell's specimens for the drawings of the plant in some of his articles.

7 Canning Place,
 Liverpool
 November 4th 1845

My dear Sir William,

I write in great haste to inform you that I leave England the latter end of this or the commencement of next week in command of a secret exploratory expedition into central Africa (not up the Niger) but by a track which no European has yet attempted. I am anxious to have [those] brief remarks in reference to the best method of distinguishing plants and also respecting those you would wish to have [.] I have sent you three specimens from the Cross river close to the [Inna] (1) the *Calamus secundiflorus*²⁵ (you will find figured in [—] de [—] (2) is one of the Sapota (I think the *Achras*²⁶ [Bapotilla] and the third are the seeds from a species of cannae, probably the *Canna Indica*. Would you have the kindness to write to me in reference to your wishes and also as to the particular apparatus for bringing home plants. I shall probably write to you from Africa if you think it desirable.

I remain in great haste
 my dear Sir William
 yours very sincerely
 WF Daniell

Sir W. Hooker, KCH
 &c &c
 (Daniell, 1845e)

It seems however, that Daniell's expedition probably did not leave until at least February 1846 (certainly by April—see Daniell, 1846b), as he gave a talk in Edinburgh on 28th January, 1846.

However, in the Kew archives there is a newspaper cutting attached to a letter from a Robert C. Crosbie to Sir WJ Hooker (Crosbie, 1846) which describes an expedition leaving for Africa under the command of a GW Daniell. The newspaper cutting, which is most probably from the American newspaper *Daily National Intelligencer*²⁷ of Friday January 30, 1846, is as follows.

[*Daily National Intelligencer*]
 [Friday January 30, 1846]

²⁵Now reclassified as being in the genus *Laccosperma* (Mabberley, 1989).

²⁶Now reclassified as being in the genus *Manilkara*.

²⁷[red notebook H, p.75] In October 2010 a Google search with the key words 'GW Daniell Liverpool Newspaper' located the text of this newspaper cutting in the *National Intelligencer* newspaper of Friday January 30, 1846, citing the source as the book *National Intelligencer Newspaper Abstracts, 1846* by Joan Marie Dixon (Heritage Books (www.HeritageBooks.com)). Furthermore, there is also a book by Ames (William E) titled *A history of the National Intelligencer, 1800–1869 (1962)*, pp. 1046 (and ? a second edition dated 1972). It seems that this newspaper was first published in 31 October, 1800, with the title *National Intelligencer and Washington Advertiser*. However, on 1st January 1831 it changed the title to the *Daily National Intelligencer*. Presumably this newspaper was available in Liverpool.

A new expedition has recently left Liverpool for the interior of Western Africa, under the control of Mr GW Daniell²⁸, a surgeon of some experience, in order to explore further the discoveries of Mr Macgregor Laird²⁹ and others, and from which it expected that some very important commercial as well as political information and advantages will be obtained.

Crosbie's letter to Sir WJ Hooker (which contained the above newspaper cutting) is as follows.

Colonial Buildings, Tuesday
[no date given]

Dear Sir

I have shown the enclosed to Jamieson³⁰ who had previously seen it in some Liverpool Newspaper. He is however, as ignorant on the subject as I am.

If the whole thing be not [a load?] of nonsense, I presume it must be the scheme of some individual, much wiser than his neighbours, who has [found] a gold mine or [Mares'] Nest, and naturally wishes to keep a grand secret!! Certainly Daniell never whispered the affair to us.

If however, it is to be for the good of Africa, I certainly wish him all success.

Yours sincerely

Robert C. [Crosbie]

(Crosbie, 1846)

1.9.1 Articles published in *Friend of the African*

Soon after this Daniell has a series of articles published in the journal *Friend of the African* (between December 1845 and February 1846) (Daniell, 1845b). These articles are extracts of Daniell's lengthy series of articles with a similar title (Daniell, 1845a), which were published between 1844 and 1845³¹

1.9.2 Lecture to Edinburgh Philosophical Society

In January 1846 Daniell gave a lecture to the Edinburgh Philosophical Society on Jan 28 1846 (see Daniell 1846b).

see my pencil notes in original draft here p 8B

January 1846: Lecture to the Edinburgh Phil Soc

On the 28th January 1846, Daniell presented a paper to the Edinburgh Philosophical Society entitled *On the Natives of Old Callebar, Africa* (Daniell 1846b). This talk was

²⁸GW Daniel was a surgeon who worked at a Mental hospital in Southwark, London. He had an MD from Erlangen, and MRCS—see my info from Erlangen. Note that WF Daniell also had a connection with Erlangen

²⁹Macgregor Laird was involved in one of the Niger expeditions. He was involved in exploring the Niger during 1832–33. See Encyclo Britanica, v I, p 333.

³⁰Robert Jamieson—see DNB.

³¹I am grateful to Mr Malcom Thomas (Librarian, Friends House, 173-177 Euston Road, London NW1 2BJ; tel: 0171-387-3601) for researching the journal *The friend of the African* for these Daniell articles in July 1997.

presumably an expanded version of his previous presentation to the British Association meeting in Cambridge the previous June.

The article, which was published in the April issue of the *Edinburgh New Philosophical Journal* (Daniell 1846b), gave a detailed account of Daniell's life and experiences in Calabar, including even the local names for the *eight days* of the week!

1.10 Africa expedition 1846–7

Daniell probably left for Africa in either February or March 1846, and returning in June 1847. During this time he appears to have visited the Congo river, M'bomma³², Ambrizete, Ambriz, Luanda³³, and Benguela (see Daniell, 1850, 1857a part II).

Daniell gives some specimens to Dr Pereira (see Pereira, 1855b, p 247) as follows.

I am indebted to Dr Daniell for specimens gathered from the highlands on the right of the river Congo.

(Pereira, 1855, p 247)

Daniell also notes in a letter to WJ Hooker (August 26th 1845) that he has given some specimens to Pereira (see Daniell, 1845d)

In April 1846 Daniell writes to Sir WJ Hooker from Angola (Daniell, 1846c).

Angola [South] W. Africa

April 24 1846

My dear Sir William,

I have not forgotten my promise when last I visited you, of writing a few lines the first convenient opportunity, and of stating a few incidents as to the position and botany of the place, at least so far as I am able with my limited knowledge of the country. The track I am now resident comprehends from Ambrizete³⁴ just to the city of Loanda the capital of Angola. The aspect of the country is rather more elevated than the portion of land near the mouth of the Congo—which is densely covered with mangroves and palms occasionally intermingled with *Pandanus candelabrum*. Succeeding it the hilly mounds that dot the interior are covered thickly with the Gramineae of which I have collected several specimens (dried) for you—nearer the coast the [Cyperaceae] are most abundant and I believe the principle species—is the *Cyperus Papyrus* ? Near it is a species of *Convolvulus* [Mengantles] [—] ? which covers the sandy shore in every direction. From the want of rain the sea [land] is comparative nothing but dried grass—in which are isolated thickets in which a large species of *Cactus Quadrangularis* ? Inland, you have almost every [species] of S. America and the West Indies to enumerate which would occupy too much space. The principal plants and trees appear (from my little information

³²Probably what we now call Boma.

³³Spelled Loanda in Daniell's time.

³⁴Ambrizete is on the coast of Angola just north of Ambriz.

on the subject of tropical Botany) to be principally composed or comprehended of the Annonaceae, Sapindaceae, Sterculiaceae, Melastomaceae³⁵, and Gramineae, and I am collecting slowly dried specimens for I have been laid down with [very] severe attacks of fever—from which I am but slowly recovering. I have collected about 100 plants, which you shall see when I get to England. I have also got a few duplicates which you can have, if not the whole of the others, but that will depend on circumstances. I shall not be able unfortunately to collect the entire botany of the principal places, but I will select the principal. I shall if possible endeavour to send to Lady Hooker, if her Ladyship wants accept of them a few of the curiosities of the country. I hope you are well and the garden which was kept in such capital order is still in status quo and when I arrive in England should I be spared, I will often visit it. Write to me if convenient as a vessel sails from England within the fortnight after your receipt of this letter. Unfortunately I cannot accept your kind offer respecting the useful medium of conveying tropical plants to England as I shall possibly be a passenger either in a man of war or laden merchant vessel. Below I have appended my address and if there is anything I can do for you rest assured I shall try my best. And with every sentiment of esteem and respect

I remain
my dear Sir William
yours ever sincerely
WF Daniell

address

WF Daniell

Care of Mess. Chas. Horsfall & Sons

Exchange Bds.

Liverpool

&c &c

(Daniell, 1846c)

Daniell also wrote to Colonel Julian Jackson (Secretary to the Royal Geographical Society 1841–47) at this time from Angola (Daniell, 1846d). Interestingly, this letter has a note on the top indicating that it was received on July 18th 1846.

Angola. May 1. 1846 —S.W. Africa

My dear Sir,

I take this opportunity when in this part of the African continent, to let you [know] what particular part of the African country I am exploring. I have been chiefly near Ambriz from there to Loanda city at which place I was astonished to find heavy [butteries] and large granite and other houses; and well garrisoned by the Portuguese—I shall probably go into the interior of Benguelah, but that is uncertain as I am equally anxious

³⁵Now *melastomataceae*.

to investigate the countries to the southward of the Congo. I cannot go far inland in this portion of the country as the Portuguese influence is so predominant as to prevent all Englishmen from penetrating far. I have been twice laid up fever of two weeks duration, so severely have I suffered from my journey into the country that I must remain to [recoup] for a few months until the sickly season shall have passed. It is a track of coast eminently unhealthy and deleterious to the white constitution. I met a Portuguese who had travelled with a Kabookah (ie a trading caravan) from Loanda to the Mosambique, he stated there was no danger when some distance inland. This time he stated he had deviated far to the southward and had heard of a white man still further to the southward. I think this must be Lieut. Ruxton ?³⁶ or a Portuguese trader. If the former he had passed the dangerous tribes near the sea coast, and would probably accomplish his object if not stopped by a tribe at war with another warlike nation directly in his route. But all this is mere conjecture as regards the person. I questioned several of the Kabookah attendants natives that had come from far inland parts but they all concurred in the same statement. During my stay in London, I received many friendly [—] of your kindness and attention, and I feel anxious to repay a portion of them. If you will therefore receive a few curiosities or in fact anything obtainable from the countries, be so good as to let me know. I have appended the address below if you can conveniently write [in] a fortnight after the receipt of it. However whether you write or not I shall bring you some — for I cannot forget your kindness. I shall probably be in England in about 12 months unless murdered or fever-victimised and I will give you then every information as to this little known and visited coast. With every sentiment of respect and esteem,

I remain
my dear Sir
yours ever sincerely
WF Daniell

Coln R Jackson
Roy: Geograph: Societ:
London.
address
Mess. Chas: Horsfall and Sons
Exchange Bds.
Liverpool
(Daniell, 1846d)

According to the *Accessions Register* of the Botany Department of the British Museum (Natural History), Daniell presented some specimens on the 16th October 1847. It is significant that Daniell's friend Mr Bennett was *Keeper* of the Herbarium of the British Museum.

The entry in the *Accessions Register* is as follows.

³⁶George Frederick Ruxton.

13 species of plants from the River Congo³⁷

Interestingly, the published article of Daniell's lecture to the Ethnological Society (Jan 1846) which was published in April 1846 (see Daniell, 1846b), carries a footnote from the editor about a further expedition of Daniell's, as follows.

Mr Daniell, who is a very enterprising and talented medical gentleman, is again on an expedition to the West coast of Africa.

Daniell therefore must have left England sometime between February and April 1846, since this issue of the Journal was published in April 1846.

Note also that here Daniell is referred to as "Mr Daniell". It appears that Daniell is not called "Dr" until gaining his MD qualification, which appears to be sometime before 1849 since the first appearance of the MD qualification is in his book which was published in 1849 (Daniell, 1849).

a ref saying Daniell was in Angola in April 1846 - see opp p 9

Daniell was in Ambriz/Loanda Angola in April 1846. Note there is an interesting passage from one of Livingstone's books (p 395), about when he was in Loanda (31st May - 20 Sept 1854)

need to check this passage and source

"Several English houses attempted to establish a trade about 1845 and accepted bills on Rio de Janeiro in payment for goods, but the increased activity of our cruisers had such an effect upon the mercantile houses of that city that most of them failed. The English merchants lost all, and Loanda got a bad name in the commercial world in consequence. "

picture of Sao Paulo de Loanda (St Pauls of Luanda) & harbour in this book p 394

see kew/Brit mus specimens / table Mat/mufacas mat from Angola

In an article about the Cannabis plant in Western Africa (Daniell, 1850) Daniell indicates a number of places visited by him on one of his expeditions to the Congo and Angola, as follows.

During a residence of many months in several of the provinces of the Kongo and Angola ... By the people of Ambriz and Musala, it is pronounced D'yambah, while to the various races in Kaffraria, it is more generally known under the Hottentot name of *Dakha* or *dacha* ... The specimen now forwarded was procured from a small plantation on the banks of the Rio Ambriz, near the town of Kincola ... In the river Zaire, the D'amba flourishes in several localities adjoining the town of M'bomma, and also in the provinces of Sognio on the left bank of the same stream...

(Daniell, 1850; p 363)

A note referring to Daniell during his visit to the Congo can be found in Pereira's Elements of Materia Medica (Pereira, 1855; p 247), where in an article on the Amomum Melagueta, the author states:-

³⁷see my ref as a letter from the Botany library, 27/11....

"I am indebted to Dr Daniell for specimens from the highlands on the right of the river Congo."

Also, note that a Dr RG Latham tells us that Daniell also collected vocabularies of Congo and Ambriz languages at this time; Dr Latham says these were collected in 1846 (see my Ethnography photocopies in CVol) (see Latham, 1846, 1847).

Interestingly, Latham described a number of African languages in a note included in the appendix of volume 2 of the *Narrative of the expedition to the river Niger*³⁸ (Allen and Thompson (1848).

1.11 In Britain again June 1847

18 St. James St.

Liverpool

19th June 1847

My dear Sir William,

I have just arrived in Liverpool from Angola, having since my last letter to you been almost confined to my bed, from another attack of sickness. I have also been extremely unfortunate in losing a few presents which I had obtained for Lady Hooker, with some seeds, by the loss of the launch that was conveying them to the vessel. I have however brought the Kola-nut a new species of Mallagetta³⁹, and a black pepper like that of the East Indies but wholly unknown in England. I have [gums] etc and a [—] collection of plants also for you. I am at present so unwell as to be unable to visit you for some days. However I think it will be only for a brief period. I cannot enumerate the specimens of other plants cottons, aloes, the nut of the wine palm etc etc all of which are in good preservation, the localities etc. I will give you, when I have the pleasure of paying you a visit at Kew. With warm regards

I remain

D^r Sir William

yours very sincerely

WF Daniell

(Daniell, 1847b)

Daniell writes again in July when he is in London (Daniell, 1847c) as follows.

³⁸Latham RG (1848). *Vocabularies of the Edeeyah, Dualla, or Cameroons, Bimbia, and Fishmen languages. On the Kru, Edeeyah, and Bimbia languages.* (by R.G. Latham M.D.)

³⁹This specimen was probably the one which was late named by Dr JD Hooker as *Amomum danielli*. See Hooker (1852a, 1852b), Hanbury (1873), and Pereira (1855a). Note that Daniell thanks Dr Pereira for helping him on the botany of the *Amomum* species—see Daniell, 1845a, p 513.

21 Carlton Terrace, July 27

Brunswick Street

Trinity Square

Southwark

My dear Sir,

I have at last arrived in London, but am at present very unwell. I have sent you a few articles from Africa for yourself and Lady Hooker[.] I will call and see you towards the end of the week, if I feel sufficiently well—so that I can select what seeds and plants you may require for immediate purposes.

I remain

my dear Sir

yours ever sincerely

WF Daniell

(Daniell, 1847c)

1.11.1 Female circumcision

It is possible that this article reflects Daniell's experiences during one of his more recent expeditions to West Africa, submitted this article to the Journal after his return to England.

Again Daniell draws on his experience in Calabar:-

In Eboe, Old Callebar, and other parts of Western Africa, it [female circumcision] occurs between the years of four and nine, —much, however, will depend in these cases on the locality, and the purpose for which it is intended. When in Callebar river, I had an opportunity of witnessing the mode of operation undertaken there, as elsewhere, by aged females.

(Daniell, 1847a; p 376)

Daniell goes on to describe in detail the various operations and their indications, but was unable to discover the origin of this barbaric custom. He says:-

During my stay in those pagan towns where female circumcision is supported, I have frequently attempted to procure information of its early origin, but without success; the invariable answer to my queries was, that it had been transmitted to them from their fore-fathers, and further than this they knew not.

(Daniell, 1847a)

1.11.2 Plant donations to British Natural-History Museum

According to the *Accessions Register* of the Botany Department of the British Museum (Natural History), Daniell presented some specimens on the 16th October 1847. The following is the extract from the Accessions Register.

13 specimens of plants from the river Congo: Dr WF Daniell

It is significant that Daniell's friend Mr Bennett was *Keeper* of the Herbarium of the British Museum.

1.12 The Army

Daniell's application form to join the then Medical Department of the Army (see Appendix 1), is dated October 22nd, 1847 (see document WO25/3932; 163736). At this time Daniell was living in London, since he gives the following address on his application form.

21, Brunswick Street,
Trinity Square, Southwark. [London]

Daniell's application was confirmed on 26 November 1847, and he was appointed to the rank of Staff Assistant-Surgeon. This rank was created in 1830 by Royal Warrant of the 29th July, replacing the earlier designation of Hospital Assistant (Cantlie, 1974; p 426).

Chapter 2

Africa

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2.1 McCarthy's Island—The Gambia

Daniell's first overseas posting was to the Gambia, West Africa, on 28th January 1848 (see Appendix B).

Posting: The Gambia: January 10th 1848—May 21st 1849.

Arrived in Gambia: February 1st, 1848

Left Gambia: March 3rd, 1849.

There is no information on Daniell for this posting, but we can probably assume that, like his second posting to the Gambia (1852), he was posted to McCarthy's Island, where the British had an Army garrison.

2.2 Home leave (March 1849–February 1851)

2.2.1 Book publication

During his leave period from Africa, Daniell had his only book published by *Samuel Highley, London* (Daniell, 1849). The title page was as follows.

Sketches of the medical topography and Native diseases
of the Gulf of Guinea, Western Africa.

by

William F. Daniell MD
Assistant Surgeon to the Forces

Samuel Highley, 32 Fleet St., London.
1849

The only copy of this book that I am aware of is in the British Museum Library, London. The British Museum catalogue number is 1170.K.35, and it is stored in the so-called 'Woolwich stack', and therefore needs at least 24 hrs notice for viewing at the BM reading room.

Daniell's book consists of four chapters (1: Bight of Benin, 2: Bight of Biafra, 3: Island of Fernando Po, 4: Islands of Princes, St Thomas, and Anno Bona) and also has an index. The book is really an expanded and more detailed version of his earlier series of articles which appeared in the *London Medical Gazette* (Daniell, 1845a), and also in the journal *Friend of the African* (Daniell, 1845b).

The general lack of any useful information regarding West Africa seems to have prompted Daniell to write about his experiences and observations there, and it seems that Daniell's original articles may have been based or styled on the series of articles on fevers by the explorer Richard Burton (Burton, 1842) which appeared in the *Provincial Medical Journal* (the forerunner of the *British Medical Journal*¹).

Daniell says that he overlooked the useful medical work by Boyle (1831) before he went to West Africa, and that on his return he found a series of articles on fevers relating to the Gambia and Sierra Leone by Burton (1842) particularly useful, as well as the Medical Reports of the Niger expedition (McWilliam, 1843) by Drs McWilliam² and Pritchett (Daniell, 1845a, p 436).

Although this portion of the coast of Africa is so much frequented, and so large a quantity of its produce is transmitted year after year to English ports, it is surprising how little information we have relative to its topography, seasons, capabilities, natural productions, inhabitants, &c. . . . It is much to be regretted that the causes of the insalubrity of Western Africa, and the pathology of its maladies, should be so imperfectly understood at the present time, since the preservation of life ought surely, above all others, to have been made the subject of most serious consideration.

During my residence in several of the rivers which form what is termed the delta of the Niger, and when anxiously engaged in my professional duties, I have often painfully felt the necessity of a work of reference which might throw some light on the disorders that were endemical in those districts, but I must confess that I have found nothing to aid my investigations on this important subject. This hiatus I have now essayed to fill up by the few succeeding hasty and, I fear, imperfect sketches . . . and that the facts and observations I have to offer may contribute to the benefit of those who are obliged to visit the coast of Africa. I shall also enter at some length into the host of pestilential diseases which there prevail, and which prove at periods far beyond the control and best efforts of human skill.

(Daniell, 1845a, p 436)

A somewhat scathing review of his book appeared in the *London Medical Gazette* in January 1850 (LMG, 1850). The anonymous author says:–

On looking over the title page we see there is a fault in it. The 'Native Diseases' of a country is always an ambiguous expression; and in the instance before us the text which follows does not sufficiently clear up the point. . . . We believe that the work before us . . . is too slight and sketchy

¹?–1843 = *Provincial Medical Journal*; 1844–1852 = *Provincial Medical and Surgical Journal*; 1853–1856 = *Association Medical Journal*; 1857 = *British Med Journal*.

²James Ormiston McWilliam (1808–1862). Surgeon in the navy, and medical officer to the Niger expedition (1841). He was on the ship *Albert*, and published his *Medical History of the Niger Expedition* in 1843.

to stand as a work of reference; and it is, moreover, not very well arranged. It is topographical and hygienic, rather than medical.

(LMG, 1850)

2.2.2 The D'amba, or Dakka, of Southern Africa

During this time Daniell must have been busy writing about one of the Cannabis plants as one of his articles entitled *The D'amba, or Dakka, of Southern Africa* (Daniell, 1850), appeared in the February 1850 issue of the *Pharmaceutical Journal*, the same month that Daniell was posted to the Gold Coast.

This plant, a variety of the *Cannabis sativa* or common hemp, was apparently known by Europeans as 'Tobacco of the Congo'. Regarding the smoking of Cannabis, Daniell says

The aboriginal method of smoking this narcotic, consists on fixing the clay bowl of a native pipe into the center of a large gourd . . . and passing it to each individual composing the community, who in succession take several inhalations of the smoke, which is quickly succeeded by violent paroxysms of coughing, flushed face, suffused eyes, and spasmodic gestures, with other symptoms indicative of its dominant action on the system.

(Daniell, 1850; p 364)

2.3 The Gold Coast (1850–1851)

Daniell's next army posting was to the Gold Coast (Ghana). His army record shows that he left England on February 12th 1850 and arrived in the Gold Coast some two months later on April 5th.

During the voyage to the Gold Coast, it seems that Daniell also visited the Portuguese island São Tomè (Gulf of Guinea), as Daniell describes buying some rhizomes there in 1850, similar to those of African Turmeric.

Similar kind of rhizomes are produced, probably from this *Canna* to a limited extent in the Portuguese Island of St. Thomas, a small sample of which I purchased in 1850, at St. Anna de Chaves, and deposited as specimens in some of the economic museums in this country.

(Daniell, 1859b; p 259)

Daniell was stationed at Fort Christiansborg, a trading fort close to present-day Accra, as he describes in an article on the Kola nut (Daniell, 1865b).

My knowledge of the tonic and astringent properties of the Kola-seeds, commences so far back as 1850, when in garrison at Fort Christiansburg, on the Gold Coast, West Africa, then but recently transferred to the British crown.

(Daniell, 1865b, p 455)

Fort Christiansborg (ceded to the British in 1871) was originally established by Denmark in the 17th century, and was one of three forts in close proximity; the other two being the British Fort St. James, and the Dutch Fort Crèvecoeur (ceded to the British in 1850). Accra grew up around these three forts, and still preserves the distinctions of James Town, Christiansborg, and Ussher Town (Crèvecoeur). Crèvecoeur was renamed after H. T. Ussher (dates??) the administrator of the Gold Coast colony from 1867 to 1872. (*Encyclopaedia Britannica*, 1910). Accra became capital of the Gold Coast colony in 1876 (Webster, 1966).

Some interesting views of the three Gold Coast forts are shown in some engravings in a book by William Bosman entitled *A new and accurate description of the coast of Guinea* (Bosman, 1967).

While Daniell was resident in Fort Christiansborg he made detailed observations regarding the local people, customs, and language. He described his observations in two talks presented to the Ethnological Society in 1852 on January 14th and February 11th, entitled *On the ethnography of Akkrah and Adampé, Gold Coast, Western Africa*. These were published first in the *Edinburgh New Philosophical Journal* (Daniell, 1852a), and only later in the *Journal of the Ethnological Society* (Daniell, 1856a).

2.4 Home leave (October 1851–September 1852)

Daniell left the Gold Coast colony on June 6th 1851, returning to the UK on October 14th 1851, a journey of some 4 months.

During this time in the UK, Daniell was elected to the Royal Geographical Society (24th November 1851); donated specimens to Kew Gardens; and gave two talks to the Ethnological Society (January 11th and February 14th 1852).

Daniell's address at this time was:

2, Bury Place,
Bloomsbury,
London.

This was the address Daniell gave on the application form for membership of the Royal Geographical Society.

2.4.1 Election to the Royal Geographical Society (1851)

Daniell was elected to the Royal Geographical Society on November 24th 1851, and had an unusually large number of supporting signatures³, possibly suggesting that he was held in high regard⁴.

³See Appendix C for details of the various people who signed his application form.

⁴Mrs Kelly, Archivist, Royal Geographical Society, London. (personal communication, 1980).

William Freeman Daniell, MD
 Assistant Surgeon to the Forces in Western Africa.
 2, Bury Place, Bloomsbury

is desirous of becoming a Member of the ROYAL GEOGRAPHICAL SOCIETY OF LONDON; and we the undersigned do recommend him as likely to become a useful and valuable Member.

WD Cooley

*Signature of Member having personal
 knowledge of the Candidate.*

GC Renouard

Charles Brooke

Thomas Hodgkin

*Signature of one or more other
 Members*

AG Findlay

John Hogg

Elected Nov 24/51

2.4.2 Ethnological Society lectures

Early in 1852, Daniell gave a two-part lecture⁵ to the Ethnological Society entitled **On the ethnography of Akkrah and Adampe, Gold Coast, Western Africa** (Daniell, 1852a, 1856a).

Interestingly, this lecture was first published in the *Edinburgh New Philosophical Journal* later that year (Daniell, 1852a). However it did not appear in the *Ethnological Society Journal* until four years later in 1856 (Daniell, 1856a).

2.4.3 *Zea mays* article

In February and March 1852 issues of the *Pharmaceutical Journal* there appeared a two-part article by Daniell entitled **On the *Zea mays* and other cerealia of Western Africa** (Daniell, 1852b).

This article deals with various cereals to be found on the West coast of Africa, namely maize (Indian corn), Guinea corn (Indian millet), African millet, Sierra Leone millet and common rice.

Daniell also donated some specimens of these cereals to the Pharmaceutical Society museum, as there is an entry in their Journal stating that Daniell donated “*Specimens of African and Indian millet*” to the museum (*Pharmaceutical Journal* (1852); 11, 436)

2.4.4 *Synsepalum dulcificum* article

In the April 1852 issue of the *Pharmaceutical Journal* there appeared an article by Daniell entitled **On the *Synsepalum dulcificum*, De Canad.; or Miraculous berry of Western Africa** (Daniell, 1852c). Of this remarkable fruit Daniell writes:

European voyagers and traders, who first experienced the singular effects of this fruit upon the palate, were, doubtless, greatly astonished at what to them must have appeared an extraordinary power, whose potency, for a certain length of time, could change the flavour of the most acid substances

⁵January 14 and February 11 1852.

into a delicious sweetness, and on this account unanimously conferred upon it the characteristic title of the ‘miraculous berry’.

Daniell tells us that this plant

... was formerly known to botanists under the name *Sideroxylon dulcificum*, until De Candolle, from the probability of its being a distinct genus, thought fit to classify it with others by the denomination of *Synsepalum*⁶.

and that the fruit is generally used by the natives to make

... their stale and acidulated kankies⁷ more palatable, and in bestowing a sweetness on sour palm wine and pitto.

2.4.5 *Sansevieria guineensis* article

In the September 1852 issue of the *Pharmaceutical Journal* there appeared an article by Daniell entitled **On the *Sansevieria guineensis*, or African hemp** (Daniell, 1852d). Daniell says

The modern Africans usually employ the exsiccated fibres of the plant in the construction of fishing-lines, nets, thread, and other kinds of cordage, considering them to be better capable of resisting the destructive action of continual immersions in sea-water than other vegetable substances similarly prepared.

2.5 McCarthy’s Island—The Gambia (September 1852–April 1853)

Daniell’s third overseas posting was back to McCarthy’s Island again, in Gambia, West Africa. It seems he left England on September 24th 1852 and arrived at McCarthy’s Island two weeks later on October 8th 1852 (see Appendix A).

While in Gambia, Daniell was “... in medical charge of the troops stationed at Macarthy’s Island ...” (Daniell, 1854a, p 61). He says in this article

In conformity of the routine of garrison duties pertaining to the Gambia command, I became stationed, towards the close of 1852, at Janjamberri, or Macarthy’s Island, a small military outpost established about two hundred and fifty miles inland from the embouchure of the river. This small island was advantageously situated between Pisanea and Kaya (the points from which the intrepid Mungo Park commenced his first and second explorations into central Africa), and afforded a rich field for botanical and ethnological research.

(Daniell, 1854a, p 55)

McCarthy’s Island was acquired by Great Britain in 1823 from the native kings, and a trading station called Georgetown was established there. The island is so named after Sir Charles McCarthy, a governor of Sierra Leone, who was captured and beheaded in 1824 by the Ashanti at a battle of Essamako⁸.

⁶This plant is currently designated by the FWTA as: *Synsepalum dulcificans* (Schom & Thon) Daniell. genus: *Synsepalum* (A.DC) Daniell (1852).

⁷Kankie is a sort of native bread, and pitto a sort of drink—see Daniell(1852c).

⁸Encyclopaedia Britannica (1910); 11th ed, vol 11, p 437 (Gambia).

While a considerable amount of ‘African’ mahogany was exported from the Gambia, rosewood was extensively used locally, as Daniell says:

With this mahogany was also felled another kind of wood, deemed of much less value in a mercantile point of view, and therefore seldom exported to England; yet nevertheless, held in high request by the native communities for the purpose of house and boat-building, and other colonial applications. By Europeans it was known under the name of rosewood⁹; . . .

(Daniell, 1854a, p 55)

What Daniell called rosewood he identified as

. . . the *Pterocarpus erinaceous*, Lam., or true kino tree of West Africa . . .

and a detailed account of this tree¹⁰ was published by Daniell in the *Pharmaceutical Journal* (Daniell, 1854a) which included historical notes by Daniell’s friend Mr JJ Bennett¹¹.

It seems that although the quality of the resinous gum exuded by the bark of the tree were first described by Dr Fothergill in 1757 “. . . owing to the recommendation of a Dr Oldfield, who termed it the true gum [of] Senegal . . .”, identification of the plant was somewhat later, and due to Mungo Park, as Daniell indicates in a footnote to his *Pterocarpus* article, as follows.

I am indebted to the kindness of a distinguished botanist, Mr J. J. Bennett, of the British Museum for the following history of this plant. He remarks that “the tree producing the true gum kino of commerce was unknown, until a branch in leaf, together with the fruit and gum, were transmitted to Sir Joseph Banks from Kayee on the river Gambia, in 1805, by Mungo Park, during his last fatal expedition into the interior of Africa. . . . In the Banksian herbarium at the British Museum, besides the specimens of Mungo Park, there are others of the leaves and fruit of the Mandingo ‘kano’ collected by Mr Pitman in 1850, and these are now completed by the addition of excellent specimens of the flowers.”

(Daniell, 1854a, p 56)

Of course, Bennett is indicating that it was Daniell who provided him with the ‘excellent specimens of the flowers’. Daniell continues:

I may remark *en passant*, that the specimens of the kino tree brought back from the Gambia by myself, when compared with those of Park, . . . leave but slight doubt as to their identity, and manifestly indicate that all belong to the same production.

(Daniell, 1854a, p 57)

The medical properties of the bark and gum of this tree seem to have been known for sometime. Daniell records his observations as follows:

⁹However, what we now call Rosewood would seem to be of South American origin—a Brazilian species of *Dalbergia ?papilionaceae?* (ref=??).

¹⁰See also: Encyclopaedia Britannica (1910); vol 15, (Kino).

¹¹Keeper of the Banksian herbarium at the British Museum. See also Appendix C.

... I witnessed, on several occasions, the favourable effects of the powdered gum in checking the mucous diarrhoeas, and other debilitating conditions of the intestinal canal, to which the inhabitants of these swampy localities are so subject. ... Observing that it occasionally constituted an ingredient in some of the medical compounds of the natives, I was induced to try it separately in a few cases of local remittent fever, complicated with relaxation of the bowels, as a gargle in salivation, and in other minor affectations proceeding from a general atony or depression of the system, with favourable results.

(Daniell, 1854a, p 61)

2.6 *Fillaea suaveolens*; the ordeal or Red-water tree bark

On his return to Britain (May 1854-April 1855) from Sierra Leone Daniell gave two specimens of bark of the plant *Fillaea suaveolens* to Robert Christison¹² who was a famous toxicologist. Christison acknowledges the part played by Daniell in the following extract from a paper he presented (on the Calabar bean) before the Royal Society of Edinburgh on February 5th, 1855 (Christison, 1855a)

I have not yet met with a good account of the effects of the red-water tree, or cassa tree; and they certainly have not been hitherto examined scientifically, although the subject cannot fail to repay enquiry. The red-water bark would seem ... to possess the property of causing, in various circumstances, vomiting, purging, paralysis of the limbs, and death. Judging from the quantity which he¹³ says is required for the ordeal, it cannot be a very subtle poison. But the bark presented to me by Dr W. F. Daniell, of the Army Medical Service, as the bark of *Fillaea suaveolens*, must be energetic; for when a grain or two is tasted, it causes slowly an intense numbness and tingling of the part of the tongue to which it is confined. That which I have received from him as the bark *Erythrophleum guineense* has on the contrary a purely astringent taste, without bitterness or subsequent numbness or acrimony. Its texture is also full of a red concrete resiniform matter, probably a kind of kino; which is entirely wanting in the other. Hence these barks cannot be produced by the same species; so if there be no mistake about the barks, the two plants must be different species.

(Christison, 1855a, p 194)

These two plants are now known as *Erythrophleum guineense* (G. Don), and *Erythrophleum suaveolus* (Guill. & Perr.). Their toxic properties are described in Oliver-Bever (1982).

notes

On Daniell's next leave period, Daniell donates specimens of "Ordeal or Redwater tree bark ..." to the Museum, Kew (see entry 82, p291 (approx 1854?). (see Kew Museum entry book)

¹²Robert Christison MD (1797–1882). Professor of Material Medica at Edinburgh University. He was also vice-president of the Royal Society of Edinburgh.

¹³Dr Winterbottom, in his *Account of the native Africans in the neighbourhood of Sierra Leone* (1803), p 130.

Also, see 2 contemporary pictures of specimens of the "sassy" bark tree in article On *Erythrophleum Judicale*, the sassy bark tree of Cape Palmaris *Pharmaceutical Journal*, (1859), vol 18, p 232–237 (? author = Procter?)

On March 11, 1853, Daniell is promoted (while in the Gambia) to the rank of Staff Surgeon 2nd Class, and within two months he is posted to Sierra Leone

2.7 Sierra Leone (May 1853–May 1854)

It seems that Daniell was posted to Sierra Leone straight from the Gambia without any home leave. He left the Gambia on April 12th 1853, and arrived in Sierra Leone on May 10th 1853.

2.7.1 *Phrynium daniellii*

While in Sierra Leone Daniell came across a plant he was familiar with in Old Calabar (1841), the fruit being red triangular shaped pods, termed Katemfe by Yorrubean tribes. In his paper on this plant Katemfe, or the Miraculous fruit of the Soudan (Daniell, 1854c) Daniell relates meeting this plant again.

In 1853, when in Sierra Leone, to my extreme surprise, I discovered that the same plant was cultivated in many of the gardens of the colonialists, having been introduced a few years since by an Akoo trader, from seeds imported from Yorruba, and I was informed that subsequently realised no insignificant sum from their early proceeds, since it was of recent date that (in consequence of their extensive diffusion) the capsules were retailed in the colonial markets at the moderate price of one halfpenny each.

(Daniell, 1854c, p 158)

Immediately following Daniell's article on the Katemfe plant (Daniell, 1854c), is an article by Daniell's friend JJ Bennett, giving the first botanical description of the plant (Bennett, 1854a) entitled Description of a new species of *Phrynium* from Western Africa, which includes a wonderful engraving of the plant.

This species of *Phrynium*, specimens of which have been presented to the British Museum by Dr. Daniell, to whom we are indebted for its discovery, is distinguished from all others from Western Africa, by its truly radical leaves and inflorescence, the creeping rhizome sending out no stalk, and the inflorescence being so little elevated, that, as Dr. Daniell informs me, the capsules are frequently buried beneath the surface of the ground. It has also other important marks of distinction, which are indicated in the following characters:–

PHRYNIUM DANIELLI, foliis radicalibus longè . . .

(Bennett, 1854a, p 161)

Although Bennett was keeper of the British Museum Herbarium, he wrote very few academic papers, and virtually all of them were on new plants which Daniell had collected.

Unfortunately, Bennett's *Phrynium daniellii* (Benn.) was reclassified by Bentham as *Thaumatococcus daniellii* (see FWTA ed Hepper 2nd ed) in the family MARANTACEAE. The following is the relevant extract from the FWTA.

1. THAUMATOCOCCUS Benth. in Benth. & Hook. f., Gen. Pl. 3: 652 (1883); F.T.A. 7: 320.

Leaves ovate-elliptic, rounded-truncate at the base, shortly acuminate, up to 46 cm long and 30 cm broad, papery, with very numerous parallel nerves diverging from the midrib at an angle of about 45°; petiole subterete; spikes simple or forked, about 10 cm long; bracts imbricate, 4 cm long; flowers as long as the bracts; sepals broadly linear, 1 cm long; corolla-tube very short, lobes oblong, 2.5 cm long; ovary silky; fruit 3-winged, hard, 3 cm diam. *daniellii*

T. daniellii (*Ben.*) Benth. l.e. (1883); F.T.A. 7: 321; . . . *Phrynium daniellii* Benn. (1855). . . . A herb up to 10 feet high; rhizome slender, creeping; spikes arising from the base, rough with the scars of fallen flowers, the latter pale purple; fruit crimson, at or below ground-level; seeds black, hard, shining; in large clumps in forest.

S.L : (cult.) *Daniell!* *Johnston!* *Bockstatt!* . . .

(by FN Hepper, in FWTA 2nd ed. Section MARANTACEAE (? editor = Hepper)

The plant has also been cultivated on a large scale for the sweet material it contains, as the following extract from Sofowora (1980) indicates.

Attempts to cultivate this plant on a large scale resulted from the finding that it contains a low-calorie high-intensity protein sweetener in the aril of the fruit. This protein is 5000 times as sweet as sucrose on a molar basis. The leaves, which are used in wrapping food, and the leaf stalk, which is used in making mats, are byproducts. The seed is surrounded by a carbohydrate jelly-like material which swells to several times its own volume in water and is a likely substitute for agar and household jellies. The amino acid composition of the sweetener is known. A simple industrial procedure for the extraction of the protein has been designed by Tate and Lyle Co. . . . A plantation of this is ready for replanting on a large scale for use of the sweetener in soft drinks and pharmaceuticals. The protein will have a particular use for sweetening foods and medicines for diabetic patients.

(Sofowora, 1980, p 112-113)

This article by Sofowora (1980) includes a photograph of the plant at the medicinal plant garden of the University of Ife, Ile-Ife, Nigeria.

2.8 Home leave—(May 1854 to April 1855)

Daniell left Sierra Leone on April 12, 1854, presumably taking with him quite a large collection of plants, as indicated by the following entry in the Accessions Register¹⁴ at the Department of Botany, British Museum (Natural History)

¹⁴See Appendix.

January 10, 1855.

Dr Daniell presented 10 species of plants, and 30 of fruits and seeds from Western Africa.

(Accessions Register, British Museum (Natural History). See letter from Mrs Ballance, dated 27 Jan, 1981)

During this period of leave from Sierra Leone (May 1854–April 1855) Daniell and Bennett were extremely active and presented and published many papers and articles relating to botanical specimens.

Daniell was probably elected an Honorary member of the Pharmaceutical Society soon after returning to Britain, as his next paper (Daniell, 1854a) published in August 1854 indicates that he is now an Honorary member. A ‘List of Members ...’¹⁵ at this time gives Daniell (spelled *Daniel* in this instance) as an Honorary member based in Africa, as follows.

HONORARY MEMBERS	
...	
Africa	William F. Daniel, M.D., F.G.S., F.L.S.
...	
Edinburgh	Robert Christison M.D., P.R.S.E.
...	
London	AW Hofmann PH.D
London	John Stenhouse LL.D, F.R.S.
...	
St. Domingo	Sir Robert H. Schomburgh

● **August 1854—Daniell:**

On the *Pterocarpus erinaceus*, or Kino tree of West Africa. *Pharmaceutical Journal*, 1854–5; 14, 55–61 (Daniell, 1854a)

● **September 1854—Daniell:**

On the *Habzelia aethiopica*, Ethiopian or monkey pepper. *Pharmaceutical Journal*, 1854–5; 14, 112–116. (Daniell, 1854b)

● **October 1854—Daniell:**

Katemfe, or the miraculous fruit of Soudan. *Pharmaceutical Journal*, 1854–5; 14, 158–160. (Daniell, 1854c)

● **October 1854—Bennett:**

Description of a new species of *Phrynium* from Western Africa. *Pharmaceutical Journal*, 1854–5, 14, 160–161. (Bennett, 1854a)

● **November 1854—Daniell:**

On the *Cubeba clusii* of Miquel, the black pepper of Western Africa. *Pharmaceutical Journal*, 1854–5; 14, 198–203. (Daniell, 1854d)

¹⁵List of Members, Associates, and Apprentices of the Pharmaceutical Society of Great Britain. *Pharmaceutical Journal* (1856–7); 16, 49–50.

- **November, December 1854—Bennett:**

Description of the Bungo, or Frankincense tree of Sierra Leone: regarded as a new genus of Caesalpinaeae. *Pharmaceutical Journal*, 1854–5; 14, 251–253. (Bennett, 1854b)

- **Jan, Feb, March, April, 1855—Daniell:**

On the Amoma of Western Africa. *Pharmaceutical J.*,

– 1854–5; 14, 312–318 [Jan 1855], 356–363 [Feb 1855]

– 1856–7; 16, 465–472 [March 1857], 511–517 [April 1857]

(Daniell, 1855a)

- **March, April 1855—Daniell:**

On the Frankincense-tree of Western Africa (*Daniellia thurifera*, Bennett). *Pharmaceutical Journal*, 1854–5; 14, 400–403, [March 1855]; 463 (plate) [April, 1855]. (Daniell, 1855b)

Some of the details relating to these presentations and articles will be described in turn.

2.8.1 *Daniellia thurifera*—the Frankincense tree

While in Sierra Leone, Daniell became interested in what was known as the Frankincense tree, and specimens were among those brought back to his friend Bennett at the British Museum. Bennett regarded the tree as representing a new genus of Caesalpinaceae, and named the genus after Daniell, namely *Daniellia*. On Wednesday 1st November 1854 Bennett presented his findings at a meeting of the Pharmaceutical Society, as the following note in the November issue of the *Pharmaceutical Journal* indicates.

<p>NOTICE</p> <p>—</p> <p style="text-align: right;">17, BLOOMSBURY SQUARE</p> <p>A PHARMACEUTICAL MEETING will be held on WEDNESDAY evening, the 1st of NOVEMBER, at Half-past Eight o'clock, when the following Papers will be read:—</p> <p>“On the Structure of Starch Granules.” By Mr. JAMES JOHN FIELD.</p> <p>“On the Bungo, or Frankincense Tree of Sierra Leone.”</p> <p style="text-align: right;">By J. J. BENNETT, F.R.S., &c.</p> <p>To be followed by a Discussion on the PHARMACOPŒIA.</p>
--

Bennett’s paper appeared in print in the December issue of the *Pharmaceutical Journal* (Bennett, 1854b). This discovery of a new genus was associated with some excitement, as the opening paragraph of Bennett’s article indicates.

It is singular that so remarkable a genus of plants, growing in the immediate vicinity of Sierra Leone, and furnishing so valuable a product, should have remained up to this time entirely undescribed—but I can find no trace of

it in any published work; although I entertain no doubt that a specimen (bearing leaves only, accompanied by a few flowers) collected by Afzelius, and preserved in the Banksian herbarium at the British Museum, belongs to the same genus, even if it be not (as I conceive it to be) specifically identical with Dr. Daniell's specimens. This specimen is marked "*Papilionacea gummifera*," but has certainly no claim to the former of these designations. The specimens brought home by Dr. Daniell are without flower, but are accompanied by good examples of the ripe fruit, and supply the materials for the first part of the following description:—

(Bennett, 1854b; p 251)

Daniell's own observations were presented to a meeting of the Pharmaceutical Society (February 7th, 1855) in a paper entitled On the Frankincense-tree of Western Africa *Daniellia thurifera*, Bennett. His article appeared in print in the March 1885 issue of the *Pharmaceutical Journal* (Daniell, 1855b), with a fine illustration appearing in the April 1855 issue (p 463).

This paper represents Daniell's most significant botanical contribution, and I will quote extensively from it.

The tree that furnishes the product termed African Frankincense, though of plentiful growth in the peninsula of Sierra Leone and circumjacent regions, appears hitherto to have escaped the attention of the voyagers and travellers who for so many centuries visited this part of the coast. . . .

The Frankincense tree grows to a large size, and may be distinguished without difficulty, by the erect and stately trunk and beautiful foliage. When of advanced age, its recognition is rendered still more certain by the peculiar grey or ash-like color of the bark, and massive divergent branches, which expand into a mass of foliage at an altitude of fifty or sixty feet from the ground, to a considerable around.

The mountainous districts to the westward of Freetown, and the wooded slopes in the neighbourhood of York, Lumley, and Gooderich villages, are the localities in which it principally abounds, . . .

The gum when of a natural exudation, mostly appears in a liquid state, of a white or pale straw colour, in some seasons oozing so copiously from the branches, that the ground and shrubs beneath are, from successive excretions, thickly covered with white spots. This effusion, however, does not occur so abundantly from the cortex, and when so produced, appear in thin and shallow layers, that mark their course by whitish streaks, that after their exsiccation on the trunk, present all the aspects of a saline efflorescence. The gum while in this state of fluidity cannot be collected for ordinary use. The substance offered for sale is widely different, from the effect of certain indirect agencies, tending to considerably modify both its qualities and secretion. . . .

Great uncertainty prevails with reference to the period at which this tree flowers. Several colonists remark that they have not hitherto been seen, and the majority appear to be as equally ignorant on the subject. I observed the pod, however, was in a green condition early in March, from whence we

may infer that the flowering probably commenced in December or January.

...

The incense-like fragrance peculiar to these woody-resinous excretions, renders them available for a variety of uses. Occasionally they are had recourse to for the fumigation of houses in cases of sickness, but their ordinary appliance in the Sierra Leone districts, is that of a perfume among the native females. With this in view they triturate the gum with lime manufactured from sea-shells, between two purposely adapted stones, and after their reduction into a fine powder, rub their bodies with it.

(Daniell, 1855b)

Daniell was not the first to draw attention to the tree. The following is the fine description by MS Melville in 1839 in a letter (from Sierra Leone) to James Bandinel¹⁶ of the Foreign Office (Melville, 1839).

The “Bungo,” or Frankincense tree, is an evergreen, and one of the most graceful in an African forest; it grows in great abundance in the colony and in the neighbourhood, and is generally found in rather elevated situations; its foliage is a very dark green, the leaf smooth and pointed, and not large; the trunk, which is rather smooth at first, is then curiously marked with white patches, which make the tree very remarkable at a distance. The lower stem is almost invariably perfectly straight, and at a height of 20 or 25 feet, usually branches off; the range of height of the trees I have seen may be from 40 to 60 feet; when aged the bark becomes rugged, very thick, and the white patches disappear; the flower is very simple, white and small. I do not recollect ever seeing any seed; the natives have a notion that the tree cannot be propagated except by nature (unassisted). I made some attempts, but did not succeed.

The tree (and especially the branches) is subject to the ravages of an insect, which must be of considerable size from the holes it bores in every direction being commonly about half an inch in diameter; the operations of this insect occasion the production of the “Bungo” in very considerable quantities sometimes no doubt the gum drops pure from the tree, but the chief supply is mixed up with woody particles resembling sawdust, and is forced from the holes by the insect, and gathered from the grass and ground by the natives. When fresh the gum is of a light reddish colour, translucent and very fragrant, soft and adhesive.

The native Timmanee women use the gum, powdered and mixed with palm oil, as a kind of perfume, and it is commonly sold in the market of Freetown (without any previous preparation) for this purpose.

The gum, when burnt on a red hot plate of iron, gives forth a very grateful and highly aromatic aroma; by some it is supposed to be the true “Thus.” I do not consider myself to offer any opinion in that respect. The wood makes excellent fuel; the perfume it diffuses whilst burning is extremely agreeable to most persons. I do not know that it is applied to any other purpose.

¹⁶Bandinel, James (1783–1849). Clerk in the Foreign Office; wrote a book on the slave trade in 1842 (see DNB).

(Melville, 1839)

The following is the relevant extract from the FWTA 2nd ed (Hepper, 1968).

26. DANIELLIA Benn.—F.T.A. 2: 299.

...

Sepals 1.6–2.2 cm. long, 11–17 mm. broad; pedicel and receptacle together 1.5–2 cm. long, receptacle conical; filaments 3–4.3 cm. long; leaflets 7–9 pairs, oblong or oblong-elliptic, unequal-sided at base, rather abruptly acuminate, in crown foliage 6–9 cm. long, 2.5–3.5 cm. broad, in saplings, etc., up to 19 cm. long and 6 cm. broad 3. *thurifera*

...

D. thurifera (*Benn.*) in Pharm. Journ. 14: 252 (1854); F.T.A. 2: 300, partly; ... Forest tree, to 150 ft. high.

... **S.L.:** *Afzelius! Daniell! Melville!* ...

(F.W.T.A. 2nd ed. (Hepper, 1968))

A detailed plate of the leaves, flowers and fruit is in Hooker's *Icones Plantarum*, vol. 25, Plate 2406 (Hooker, 1895). The relevant parts of the text are as follows.

Plate 2406

DANIELLA THURIFERA, *Benn.*

LEGUMINOSÆ. Tribe AMHERSTIÆ.

D. thurifera, *J. J. Bennett* in *Pharm. Journ.* xiv. (1855) 252; arbor excelsa glaberrima, ...

HAB. Sierra Leone, *Dr. Daniell, M. L. Melville*; Senegambia, *Heudelot*; Nigritania, *Barter*.

...

This is the tree affording the frankincense of Sierra Leone, called by the natives *Bungo* or *Bumbo* (or according to Mr. Bennett, *l.c.*; these are the names applied by the Leonese to the exuded fragrant resin); known also as the *Thiévi* in Senegambia. A note by Mr. Melville¹⁷ on the tree and its resin is given in 'Miscellaneous Notices' appended to vol. 25 (1839) of Lindley's¹⁸ 'Botanical Register,' and a note in MS. by the same gentleman, addressed to Sir W. J. Hooker, is preserved in the Kew Herbarium. Mr Melville speaks of the timber as reputed to be peculiarly adapted to resist 'the usual effects of damp and wet.' He says 'only the oldest and loftiest trees flower, and that on the topmost branches.' Mr. Barter describes the flowers as white, and simply states that the natives collect a gum like copal from the tree. Besides *D. oblonga*, Oliv., of Fernando Po, collected by Barter and Mann, we have imperfect material from Lagos and the Yoruba

¹⁷Melville, 1839.

¹⁸Lindley, John (1799–1865). Professor of Botany, University of London (1829–1860). Lindley's association with the Botanical Register maybe in error, since this is usually referred to as 'Edwards' Botanical Register. See DNB.

region, indicating one or two as yet undescribed allies affording the *Ogea*, *Wjea*, or *Oguja* gum-resin. Of these we hope soon to have adequate material for description.—D. OLIVER.

(Hooker, 1895)

Daniellic acid

Daniell's name has also been applied to a substance extracted from the natural resin known as African copaiba namely Daniellic acid¹⁹. This substance is a diterpene compound which was used in the art world during the latter half of the 19th century as a plasticiser or varnish to keep paint soft and supple²⁰. It seems that Daniellic acid was really ideal for this work, but that it was most probably used as a substitute for the preferred Copaiba Balsam from a South American copal²¹, particularly that from the trunk of *Copaifera lansdorfii* and other species of *Copaifera* (see Wallis, 1960).

It was originally isolated from the oleo-resin of *Daniellia oliveri* (Criqui, 1956; Haeuser *et al.*, 1961). Interestingly, this substance has since been found to be identical with the substance known illurinic acid, which was originally isolated from the same source, namely a plant resin known as African copaiba. Illurinic acid was originally isolated (Umney, 1891, 1893) from a sample of 'African copaiba Balsam', known as 'wood-oil' or 'Illorin balsam' after the Nigerian town Illorin (Mills²², 1973).

2.8.2 *Cubeba clusii*—the black pepper of Western Africa

Daniell presented his paper on *Cubeba clusii* to an evening meeting of the Pharmaceutical Society on 4th October 1854. Advance notice of this meeting was given on the inside cover of the October issue of the *Pharmaceutical Journal* as follows. The article appeared in print in the November 1854 issue (Daniell, 1854d).

NOTICE

17, BLOOMSBURY SQUARE

A PHARMACEUTICAL MEETING will be held on WEDNESDAY evening, the 4th of OCTOBER, at Half-past Eight o'clock, when the following Papers will be read:—

“On the *Cubeba Clusii*.” By Dr. DANIELL.

“On some Alkaloids, extracted from the Capsule of the English Poppy, and on a New Process for the preparation of Syrup of Poppies.” By Mr. T. B. GROVES.

Daniell tells us that he first came across the fruit in Angola in 1845.

¹⁹I am indebted to Mrs Christine Stockwell (see Stockwell, 1988) for drawing my attention to the paper by Mills (1973) which discusses these aspects of daniellic acid.

²⁰Dr Raymond White (personal communication); Scientific Department, The national Gallery, Trafalgar Square, London, WC2N-5DN

²¹Hard resins secreted by plants; much used in varnish and paint manufacture (Mabberley, 1989).

²²Mills, John S. Scientific Department, The National Gallery, Trafalgar Square, London, WC2N-5DN.

When resident in Ambriz in 1845, I noticed that no inconsiderable quantity of apparently the same fruit was bought by the slave-kabookas from the neighbourhood of M'bomma and the other inland provinces of the Kongo, and offered for sale to the Europeans factors on the coast, who however refused purchasing it, on account of the peculiar flavour.

(Daniell, 1854d; p 199)

While the detailed botanical descriptions are those of Miquel, along with some particular features supplied by Dr JD Hooker, to help distinguish between two species of *Cubeba* (*C. clusii* and *C. officianilis*), Daniell gives an excellent history and general description of this climbing plant so common throughout West Africa.

The berries are at first green, gradually acquiring a brownish tint as they enlarge, and ultimately becoming of a dusky red, or reddish-brown, when they attain their full maturity. In their dry condition the cortical portion changes from a dirty brown to a greyish black colour . . . The racemes of fruit consist of an irregular number of spherical or globose-formed seeds, in magnitude somewhat less than those of the ordinary black pepper . . . connected by small or partial stalks, about 1/6—1/3 of an inch in length, which adhering to the berry when detached from the cluster, has given origin to the early English term of *Tailed Pepper*.

(Daniell, 1854d; p 202)

Regarding the use of the pepper, Daniell says:

In some places (Sierra Leone) it is employed as a condiment to flavour their soups and other vergetable compounds, and elsewhere (Kongo) an infusion of the green fruit, leaves, or entire plant, constitute one of the component parts of those fetish potions which the Gangàs, or native doctors, attempt the cure of a manifold series of diseases.

(Daniell, 1854d; p 203)

Although Daniell correctly describes the *Cubeba clusii* as a species of pepper, there does seem to have been some confusion as to whether it was a pepper or really a species of Cubebs. Daniell states:

Smith, in Rees' *Cyclopaedia*, has confounded this pepper with the officinal Cubebs²³, in that stating that specimens of the latter had been gathered by Afzelius, and his companion Borone, in leaf and fruit, so that no further doubt could remain as to the recognition of the plant, and, guided by this authority, Nees. v. Essenbeck, Ebenmaier, Stephenson, Churchill, and other authors, have likewise committed the same error. Lindley, however, subsequently pointed out that this kind of African pepper belonged to a distinct species, to which he gave the name of *Piper Afzelii* (or Guinea Cubebs), not perhaps being aware that a similar title had previously been conferred on the *Piper grandifolium*, Afz., by Rœmer and Schultes, and therefore to avoid any confusion that might otherwise result, it becomes

²³ *Cubeba officinalis*.

necessary to retain Miquel's specific term of *Cubeba Clusii*, although of a later date.

(Daniell, 1854d; p 199)

A few months later, in the February 1855 issue of the *Pharmaceutical Journal*, a paper appeared entitled 'Chemical examination of the *Cubeba clusii* of Miquel; the black pepper of Western Africa.' by Mr John Stenhouse (Stenhouse, 1855a), in which he says:

As considerable doubt has long existed respecting the true nature of these African cubebs, most botanists regarding them as a peculiar species of cubebs, while others believe them to be a kind of pepper to which they have given the name *Piper caudatum*, or tail-pepper, I was induced to take up the subject in order to see if Chemistry could throw any light on the matter. The smell of these African cubebs is very similar to that of ordinary cubebs, but their taste approaches very closely to that of common pepper.

(Stenhouse, 1855a; p 363)

Stenhouse's analysis yielded "... four-sided prisms, precisely similar to piperine." Thus he concludes:

It appears, therefore, that whatever may be the botanical characters of African cubebs their chemical properties indicate that they are really a species of pepper, containing as they do piperine and not cubebin, the non-nitrogenous crystallizable principle of the cubeb tribe, which possesses no basic properties.

(Stenhouse, 1855a; p 364)

2.8.3 Election to the Linnean Society (February 1855)

Daniell's only recorded attendance at a Linnean Society meeting before being elected a fellow was on November 4th 1851, when he was introduced as a visitor by John Bennett—see the General Minute Book (No.7, 1850–1862).

Daniell was proposed for membership of the Linnean Society (November 21, 1854) by Robert Brown, John Bennett, and Dr Thomas Thomson, as shown on the proposal certificate. An entry in the General Minute Book (No.7, 1850–1862) of the Linnean Society for November 21st 1854 is as follows (note that Daniell's name is spelt with a single 'l').

The following gentlemen were proposed as fellows and their certificates were severally ordered to be suspended in the meeting room.

William Freeman Daniel, MD, Staff Surgeon, now residing at Brighton: recommended by R. Brown, JJ Bennett, T. Thomson.

The ballot took place on February 6th 1855, as the following Minute Book entry indicates:

William Freeman Daniell Esq., MD, and William Gourlie (Jr) Esq., who were proposed as fellows on 21st November were severally balloted for and elected.

William Freeman Daniell Esq., MD
 Staff Surgeon at present residing at 13 Broad Street, Brighton, a gentleman especially conversant with the Botany of Western Africa, being desirous of becoming a Fellow of the Linnean Society of London, we the undersigned do, of our personal knowledge, recommend him as likely to prove a useful and valuable member
 Rob^t Brown V.P.
 John J Bennett
 Thomas Thomson

Proposed—Nov. 21st 1854
 Ballot—Feb 6th 1855—elected (JJ Bennett)

The address given by Daniell on his proposal certificate was subsequently crossed out and replaced with: 2, Arabella Road, Pimlico. [London].

In the archives of the Linnean Society there is a short letter from Daniell to John Bennett as follows.

Feb 16, 1855

I hereby authorise Mr Bennett to receive on my behalf such parts of the transactions of the Linnean Society as may at any time become due to me.

W. F. Daniell MD

Staff Surgeon

Daniell is recorded in the minutes of the Linnean Society as being present at the meeting of March 20 1855 (his first since becoming a Fellow) as follows.

The following donations were received and thanks were [offered] for them, viz:

—Specimen of kino from Nyami, Upper Gambia, presented by WF Daniell Esq., MD, FLS.

...

Dr Daniell, FLS, exhibited specimens of strongly compressed vegetables, reduced into very small compass, intended for the use of voyages etc., of which large quantities have lately been transmitted to our Army in the Crimea.

2.9 Sierra Leone (April 1855—September 1856)

When Daniell returned from his next posting (Sierra Leone), his address as recorded by the Linnean Society for 1856 was: 25 Great Russell Street [London]. No other address is recorded at the Linnean Society after this.

Chapter 3

The *Aframoma* of Western Africa

dan-ch3.tex

17:58 hrs August 19, 2011

3.1 Introduction

While Daniell was in Africa, he played a significant part in helping to clarify the botany of a group of peppers which were then known as the *Melagueta*¹ peppers. He collected a large number of specimens of *Amomum* for his friends in London (Sir WJ Hooker, JD Hooker, J Pereira), and in the process he discovered a beautiful new yellow-flowered species (the yellow *Amomum*) which was named after him (*Amomum danielli*) by JD Hooker (Hooker, 1852a, 1852b).

Daniell highlights the confusion surrounding the Amoma at that time, as follows.

A constant variation or succession of synonyms attached to many vegetable products, evince decisive evidence, either that such laws are not imperatively upheld, or that a remarkable amount of inconsistency prevails amongst botanical writers. The retention of a specific designation derived from some peculiar characteristic of the fruit, by a plant that *does not* yield it, is an anomaly which ought not to be tolerated by scientific authorities, for the conservation of such irregular terms, must conduce to the perpetuation of error, and ultimately augment to a much larger extent the distrust and confusion already existing. The sooner, therefore, this absurd system of nomenclature is abolished, the less difficulty there will be in arriving at sounder conclusions, concerning the source of various medicinal imports.

(Daniell, 1855a, p 357)

¹Pereira, 1855 (vol 2, part i, p37–38) says:- The word is variously spelt Malagueta, Malaguetta, Melegueta, Mellegetta, Meligetta, &c. Several etymologies of it have been given: some say the seeds have been so called in consequence of their resemblance to Turkey millet, termed by the Italians *melica* or *melega*. Savary says the term is derived from *mala gente*, the designation applied by the Portuguese to the people of the coast yielding the seeds. Another derivation (suggested to me by Mr. R. Thomson, of the London Institution) is *Melli* (also written *Melle* and *Máli*, a kingdom of Nigritia; and *gitti* (or *gitter*), a Portuguese name for pepper. Barbot says the Portuguese word malagueta is from the native name for the pepper, *emanegéta*.

3.1.1 *Amomum danielli*

When Daniell returned from his first posting in the Gold Coast (October 1851) Hooker says he brought with him specimens of a yellow-flowered *Amomum*, as follows.

Beautiful specimens of the flowers of this plant, preserved in spirits, together with a dried leaf, and the fruit, have been presented to the Kew Museum by Dr. Daniell, with the name *A. Afzelii?* Bastard Melliguetta, attached. . . . The present [specimen] differs widely from it [*A. Afzelii*]; and I propose that it should bear the name of its zealous discoverer, to whom we feel extremely indebted for the light he has thrown upon the difficult subject of African *Amoma*.

(Hooker, 1852b; p 72)

Regarding the difficulty in distinguishing the various species of *Amoma*, Hooker is emphatic concerning the need for good and adequate specimens.

The subject of African *Amoma* is an extremely difficult one, and except good specimens of the flowers be preserved in spirits, and of the leaves and fruit dried to accompany them, and so ticketed on the spot as to preclude the possibility of any of these three parts being confounded with those of similar species. Hitherto specific characters have been too much drawn up from very insufficient specimens of the fruit only. It is very much to be desired that this difficult matter should be cleared up, and that Dr. Daniell will renew the study with his wonted zeal in the native country of the Melligettas, and will collect all the species he encounters, in various states of flower, leaf, and seed, ticket them on the spot, and remit them to England, with such valuable notes and observations as he has been in the habit of collecting.

(Hooker, 1852b; p 73)

A wonderful coloured plate of *A. danielli* subsequently appeared in February 1st issue of Curtis' Botanical Magazine (Curtis, 1854), in which they state:

We have taken infinite pains with our correspondence in Tropical Western Africa, to endeavour to procure authentic information respecting the *Amomums*, or *Melligetta Peppers*, as they are called, of that coast. . . . and we are now able to illustrate another kind, of which till lately nothing had been known but by the figure given at page 1138 of vol. ii. of the late Dr. Pereira's 'Elements of Materia Medica,' the specimen of which he received from Dr. Daniell under the name of "Bastard melligetta." That able author thought it might prove to be the *Amomum Clusii* of Sir J. E. Smith, in Rees's Cyclopædia; but, as Dr. Hooker [Hooker, 1852a] has shown, in the 'Journal of Botany,' that is a point impossible to be determined by the description given in that work, and it is *not* the fruit so named of Sir James Smith's collection at the Linnean Society.

(Curtis, 1854; Tab. 4764)

Since then, a number of apparently different plants have been shown to be in fact the same. As Pereira speculated (Hooker, 1852a, 1852b; Pereira, 1852) Daniell's plant was later found to be identical with *Amomum clusii* (Curtis, 1861), and in 1871 Daniel Hanbury presented a paper to the Linnean Society suggesting that *A. daniellii* was also identical with *A. angustifolium* (Hanbury, 1873).

The fruits which I now lay before the Society are those of *A. angustifolium*, Sonnerat, ripened in my hothouse at Clapham during the past autumn. . . . My plant was raised from seeds sent from Mauritius to the Paris Exhibition of 1867. When it flowered, in June last, I was instantly struck with its perfect resemblance to the West-African *A. danielli*, Hook. f.; and a careful comparison convinced me of the identity of the two species.

(Hanbury, 1873; p 154)

Today, however, although the species has been reclassified, Daniell's plant still carries his name *Aframomum daniellii* (FWTA, 1968).

Dan-plants.tex

Chapter 4

Plants

4.1 The Katemfe fruit

It was at this time that Daniell first came across the triangular fruit of a plant belonging to the genus *Phrynium*, which was later to be named after him (*Phrynium danielli*) by his friend John Joseph Bennett¹ in a paper which appeared in the *Pharmaceutical Journal* in October 1854 (Bennett, 1854).

Daniell describes his first meeting with this fruit as follows.

When visiting Warree and Ebo, so far back as 1839, I casually met with a number of red triangular-shaped pods in the trading canoes from Bocqua and Kakanda, which from their colour I mistook for Kola-nuts (*Sterculia acuminata*, Pal. de Beauv.), as the natives of these localities carried on a considerable traffic with them, and it was not until 1841, during my residence in Old Calabar, that I became convinced of my error, by experiencing in person their extraordinary power on the palate. ... The natives assert that this fruit is to be found growing abundantly in Bosan kingdom, a few miles up Cross river, and is conveyed from thence by the palm-oil canoes, to be vended in the larger Efic towns; they are however, not only much less in size, but of inferior quality to those from Central Africa.

(Daniell, 1854c).

A footnote in this paper (Daniell, 1854c) indicates that Daniell sent one capsule of the Central Africa variety from Calabar to England in 1841. It was deposited in the museum of Materia Medica of King's College (London) by professor E. Forbes. Note that Daniell was friendly with professor Bentley² (of Kings College, London, and the Pharmaceutical Society), and it is possible that Daniell sent the specimen to Bentley, who then gave it to Forbes. Daniell meets the Katemfe fruit again in 1853 while stationed in Sierra Leone (see Daniell, 1854c).

¹JJ Bennett FRS, was secretary of the Linnean Society (London), and Keeper of the Banksian herbarium and library since its transfer to the British Museum in 1827. See Carruthers (1876).

²See Daniell's letter from Jamaica to Bentley.

Appendix A

Letters

[/allfiles/daniell/book/dan-letters.tex] 17:58 hrs August 19, 2011

Although some of Daniell's letters have been given in the text, they are all collected here mainly for convenience.

A.1 Hooker, WJ

A.1.1 Daniell WF to Hooker WJ; July 17th 1845

Kew Archives; Director's Correspondence; African Letters; vol 59, 1844–1858, letter No. 91.

7 Trinity Street,
Trinity Square,
July 17, 1845
[Newington, London]

My dear Sir,

I have just received your kind invitation for Saturday next, but I regret that prior engagements with Sir W Burnett¹ and the Admiralty prevent me from having the pleasure of visiting you. Two or three officers who are on the eve of visiting Africa feel extremely anxious to see me, so that in fact the whole of the day would be fully occupied. Would either Monday or Tuesday suit your convenience (I leave town on Wednesday) if so, I will wait upon you early in the morning as I feel anxious to see the Niger expedition collection. Perhaps you will have the kindness to drop me a line.

I remain
my dear Sir
yours sc
WF Daniell

(Daniell, 1845c)

¹Sir William Burnett, 1779–1861. Physician-general of the navy (see DNB).

A.2 Hooker, JD

A.3 Darwin, CR

These letters are freely available from the *Darwin project* website (<http://www.darwinproject.ac.uk/darwinletters/>). They were found using the search facility (keyword *daniell*).

Another very useful resource for Darwin studies is the *Darwin-online* website at <http://darwin-online.org.uk/>

A.3.1 Daniell WF to Darwin CR, 8 Oct – 7 Nov 1856

Darwin project: letter No. 1970 (Darwin correspondence, p 241)

Marine View, Ventnor
Isle of Wight
October 8th, 1856

My dear Sir

I have just received your letter² and am much pleased that any cursory observation of mine may prove of utility to you, and as I am now just out of bed after a weeks *very* severe sickness, I think there is no better opportunity than the present when the mind is purified by this physical tornado. Any observations contained in my letters are always at your service for publication if you think them sufficiently worthy³. The pigeons although procured from different houses evidently belong to the same breed, in fact the only domesticated one in Sierra Leone⁴. With regard to the wild fowls I am of your opinion that they originally came from a domesticated breed, and were set free by the ravages of civil commotions in the neighbour where they abound⁵. It is a country which has always been famous for intestinal wars, and even now is a kind of “*debateable land*” I think it may therefore be assumed with some confidence that their descent may be claimed from the African domestic fowl.

1st With regard to your first qⁿ whether any tendency to temporary infertility or sterility exists in any European Animal &c With regard to dogs there is no difference in West Africa as in England⁶. They breed almost immediately, cats ditto, with regard to fowls it is very doubtful: I have no data to give[.]

European women also become frequently pregnant in S. Leo on the whole I should think there might be a temporary infertility but only for a brief period, or until the animals were fully acclimated—

2. With regard to your 2nd qⁿ whether differences in constitution with reference to light or dark complexions in the European resisting the influences of an African climate, I am distinctly of opinion based on the results of a vast experience in human suffering, that a sanguineous or choleric, or

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⁴3
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⁶5

light complexioned man stands the African climate *twice* as well and *as long again* as the melancholic or dark complexioned man—I am of a light complexion myself, and have suffered from yellow bilic remittent fevers, dysentery, ulcers &c and in fact most of the tropical diseases to which Europeans are subject and yet am still alive—I will give you an anecdote which will prove at least that your q^v has been solved some 18 years ago by an African potentate. When I was a boy, I went with a party to visit the King of Warré, who resided on an island situated on a communicating stream between the rivers Rio Formosa and Niger in the Bight of Benin. The King after alluding among other topics to the mortality that occurred so frequently among his European friends who resided at the mouth of the former river, and particularly to some recent deaths that had taken place turned round and looked me fully in the face, at the same time enquiring what age I was. “Ah! said his sable majesty! it is the right age to bring white men to Africa, the younger the better, and he is a true child of the sun, his fire (light) hair will save him from many bad diseases; he and others like him, *will live*”!!

London. Oct 20th The physiological explanation of the sanguineous or choleric temperament enjoying better health than the melancholic, may be chiefly attributed to the greater vascular organization of the skin of the former, by which from perspiration being more easily excited, they are enabled to throw off the febrile paroxysms, and relieve the congested states of the internal organs. It is true, they suffer severely while the disease exists, but they throw it off much sooner than the melancholic temperament. In the latter, disease is much slower in its progress, the cutaneous surface is more difficult to act upon, and the patient suffers greatly from despondency and permanent debility. I do not know whether you can understand me sufficiently, but I perhaps could explain my self better verbally. I may observe that I have always had less difficulty in curing light than dark complexioned men⁷.

The only notices you can find of the Mammalia of the Isles of Anno Bon Principe and St Thomas, will be in some Portuguese works published on the subject⁸, a general view of the animals (most of which have been imported from the main-land, and blended with European species) will be found in Barbot Astleys or Churchills collection of voyages—⁹ I have been to all these islands, and see no difference in the live stock from the main land. The voyagers (D. J. Santarem and Don Juan Escobar) were the first Portuguese that discovered and visited the island of Princes’ &c I published a work some years since with the information relative to the earlier Portuguese voyagers, but it is unfortunately out of print or you should have had a copy with pleasure¹⁰. I will however look out the information you require.

With regard to the soundings between Fernando Po, and the mainland, they vary from 24 to 36 or 40 fathoms, clayey mud, black or dark green, nearer the lowlands or alluvial flats— The soundings between Anno Bon and the continent are so deep that they have not been recorded. The water is blue

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¹⁰9

[having] frequently passed down in that direction in sailing vessels.

Nov. 7. I hope you will excuse this imperfect account, the greater part of which has been written while labouring under sickness—¹¹ With the exception of a slight enlargement of the spleen¹², I am now quite recovered, and have my usual John Bull looks— Trusting to have the pleasure of seeing you in town soon

I remain

Yours ever sincerely

W. F. Daniell

Footnotes

[1] This letter has not been located, but it was presumably written after CD received the pigeons and fowls Daniell sent from Sierra Leone (see n. 2, below).

[2] CD received live fowls and pigeons sent by Daniell from Sierra Leone (*Natural selection* p. 80). Information from this letter was repeated in *Variation 2*: 161.

[4] This information was cited by CD in *Natural selection*, p. 80, and in *Variation 2*: 161.

[5] Daniell's information was used by CD in *Descent 1*: 244–245.

[6] John Barbot's description of his travels in western Africa was published in several collections of voyages. Barbot 1732 is volume 5 of the collection published by Awnsham Churchill. Astley 1745–7 extensively cites Barbot's work and that of his brother James Barbot, who travelled in the same region.

[7] Daniell 1849.

[8] This abstract is preserved with the letter in DAR 205.2 (Letters). CD marked it '18' in brown crayon, the number of his portfolio of notes on the means of dispersal of plants and animals.

A.3.2 Daniell WF to Darwin CR, 14 Nov 1858

Darwin project: letter No. 1988

25. Great Russel Street
Bloomsbury.
Nov. 14 1856.

My dear Sir

I have just received your letter and regret I did not give you my town address however, my general Agents, *McGregors 17 Charles St., St James Square*, will always give it you when I am either in England or abroad¹³.

I write this letter, without any delay, as I think I can afford you some information about the *mamalia*, of St Thomas, & Princes— I have also to state the pleasing news, that I have received a letter from Africa, from H.M.S. Scourge¹⁴, stating that M^r Gabriel of the mixed commiss. on

¹¹ 10

¹² 11

¹³ 1

¹⁴ 2

coast¹⁵, is making an extensive collection of fowls &c for you— I suppose ere this, you will have received information of this collection¹⁶.

In looking over some old notes, extracted from a Portuguese history of these islands, I find that numerous monkeys & civet cats (the same probably as those of Fernando Po and the main land)—belong to these localities. The following are the precise words in Portuguese— “*A unica especie do genero Mamalia, que se achou nestas Ilhas ao tempo do descobrimento eram macacos de diferentes castas, e muitos ratos assas daninhos. Os Portuguezes alli introduziram logo gado, vaccum, lanigero cabrum, e cavallar, o qual propagou sufficientemente, e mais que tudo as cabras*” — “*Varias viverras se acoutam tambem nessas matas entre ellas uma especie de gato dalgalia ou viverra civetta. Lagartos, lagartixas sapos acham-se por toda a parte, e dos amphibios a rãa, e o cãgado—e nas praias destas Ilhas sahem muitas tartarugas, de que a casca se aproveita para o commercio por ser da melhor qualidade*”—¹⁷.

I hope this long quotation may afford you a slight insight I will however keep you memo in my sight. It is most difficult to gain any information on these subjects. Fernando was inhabited by a black race of men, supposed originally to have passed over from [Camarõens]¹⁸ river, as there are several words in both languages the same— It is not unlikely I may go abroad again early in next year, and if I can give you any information or make enquiries into any particular subject for you, I will do all I can in these respects.

I remain my dear Sir

ever yours sincerely

W.F. Daniell

The island of St. Thomas’ was discovered in 1470 on Dec 21 by Joã de Santarem and Pedro de Escobar. It was colonised in September 1485

Navegação de Lisboa a Ilha de St Thomes e Principe por um Piloto Portuguese about 1500— published

Footnotes

[1] CD’s letter, probably written after he had received the letter from W.F. Daniell, 8 October–7 November 1856, has not been found. Charles Roderic and Walter McGrigor were army agents at 17 Charles Street, St James’s Square (*Post Office London directory* 1857).

[2] HMS *Scourge* was serving off the west coast of Africa in 1856 (*Navy list* 1856).

[3] Edmund Gabriel was an anti-slave-trade commissioner in Luanda, Angola. See also *Correspondence* vol. 5, CD memorandum, [December 1855].

[4] See letters to W.B. Tegetmeier, 19 November [1856] and 29 November [1856].

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[5] ‘The only mammalian species found on these islands when they were discovered were monkeys of various types and many rather noxious rats. The Portuguese immediately introduced there herds of cattle, wool-bearing goats, and horses, which multiplied adequately, especially the goats’ — ‘Various *Viverra* also find shelter in the forests there, among them a type of civet-cat or *Viverra civetta*. Large and small lizards and toads are found everywhere, and of the amphibians the frog and the fresh-water turtle and on the shores of these islands appear sea turtles whose shells are of use commercially, being of the best quality’. The editors thank Mario di Gregorio for this translation.

[6] Presumably the Cameroons estuary, originally named in Portuguese ‘Rio dos Camarões’.

[7] The number of CD’s portfolio of notes on the geographical distribution of animals.

[8] CD had enquired about the mammals on the islands of Principe and São Tomé, some 200 miles off the coast of Gabon in the Gulf of Guinea, and about the depth of the sea separating the islands from the mainland (see letter from W.F. Daniell, 8 October–7 November 1856). The statistical work referred to is Lopes de Lima 1844–62. The ability of monkeys, reptiles, and frogs, for example, to cross open seas (see n. 5, above) was difficult to explain by natural means. See also letter to J.D. Hooker, 15 November [1856].

A.3.3 Darwin CR to Hooker JD, 26 April 1858

Darwin project: letter No. 2263

Moor Park,
Farnham
Surrey
26th [April 1858]

My dear Hooker

As I confess I thought you a *little* uncharitable about D^r Daniel, I feel bound in honour to send you the enclosed. As it may be confidential, it sh^d not be mentioned.—It is an astounding revelation to me¹⁹. Return it here or to Down at your leisure.—

I have just had the innermost cockles of my heart rejoiced by a letter from Lyell. I said to him (or he to me) that I believed from character of Flora of Azores, that icebergs must have been stranded there; & that I expected erratic boulders be detected embedded between the upheaved lava-beds: & I got Lyell to write to Hartung to ask, & now H. says my question explains what had astounded him viz large boulders (& some polished) of Micaschist, quartz, sandstone &c some embedded & some 40 & 50 ft above

¹⁹The enclosure has not been found. William Freeman Daniell had arranged to have West African domestic animal skins sent to CD. On his return to England from Sierra Leone late in 1856, Daniell had asked CD whether he would support an application to the Royal Society for a grant to collect natural history specimens in Africa. At the time, Hooker had expressed doubts about Daniell’s capabilities and CD declined to support the application. See *Correspondence* vol. 6, letters to J.D. Hooker, 17 January [1857] and 20 January [1857].

level of sea, so that he had inferred that they had not been brought as ballast.
Is this not beautiful?

The Water-cure has done me some good, but I am nothing to boast of today
so goodbye.

My dear friend

Yours

C.D.

Appendix B

Statement of Service

August 19, 2011 /aHOUSE/daniell/book/danapp-a.tex/

This is a copy of Daniell's army record which is known officially as the Statement of Service (RAMC, 1865). It details both his postings and rank, and is held at the Headquarters of the Royal Army Medical Corps, Millbank, London.

Table B.1: Daniell's Army Postings record from the *Statements of Services* held at RAMC, Millbank, London.

Born at Salford
19 November 1819
[Lee] ¹³⁵⁹⁸

	Succession of Station	From	To
	At Home	26 Nov 1847	9 Jan 1848
arr. 1/2/48	Gambia	10 Jan 1848	21 May 1849
left G 30/3/49	At Home	22 May 1849	11 Feb 1850
arr. 5/4/50	Gold Coast [Fort Christiansberg]	12 Feb 1850	13 Oct 1851
left GC 6/6/51	At Home	14 Oct 1851	23 Sept 1852
arr. 8/10/52	Gambia [McCarthy's Island]	24 Sept 1852	30 April 1853
arr. 10/5/53	Sierra Leone	1 May 1853	3 May 1854
left SL 12/4/54	Home	4 May 1854	23 April 1855
arr. 12/5/55	Sierra Leone	24 April 1855	4 Sept 1856
left SL 13/8/56	Home	5 Sept 1856	1 March 1857
arr. 21/3/57	Jamaica (St Jago de la Vega)	2 March 1857	3 June 1857
arr. 9/8/57	Bahamas (Nassau)	4 June 1857	3 July 1858
left B 15/5/58	Home	4 July 1858	3 Dec 1859
arr. 3/1/60	China	4 Dec 1859	2 April 1861
	Home (Templemore)	3 April 1861	1 Dec 1862
arr. 21/12/62	Jamaica (Kingston)	2 Dec 1862	12 Aug 1864
	Home	13 Aug 1864	26 June 1865

Died 26 June 1865

Table B.2: Daniell's Rank and Pay register from the *Statements of Services* held at RAMC, Millbank, London. It shows that he spent some time with the 1st West-India Regiment, and later joined the 31st Foot Regiment in China.

William Freeman Daniell MD
 Return No. 1495
 Died at Southampton on 26 June 1865 [Lee] $\frac{20179}{2}$.

Succession of Rank	From	To	Full Pay
Assistant Surgeon Staff for Africa	26 Nov 1847	10 March 1853	5y 3m 13d
Staff Surgeon 2 ^o Class	11 March 1853	1 Dec 1856	3y 8m 24d
Surgeon 1 st W. I. Reg ^t .	5 Dec 1856	2 Nov 1857	— 10m 29d
do. Staff 2 ^o Class	3 Nov 1857	22 Nov 1860	3y 0m 20d
do. 31 st Foot	23 Nov 1860	3 June 1861	— 6m 12d
Staff Surgeon	4 June 1861	26 June 1865	4y 0m 23d
			17y 7m 1d

Died 26 June 1865

Appendix C

Application form for joining the Medical Department of the Army (22nd October 1847)

August 19, 2011 /aHOUSE/daniell/book/danapp-b.tex/

This document is Daniell's application form to join the Medical Department of the Army. It is copied from the original which is kept at the Public Records Office, Kew, London (see Document WO(25)3923; 163736; *Qualifications of Candidates for Commission in the Medical Department of the Army*, No. 143) (PRO 1847). Daniell's application form is dated 22nd October 1847 in Daniell's handwriting.

The date of printing of the official application form used by the Army Medical Department (located at the end of the notes) is *February 1840*.

Note that Daniell gives his age as 28 years in the first line, and as not exceeding 28 years in the second paragraph. This is in keeping with the observation that Daniell wrongly thought his date of birth was 19th November 1819 (see Appendix 1), which would make him think he was only 27 years old on 22nd October 1847.

Written in the margin is the following statement.

Coast of Africa Appointed S. A S — 26 Nov 1847 ¹

The following biographical notes relate to the various teachers, surgeons and physicians indicated by Daniell on his application form as being involved in his training.

- Thomas Brownbill. Surgeon with extensive practice, and also worked at the Salford Dispensary (see Slugg, 1881; see also letter from Pharm Soc, 12 Aug 1991).
- Joseph Jordan (1787–1873). (see Shepherd, 1981).
- Thomas Turner (1793–1873). see Shepherd (1981) and DNB.
- GJ Guthrie. Vice President of the Royal College of Surgeons. Professor of anatomy and surgery. Army surgeon at Westminster Eye Hospital, London. (see DNB).

¹The initials SAS stand for the rank of Staff Assistant Surgeon.

- Anthony White (1782–1849). Surgeon at the Westminster Hospital, London (see DNB).
- Samuel Argent Bardsley. Physician to Manchester Infirmary 1790–1823. (see DNB).
- Sir James Lomax Bardsley (1801–1876). Physician to Manchester Infirmary 1823–1843.
- Dr Thomas Radford (1793–1881). Appointed Obstetrician to Manchester and Salford Lying-in Hospital in 1818. MD from Heidelberg 1839. (see DNB).
- Mr John Just (1797–1852). Botanical lecturer at Pine Street (Manchester) School of Medicine 1834–1852. (see DNB).

I *William Freeman Daniell* *twenty eight* Years of Age, a Candidate for Employment in the Medical Department of the Army, do hereby attest my readiness to engage for general Service, whether at Home or Abroad, and to proceed on Duty immediately on being Gazetted.

I declare my Age not to exceed *Twenty-eight*² Years, that I am unmarried, and that I labour under no Mental nor Constitutional Disease, nor Physical Disability, that can interfere with the most efficient discharge of the Duties of a Medical Officer in any Climate.

(Signature) *William Freeman Daniell*

I have pursued the undermentioned Course of Study, of which I am ready to produce the Vouchers for Registry, and also a Certificate of my Age; namely—

I possess Certificates of regular Attendance at the undermentioned Hospitals and Course of Lectures for the number of Months stated:—

The Royal Salford Hospital or Infirmary for eighteen Months

The Westminster Hospital for twelve Months

The _____ Hospital for Diseases of the Eye for _____ Months

The _____ Lying-in-Hospital for _____ Months

²The form actually has *Twenty-Six* here, but Daniell has crossed out the six and written in *eight*.

LECTURES	PROFESSOR'S NAME	PLACE	PERIOD IN MONTHS
Anatomy & Physiology, by <i>(stating the number of Lectures of each Course on separate days)</i>	<i>Thos. Turner</i>	<i>Manchester</i>	<i>24</i>
Practical Anatomy, by <i>(stating the number of Subjects dissected) about sixteen</i>	<i>E. Stephens MD. Wm [Stott] and E.E. [Baron] FRCS.</i>	<i>Manchester London</i>	<i>18</i>
Surgery, by	<i>J.A. Ransome, J. Jordan and E. [Hilcher]</i>	<i>Manchester London</i>	<i>24</i>
Clinical Surgery, by	<i>G. Guthrie. [lynn]. A. White</i>	<i>Westminster</i>	<i>12</i>
Military Surgery, by	<i>included in the Surgical Practice.</i>		
Institutes of Medicines, by			
Practice of Medicine, or General Pathology, by	<i>Dr. J.A. Bardsley</i>	<i>Manchester</i>	<i>18</i>
Clinical Lectures on the Practice of Physic, by	<i>Dr. Hardy</i>	<i>Salford</i>	<i>18</i>

LECTURES	PROFESSOR'S NAME	PLACE	PERIOD IN MONTHS
Midwifery, by	<i>Dr. Radford. J.E. [Partnyt] [?]</i>	<i>Manchester</i>	<i>12</i>
Chemistry, by	<i>J. [Davies]. J.A. Ransome</i>	<i>do</i>	<i>12</i>
Practical Chemistry, by	<i>J.A. Ransome</i>	<i>do</i>	<i>12</i>
Botany, by	<i>Mr [Just]</i>	<i>Manchester</i>	<i>4</i>
Materia Medica, by	<i>Dr. Bardsley</i>	<i>Manchester</i>	<i>18</i>
Practical Pharmacy, by or an Apprenticeship	<i>App. to Thos. Brownbill</i>	<i>Salford</i>	<i>5 yrs</i>
Forensic Medicine, by	<i>J. [Othea] (dead) [?]</i>		
Morbid Anatomy and Pathology, by	<i>T. Turner included under general anatomy</i>		<i>24</i>
Natural History, by			
Natural Philosophy, by			
Moral Philosophy, by			
Mathematics, by			
Comparative Anatomy, by	<i>Thos. Turner</i>	<i>Manchester</i>	<i>12</i>

I have the Degree of A.M. or A.B. from the

I have the Degree of M.D. from the

I have a Diploma for Surgery from the *Royal College of Surgeons of London*
Dated November 5th 1841

(Signature) *William Freeman Daniell*

(Date) *October 22nd 1847.*

(Place of Residence) *21 Brunswick Street,
Trinity Square, Southwark.*

Regulations

1st.— In selecting from among the Candidates for the Medical Department of the Army, a preference is given to those who can fill up all the blanks in the preceding pages, by having the Acquirements there stated; but the Name of no Gentleman can be placed on the List who does not possess the Diploma of either of the Collages of Surgeons of London, Edinburgh, or Dublin, and who cannot produce the following Testimonials:—

18	Months	attendance at an Hospital of celebrity, where the average number of In-Patients is not less than 100.
24	”	Anatomy.
12	”	Practical Anatomy.
12	”	Surgery, or (what is preferred) 6 Months Surgery, and 6 Months Military Surgery.
8	”	Clinical Surgery, a complete Course of 2 or 3 Lectures during the week.
12	”	Practice of Physic, or 6 Months Practice of Physic, and 6 of General Pathology.
8	”	Clinical Lectures on ditto, the same as required in Surgery.
12	”	Chemistry.
6	”	Practical Chemistry.
3	”	Botany.
4	”	Materia Medica.
3	”	Practical Pharmacy or Apprenticeship.
5	”	Natural History.
5	”	Midwifery.
5	”	Natural Philosophy.

2nd.— The Candidates must be unmarried, not beyond 26 Years of age, nor under 21 Years.

3rd.— Candidates who have had a University Education, and have the degree of A.B. or A.M. as well as that of M.D. will be preferred, but a liberal Education, and a competent knowledge of the Greek and Latin languages are indispensably requisite in every Candidate.

4th.— The greater the attainments of the Candidates in various branches of Science, in addition to competent Professional Knowledge, the more eligible will they subsequently be deemed for Promotion in the Service; for Selections to fill Vacancies will be guided more by reference to such Acquirements than to mere Seniority.

5th.— The Rank of Physician to the Forces, or Assistant Inspector of Hospitals, requires in addition to the knowledge and experience to be gained in the regular progress of Study and Experience in the Service, that the Individual should be a Fellow or Licentiate of the Royal College of Physicians of London, or a Graduate of the University of Oxford, Cambridge, Edinburgh, Dublin, Glasgow, Aberdeen, or of the Faculty of Medicine of Glasgow.³

6th.— Although the British Schools are specified, it is to be understood that Candidates who have received regular Education in approved Foreign Universities or Schools will be admitted to Examination.

³There is a handwritten note here after Aberdeen, namely *London*, indicating that London University is also an appropriate University.

7th.— With the exception of Practice of Physic and Clinical Medicine by one Teacher, Candidates must have attended separate Lecturers for each branch of Science.

8th.— Before Promotion from the rank of Assistant-Surgeon to any higher rank, every Gentleman must be prepared for such other Examination as may be ordered before a Board of Medical Officers.

9th.— Diplomas, Tickets of Attendance on Lectures and Certificates of regular Attendance by each Professor or Lecturer, must be lodged at this Office for Examination and Registry at least one Week before the Candidate appears for Examination, and likewise Certificates of moral conduct and character, one of them by a Clergyman, and that of the Parochial Minister is desirable. Baptismal Certificates are required at the same time; if the Parish Register cannot be resorted to, an Affidavit from one of the Parents, or some Person who can attest the fact will be accepted.

10th.— The Certificate of the Teacher of Practical Anatomy must state the Number of subjects or parts dissected by the Pupil.

11th.— Certificates of Lectures and Attendance must be from Physicians or Surgeons of the recognised Colleges of Physicians and Surgeons in the United Kingdom, or of Foreign Universities.

Note.— All Communications to be forwarded “Unsealed” under Cover, to “The Right Honourable The Secretary at War,” with the words “Army Medical Department” at the corner.—*This half sheet is not to be torn off.*

Army Medical Department, February 1840.

Appendix D

Glossary of names, places and events

August 19, 2011 /aHOUSE/daniell/book/danapp-b.tex/

- Bandinel, James (1783–1849). Clerk in the Foreign Office; wrote a book on the slave trade in 1842 (see DNB).
- Barbot (?). referenced by Pereira (1855) in a footnote to melegueta (see my section on Aframomum).
- Bennett JJ (?). Keeper of the Banksian herbarium at the British Museum. Good friend of Daniell, and wrote some articles relating to specimens collected by Daniell. He also wrote some additional historical and botanical notes in some of Daniell's articles (see Daniell, 1854a). [DNB] [See also Bennett's entry in Stafleu FA and Cowan RS (1976), p 172. copy]
- Brooke, Charles (1804–1879). Surgeon at St Bartholomew's Hospital, London. FRCS 1844; FRS 1847. Signed Daniell's Royal Geographical Society application form.[DNB]
- Christison, Robert MD (1797–1882). Professor of Material Medica at Edinburgh University. He was also vice-president of the Royal Society of Edinburgh.
- Cooley, William Desborough (–1883). A well-known writer and 'expert' on African geography. He also founded (and was the first Secretary) of the Hakluyt Society in 1846. Cooley was the proposer on Daniell's application form for joining the Royal Geographical Society. [DNB]
- Edwards, Sydenham Teak (?1769–1819). A natural historical draughtsman. Founder of the *Botanical Magazine*, and started the *Botanical Register*. [DNB] [see Melville, 1939]
- Findlay, Alexander George (1812–1875). African explorer. Was on the Franklin African expedition of 1875. Signed Daniell's Royal Geographical Society application form. [DNB]

- Hodgkin, Thomas (1798–1866). Physician. Curator and pathologist at Guy’s Hospital, London. Signed Daniell’s Royal Geographical Society application form. [DNB]. (see also obituary in: Roy Geog Soc J, 1866, vol 36, p cxlvii).
- Hogg, John (1800–1869). Published *Catalogue of Sicilian Plants* (1842). Signed Daniell’s Royal Geographical Society application form. [DNB]
- Hooker, Joseph Dalton (1817–1911). Son of the famous botanist Sir WJ Hooker. In 1855 he was appointed assistant director of Kew Gardens, and in 1865 he succeeded his father as full director. [Encyclo Britannica, 11th ed, vol 13, p 671]
- Hooker, William J (??). Founder of the Royal Botanic Gardens, Kew. His son, JD Hooker eventually succeeded him as director in 1865.
- King, Richard (1811–1876). Surgeon at Guy’s Hospital, London. Surgeon and naturalist on an expedition led by ? Sir William Burnett to the great Fish river (1832–). Was founder of the Ethnological Society in 1842. [DNB]
- Lindley, John (1799–1865). Professor of Botany, University of London (1829–1860). Lindley’s association with the Botanical Register by Daniel Oliver (see *Daniella thurifera*) maybe in error, since this work is usually referred to as ‘Edwards’ Botanical Register. See DNB.
- McWilliam, James Ormiston (1808–1862). Surgeon in the navy, and medical officer to the Niger expedition (1841). He was on the ship *Albert*, and published his *Medical History of the Niger Expedition* in 1843. Dr Pritchett apparently co-authored the medical history. [DNB]
- Niger Expedition
- Pereira, Jonathan (1804–1853). MD Erlangen (1840). Wrote book on pharmacognosy called *Elements of Materia Medica and Therapeutics* (Longman, Brown, Green, and Longman; London) (see 4th ed, 2 vols, 1855; Eds. Taylor ES and Rees GO). Included drawings of specimens from Daniell on the Amomum, as well as a description of *Amomum danielli* (see 3rd and 4th eds). Pereira also wrote a short note at the end of article on Amomum by JD Hooker (Hooker, 1852b). [** for info on the ‘Elements’ see my Coll Work book] [** for the full dates of the various editions, see my BOOK p 41b/29t] [See DNB for full info]
- Renouard, George Cecil (1780–1867). Professor of Arabic at Cambridge University (1815–1821); rector of Swanscombe parish (1818–1867). Signed Daniell’s Royal Geographical Society application form. [DNB]
- Savary (??) referenced by Pereira (1855) in a footnote to melegueta (see my section on Aframomum).
- Willis, Robert (1799–1878). A medical doctor, who was Librarian to the Royal College of Surgeons, London. [DNB]
- Winterbottom. A doctor in Sierra Leone. Wrote a book *Account of the native Africans in the neighbourhood of Sierra Leone* (1803), which includes description of use of the red-water tree bark for ordeals (mentioned in Christison, 1855a, p 194).

Appendix E

Daniell's specimens in the British Museum (Natural History)

August 19, 2011 /aHOUSE/daniell/book/dan-a-bm.tex/

E.1 Entries in the Accessions Register

There are two entries relating to WF Daniell. These entries were first drawn to my attention by Mrs Balance (Librarian, British Museum herbarium) in her letter dated 27 January, 1981. These entries were confirmed during my visit to the library and herbarium on July 10th, 1984 (see the entries in my Daniell note book A, p 3).

I am grateful for the help of Dr AO Chater (Botanist, British Museum) for allowing me access to the herbarium and library for my research (July 10 & 13, 1984).

16 October 1847

Daniell presented 13 species of plants from the River Congo.

10 January 1855

Daniell presented 10 species of plants, and 30 of fruits and seeds from Western Africa.

[It would seem that this collection of specimens from Sierra Leone, contained a collection of *Aframomum* (not *A. daniellii*); specimens of *Thaumatococcus* (*Phrynium*) *daniellii*; specimens of *Daniellia thurifera* (Frankincense tree); and *Xylopiya aethiopica*]

E.2 Specimens in the Herbarium

Appendix F

Last Will and Testament

`/allfiles/daniell/book/dan-will.tex` 17:58 hrs August 19, 2011

Daniell died at Southampton on 26 June, 1865, and was buried at Kensal Green cemetery (London), on 3 July 1865. His Will was ‘proved’ at probate on 20 September 1865 (under £1500).

1 THIS IS THE LAST WILL AND TESTAMENT OF
2 William Freeman Daniell, Staff Surgeon formerly resident
3 at Bloomsbury Street in the County of Middlesex but now residing at
4 7, Prospect Place in the [-] and vicinity of the town of Southampton [-]
5 this twenty-fourth day of June one thousand eight hundred and sixty five
6 in [-] and [-] following that is to say [—]
7 wanted to pay all my just debts and [funeral] and [—] in
8 and [-] this is to [-] bequeath all [-] this [-] and [-] it
9 estate whatsoever and withsoever and [-] possession [-] its
10 [-] or opportunity [-] which [-] of all [-] at this time of my [-]
11 unto and to this use of my two friends Thomas Hodgkin Esquire MD and of
12 [-] 35 [-] in the county of [Middlesex] and Robert McCormick
13 Esquire MD [-] now residing at [-]
14 Wimbledon [—] executors administrators [-]
15 [-] trust [—] my Will instate and [-] in my [-]
16 when and as they or the survivors of them or the then trustees or trustee
17 for the time being of this my Will shall in their or his discretion deem it
18 most advantageous so to do with power to make any [special] or other [-]
19 judicious of [-] as to the title or the [-] of title [-] or otherwise and with
20 power to [-] in the [-] at any public auction or to [-]
21 or gratuitously any [-] for sale and to with the [-] without being
22 [responsible] for any loss and in the meantime with [-] [personal] state
23 and the [-] and [-] procure thereof [-] shall be [-]
24 subject to the trusts and [-] hereinafter [-] this
25 [—]
26 shall be [-] in equity [-] of my [-] for
27 the purposes of such trusts and previous and upon further trust to the
28 [—]

29 [-] in as aforesaid in the names of name of the said trustees or trustee
30 in or upon any of the public [-]
31 [-] or [-] mortgage of [-] status in England [-]
32 but not in [-] with liberty to vary and [-] all or
33 any of the investments so to be made from time to time at the discretion of the
34 said trustees or trustee for any other description of [investment] [routine] [-]
35 by this trust. And as to the [-] to arise as aforesaid and the [-]
36 and [-] this same shall be which [—]
37 and [-] are hereinafter [-] my said trust fund [-] in trust to
38 [-] the annual interest [-] unto my daughter Evelyn Lucy Daniell during
39 for the term of her natural life into her own hands for her sole and separate
40 use and benefit independently of any husband she may at any time marry
41 as and when this same shall [-] and not by way of [anticipation]
42 and for which said annual interest [-] alone shall be discharged
43 to the said trustees or trustee provided always that if my said daughter
44 shall assign or change or agree to assign or change the said annual
45 interest or any portion thereof by way of anticipation either for the
46 whole period of her life or for any part thereof or for any other act whereby
47 such annual interest or any portion thereof would but for this [-] in the
48 provision [-] vested in some other person or persons [-] and in
49 [-] such case my trustees or trustee shall henceforth for the
50 remainder of her life apply such annual interest in such manner as [-]
51 [-] shall think fit for the benefit of all or or any [-]
52 [the other or others of them] my said daughter and such other person or
53 persons as would under this my Will be for the time being [-]
54 thereto in case she [-] and after the determination of the [-]
55 trust as to the principal of my said trust fund and the interest of the same
56 afterwards accruing in trust for the child if [-] of my said daughter
57 or for her children if more than one in equal shares so that the interest of
58 a son or sons shall be [absolutely] vested at the age of twenty-one years
59 and of a daughter or daughters at that age or [-] which shall first
60 happen and so that the share or shares as [well] as [-] of a son
61 or sons dying under the age of twenty-one [-] and of a daughter or
62 or daughters dying under that age without having been married shall [-]
63 to the other or others of his [-] and if more than one are in equal
64 shares and be vested as aforesaid [-] [and but if no] [object] of the [-] trust
65 shall acquire an absolutely vested interest [-] empower my said daughter
66 notwithstanding [-] by deed or Will to appoint thee whole or any
67 part of my said trust fund and the annual interest thereof but subject to the
68 trusts aforesaid to or in favour of such person or persons as she may
69 think proper except her mother [-] [Eveline] Daniell [-] mother's relations in blood
whether in the ascending
70 or descending line whom it is my express wish and desire to [exclude] from
71 participating in my property. And in default of such appointment [—] in
72 subject to the trusts aforesaid my said trust fund shall [-] intrust
73 for my two brothers Richard Silvester Daniell and George Thomas Daniell
74 their executors administrators and [associates] share and share-alike as [tenants]
75 in [-] and not as joint tenants. And I empower my said trustees or
76 trustee to apply this which or any part of the [-] to which [-] or any
77 object of the [-] trusts and provisions [—]

78 my said trust fund shall be utilised in possession or immediate
79 in or towards the maintenance [—] or otherwise for the benefit of
80 [-] object whilst under the age of twenty-one years and unmarried if a
81 formal and the [-] applied [interest] shall be accumulated and the accumulations
82 added to my said trust fund. And I declare that the [-] of my said
83 trustees or trustee shall exonerate [-] and others [-] or in
84 transferring properties, monies or funds to such trustees or trustee by [virtue]
85 of my Will from all liability in respect of the application thereof. I appoint
86 the said Thomas Hodgkin and Robert McCormick to be the trustees and
87 executors of this my Will for all the purposes thereof. And I declare
88 that if the said trustees or either of them shall disclaim or if they or either
89 of them or any trustees or trustee to be appointed under this clause shall be
90 [declare] [—] to act as trustees or trustee of my Will it
91 shall be lawful for the trustees or trustee of my Will competent to act whether
92 disclaiming or declining further to act or not or if now for my executors or
93 administrators for the time being by any [—] in waiting to appoint any
94 persons or person to be trustees or trustee in the place of the trustees or
95 trustee disclaiming, dying or declining or becoming incompetent to act. And I further
declare
96 that the clauses hereinbefore [containing] so far as they contain [-] my trustees
97 and executors hereinbefore named shall [-] and be applied to the trustees
98 or trustee and the executors or executor for the time being of this my Will.
99 And I further declare that the trustees or trustee for the time being of my Will
100 shall not be accountable for [-] others acts or for any losses
101 happening without their own [-] default and shall be at liberty to
102 retain and allow to [-] other all expenses [-] to the execution of the
103 trusts and powers of my Will. Lastly I revoke all former and other Wills by
104 me at any time heretofore made due witness whereof I have [-] out of my
105 hand this day and year first before written—the mark of William
106 Freeman Daniell—witnessed by the said testator as his
107 last Will Testament the same having been previously [had] [-] and
108 explained to him in the presence of us [-] at the same time who at his
109 request in his presence and in the presence of [-] others having subscribed
110 our names as witnesses to oath signature which was made by the said
111 testator William Freeman Daniell [-] his [-] to the last [-] of this
112 his last Will and Testament contained in four sheets of paper. —
113 John [-] physician Southampton—R Garrard Pearce a
114 solicitor Southampton.
115 PROVED at Southampton 26th September 1865 by ...

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danref.tex 17:58 hrs August 19, 2011

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