



Re-evaluation of the diagnosis of porphyria cutanea tarda in Admiral Sir Francis Beaufort

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Summary

Objectives Two biographies of Admiral Francis Beaufort (1774–1857) have stated that, aged 20–25 years, he suffered from porphyria cutanea tarda (PCT) that was ‘cured’ following severe blood loss during a naval skirmish. We have examined the evidence concerning the nature of his skin disease.

Design Primary records, most notably Beaufort’s correspondence with his family, his journals and his father’s diaries were sought out and analysed.

Setting This case report is discussed in the context of 18th-century naval medicine and concepts and treatment of skin disease.

Results The description of his lesions, their age of onset, their progression and response to treatment, particularly topical tar and associated features are quite inconsistent with a diagnosis of PCT. His mother, Mary Waller Beaufort (1739–1821), consulted Dr Robert Darwin in 1803 about a painful skin disease affecting her legs. Detailed description of the lesions and a contemporary diagnosis are not available but possible diagnoses include chronic psoriasis and stasis eczema.

Conclusions A more tenable diagnosis is that Francis Beaufort had chronic plaque psoriasis remitted by bed rest and convalescence in the sunny Mediterranean climate with cessation of alcohol consumption and improved nutrition as well as topical and oral medications.

Introduction

Sir Francis Beaufort (1774–1857) is best known for his description of the Beaufort Scale for assessing wind force. He also developed the Beaufort Cypher used for a time in military communications. Less well-known, but the object of the current discussion, is the nature of his skin disease. Two biographies^{1,2} have reported that he developed porphyria cutanea tarda as a young

man. It was claimed that his lesions went into a lasting remission following acute blood loss sustained during a naval skirmish:

The ailment can be recognised without question as porphyria cutanea tarda (or symptomatic porphyria), ... Beaufort was cured by phlebotomy but the hard way¹

What Beaufort actually had, in all likelihood, was symptomatic porphyria brought on by a metabolic

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Reviewer
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*malfunction. He had all the symptoms ... unfortunate for Beaufort that he was not bled medically, and had to wait to be cured in line of battle.*²

Using the primary sources, this report reviews the evidence for these claims, offers a more sustainable account of his skin disease including that of his mother and discusses the basis for the above claims, all in the context of 18th-century medical practice.

Sources

The bulk of the letters from Francis to his father and other family members, his diaries and those of his father are lodged in the Huntington Library, San Marino, California. Some later correspondence is in the National Maritime Museum, Greenwich. His naval records may be found in the National Archives, Kew. His origins in Ireland and his links with the Edgeworth family mean that some relevant correspondence is located in the Edgeworth Papers in the Bodleian Library, Oxford and in the National Library of Ireland, Dublin. His mother consulted Dr Robert Darwin about her skin disease and background papers are part of the Darwin Papers, Cambridge University.

Principal life events

Full details of Beaufort's life are presented in the two published biographies, but his principal life events are summarized in Table 1 as background to the episode of skin disease in 1794–1802.

Beaufort was born in Navan, County Meath, Ireland, second son of Daniel Augustus and Mary Waller Beaufort on 27 May 1774. Dr Daniel Beaufort was a graduate of Trinity College, Dublin and, as well as the local Anglican rector, was an accomplished topographer, producing the first accurate map of Ireland.³

Francis had the usual childhood illnesses and was partially educated at home with four years at Bates' Military and Marine Academy in Dublin. He completed his formal education aged 14 years. He spent five months studying astronomy with Dr Ussher at Dunsink Observatory, Dublin before joining the East India Company's ship *Vansittart* under Captain Lestock Wilson, his future father-in law. The ship sank in the Gaspar straits

off Sumatra while surveying a suitable trade route to China. After an eventful time, he returned to England in 1790 and joined the *Latona* (Captain Albermarle Bertie) as a midshipman. At this time he suffered an inguinal hernia treated with a truss that was to trouble him for the rest of his life.

He transferred to the 32-gun frigate *Aquilon* (Captain Hon Robert Stopford) in June 1791. Shortly after this he had a near drowning episode and subsequently reported his panoramic memory experience.⁴ In January 1794 he sustained a severe accidental head injury with major blood loss; he soon recovered and continued with the heavy duties of a naval frigate engaged in blockading the French fleet.

In *Aquilon* he had his first major naval action when he was signal Midshipman during Earl Howe's resounding victory in 1794 over the French fleet off Brest in the action known as the 'Glorious First of June'.⁵ He shortly afterwards transferred with Stopford to the 38-gun frigate *Phaeton*. At this time he described the first signs of the skin disease that was to trouble him increasingly over the next five years.

In June 1795 his ship was heavily involved in the action known subsequently as 'Cornwallis's Retreat' when the Fleet withdrew from potential defeat by an overwhelming French fleet. His skin disease continued to worsen, but during this period he passed the necessary examinations and was promoted to first lieutenant (10 May 1796) on the *Phaeton*, now under command of Captain James Morris. This was a particularly stressful time, with the threat of a French invasion and Irish unrest. In October 1800, he sustained near fatal injuries during the boarding of a Spanish polacre (three-masted brig). This episode is described under the section covering his skin lesions.

After a prolonged period of convalescence with time spent in Ireland on half pay, he was appointed captain of the storeship *Woolwich* in 1805. During this time he developed his wind scale, subsequently adopted throughout the Royal Navy and elsewhere. He also participated in various surveying expeditions, notably to the Turkish coast, when as captain of the *Frederickssteen* in 1812 he encountered some Turkish dervishes who fired on Beaufort and his companions. Beaufort sustained a serious bullet wound that entered via his groin, splintered his femur and exited near his

Table 1
Principal life events of Francis Beaufort

Date (age)	Event
27 May 1774 1784–1788	Born: Navan, County Meath. Ancestry: French Huguenot Bates' Military and Marine Academy, Dublin including 5 months with Dr Henry Usher, Professor of Astronomy, Trinity College, Dublin
20 March 1789 (14 years)	Sailed from Gravesend on <i>Vansittart</i> of the East India Company as 'Captain's Servant' (Captain Lestock Wilson)
25 August 1789	Shipwrecked off Batavia (Jakarta), Indonesia. Arrived at Whampoa, China and returned to Portland, England
24 June 1790	Midshipman on frigate <i>Latona</i> (Captain Albermarle Bertie)
1 June 1794 1794	Signal man in the 'Glorious First of June' defeat of the French Fleet off Brest Transferred to the larger frigate <i>Phaeton</i>
10 May 1796 (21 years) 1799	Passes examination and promoted to lieutenant First lieutenant on <i>Phaeton</i> (Captain James Morris)
9 September 1790	Transports Lord Elgin, Sir William Hamilton and party to Naples. Meets Nelson at Palermo, Sicily
28 October 1800 (26 years)	Captures Spanish polacre <i>San Josef</i> off Fangarolle. Seriously wounded
1 September 1801	Returns to England, promoted commander and moves to Ireland on half pay
March–April 1803	Accompanies mother on her consultation with Dr Robert Darwin in Shrewsbury
5 June 1805 (31 years)	Appointed to command of storeship <i>Woolwich</i>
13 January 1806 1806–1809	Records his Wind Scale in his journal Various voyages in the <i>Woolwich</i> to Cape Town, India, South America, Mediterranean islands
June 1809	Commander of 18-gun sloop <i>Blossom</i> . Various Mediterranean cruises
12 December 1810 1811–1812	Command of 32-gun frigate <i>Frederickssteen</i> , promoted to post-captain Survey of Turkish coast. Serious gunshot wound. Returns to England
1812–1817 1814	Author and Chartmaker: <i>Karamania</i> published Elected FRS
1815–1829	Recognition. Adviser to Royal Society and Navy on expeditions, etc.
14 May 1829 (55 years) 1831–1836	Accepts post of Hydrographer of the Royal Navy Voyage of Charles Darwin in the <i>Beagle</i>
27 August 1834	Death of wife Alicia from disseminated breast cancer
8 November 1838 (64 years) 1847–1855	Marries Honora Edgeworth. She suffers a stroke Ill-fated Franklin expeditions to North-West Passage
28 April 1848 1855 (79 years)	Knight of the Order of the Bath Retires from Hydrographic Office
11 December 1857 (81 years)	Dies of bronchitis and old age at Hove, Sussex

rectum. The wound bled profusely and became infected. He survived against expectations and returned to England: this was his last sea-going appointment.

In December 1812 he married his first wife Alicia Wilson. His career had a hiatus until his appointment as Hydrographer to the Royal Navy in 1829. During this period he published various maps, most notably his major work *Karamania*, an account of his Greek and Turkish travels and his surveying, topographic and archaeological expeditions. His election as a Fellow of the Royal Society in 1814 attests to his significant scientific contributions.

His appointment as Hydrographer led to a large expansion of the surveying and map-making activities of the Department, some of which remain in use today. He was also involved in several worldwide expeditions, most notably Robert Fitzroy's second voyage of the *Beagle* (1831–1836): Beaufort is partly credited with the appointment of Charles Darwin as the naturalist. Less successful was his involvement with his support of Arctic exploration and attempts to discover a Northwest Passage, most notably by Sir John Franklin. He was knighted in 1848.

He retired in 1856 and his final years were spent with chronic ill-health including chronic gastritis,

prostatic symptoms, renal calculus and sciatica. He suffered a myocardial infarct and died aged 83. His death certificate records bronchitis (1 month) and old age, as the cause of death on 7 December 1857.

Account of Beaufort's skin disease

The first reports of Beaufort's skin disease occur in 1794 [FB 447; 12 Aug 1794] but detailed descriptions to his father and medical consultations are found in his letters from 1796 onwards⁶:

*Besides this cutaneous disorder of mine gains ground every day on me. My hands are now almost all one scab, constantly splitting and cracking with the cold. My arms my legs and feet are nearly as bad but there are none on my body, except a few on my bum.*⁶ [FB 260; 17 Nov 1796]

In January 1797 Beaufort seeks medical advice from a Dr Griffiths and from Dr Thomas Trotter, Physician to the Fleet and reports to his father:

*I have waited a few days in writing this, for an answer from Griffiths, to whom I have written for his advice on this ugly complaint of mine ... My disease excepting a slight debility and languor, a little itching and the extremely nasty appearance of it on those parts exposed to view, is other wise attended with no disagreeable consequence. There are no spots on my body or face, but on every part the spots are so thick that they frequently run into a continuous scab which when on the joints often crack. It peels off in large Flakes like white bran and is always succeeded by a similar substance. Nothing of all the various applications I have made use of has had the smallest effect. I then consulted the Physician to the Fleet Dr Trotter who to the most inexcusable obstinacy adds I am well convinced, a vast degree of ignorance.... He attributes it to the remains of a venereal complaint, notwithstanding my positive assurances that I never had any connection from whence such a disorder could possibly arise ... and he (Trotter) recommends me to go through an immediate course of mercury which I positively will NOT.*⁶ [FB 261; 8 Jan 1797]

Dr Trotter (1760–1832) was an enthusiast for mercurial treatments for a variety of conditions.⁷

Six months later his condition has deteriorated:

... I did not chuse [sic] to alarm you by telling you that I am really worse – both in quality and quantity of the disease, there are few parts of me where it is not spread or spreading, my arms are totally covered, my poor rump all one scab and my legs also – my body and face which heretofore luckily escaped the contagion are at length submitting ... my arms and rump crack and fly in all parts and are so sore that I cannot lay with any ease at night ... nor can I bend or straighten the former above a certain angle without the most acute pain – and another bad symptom, underneath these scales or scabs which used formerly to be almost dry there is now a sensible quantity of thick glutinous matter – I persevere with Griffith's ointment on one arm for a length of time it threw off a much greater quantity of the scales but was infinitely sorer and ultimately worse than the other ...

Beaufort intends to obtain a further medical opinion:

Our stay will be very short, long enough I hope to hear from you and get our linen washed, and take advice of the Physician of the Hospital who they say is a clinic man....

At the same time the severity of his disease is reflected in the comments of his shipmates: *'all on board (they don't know why) wonder at my staying on board – It does not all affect my appetite, my debility does not increase, rather the contrary, and my spirits are not all affected by it....'*⁶ [FB 270 25 June 1797]

His father noted in his diary: *Found a letter from Francis who is come into Plymouth for a few days to water. His complaint much worse – He will consult the Phys of the hospital.*⁶ [FB 5; 27 June 1797]

The Phaeton remains in Plymouth where he consults the physician:

As I intended I consulted Dr Guch [Geach] and paid him my golden guinea. He called it what you may well remember I have insisted it was the Lepra Greca of the Ancients, thinks more of it than any others, but say he cured a young lady who had it almost as extensively[?], by taking a considerable quantity of Corrosive Sublimate abstaining from Fish, Pork, etc. Of external applications he would

as yet make no use of and does not seem very sanguine about warm bathing. He recommends 10 drops of the above stuff daily.

Beaufort is convinced he has leprosy [Lepra Arabia] and consults his bible.⁶ [FB 271; 28 June 1797] Guch has been almost certainly identified as Dr Francis Geach MD, FRS (1724–1798),⁸ highly respected senior surgeon of the Royal Naval hospital in Plymouth, Devon.⁹

He continues with the topical ointments and reports some improvement:

With regard to my hide, the Tar continues to yield relief, wherever much afflicted, as far as softening the splits or cracks, and taking of the scales, but it goes no further and when omitted rubbing they return – so that it gives no proofs of an ultimate cure, nor indeed do I think external applications ever will. Surely the root cause of a disease universally, and uncheckably spread from the crown of my head, to the sole of my feet cannot be affected by a locally applied ointment ... My last resource being mercury⁶ [FB 272; 10 July 1797]

His naval records note periods in the *Phaeton's* sick quarters on 7 September 1797 and 1 July 1798 but no diagnosis or cause for admission is given.¹⁰

There are few further references to his skin lesions, which presumably continue to improve. Thus, later in the year he is concerned about an episode of cervical lymph adenopathy:

In my last you may recollect my mentioning a cold I had got, accompanied with glandular swelling in the neck, ... its suppuration is almost certain, towards which its progress these three days has been rapid....⁶ [FB 275; 25 Oct 1797]

Beaufort is convinced that he suffers from a scrophulous disorder for the past five years and plans to visit Dr Beddoes in Bristol who had opened a 'Pneumatic Institute' to treat various disorders with nitrous oxide.¹¹

There appears to be continuing improvements as he reports in 1798:

Thank God I have been tolerably well and consequently one great subject cut off. My ailments generally having engrossed the major part of my former epistles. ... My neck is now I report healed ... but

alas it will be two springs I fear before I shall have regained my ancient strength and vigour ...⁶ [FB 279; 28 Jan 1798]

A letter later in the year makes no reference to any illness or skin disease. Nor do any other letters even during recovery from his severe wounds note any significant skin disease. An account of his wounds can be obtained from his letters and the naval records. The *Phaeton* had cornered a Spanish polacre (three-masted brig) in the harbour at Fuengirola in southern Spain. Beaufort led a boarding party that captured the *San Josef* but in the event he received wounds to his head and leg but more seriously sustained a point-blank blunderbuss discharge containing 15 slugs to the left arm and chest. He collapsed and was returned to the *Phaeton* where he was bled 40 ounces (c. 1 L) as part of the usual procedures. He was not expected to survive and was transferred to the Royal Naval Hospital at Gibraltar. His letters at this time show shaky handwriting and he describes his wounds and their recovery in detail. It was at least three years before he had full use of his left arm. There is no reference to any skin disease.

He spent 18 months recuperating, first in Gibraltar¹² and at the English naval hospital at Alameda near Lisbon where he was able to visit on horseback many of the local sights. He left Lisbon on 18 August 1801 arriving in England on 1 September. During this voyage he writes to his father pondering his future:

Good God! From what numerous dangers has not Death assailed me ... besides diseases which he has enabled me to throw off – (you know one, of the most untoward nature. now quite gone) ...⁶ [FB 296; 18 Aug–1 Sept 1801]

He was medically examined in conjunction with his claim for a further appointment:

... to being examined touching the state of my carcass at Surgeon's Hall where I was bravely framed and figured in my buff. ⁶ [FB 756; 11 Sept 1801]

Again there is no comment on any skin disease: he was awarded a pension and placed on half pay until he received a posting in June 1805 to the storeship *Woolwich*.

Figure 1
Sir Francis Beaufort by Stephen Pearce: 1850.
 Reproduced with permission from National
 Portrait Gallery, London



There are no drawings or pictures of his skin lesions. Figure 1 shows his portrait at the age of 74 years: there is a suggestion of arthritis of the hands with a possible nail dystrophy. There is also an area of erythema, possibly a psoriatic plaque, on his scalp.

Mary Waller Beaufort (1739–1833), medical complaints and skin disease

Beaufort's mother suffered from a severe skin disease of her legs and, as certain skin disorders may be familial, it is of interest to chart her medical history. The mother of seven children, aged 51 she sustained in March 1790 a fracture of her tibia following a fall on an icy pavement. For at least a month she was in plaster and tightly bandaged splints.² She apparently suffered from skin disease of her legs for several years. Her husband notes in his diary: *To Dublin & put up at Wilson's Dublin Hotel. Mrs B consults [Drs] Hume and Perceval about her legs.*⁶ [HL FB 6; 6 April 1798]

Later he notes⁶ [FB 6]:

March 4, 1803. My dear wife with Francis & Louisa set out at $\frac{1}{2}$ past 6 for Dublin on their way to Bristol,

& Salop, to consult Darwin or Beddoes about her poor legs which are grown very bad again. ...

23 March 1803. Recd. a letter from Mary at Shrewsbury who has just seen Darwin & recd no flattering promises from him – she will go no further however.

30 March 1803. By a letter from Mrs B her cold almost well her legs vastly better able to take walks & weather very fine.

31 December 1803. This year ends with much gloom respecting finances–no great prospects of promotion for my sons at present. My dear Mary's legs very painful.

Francis Beaufort describes their visit to Dr Robert Darwin at Shrewsbury:

Salop March 31st 1803. ...

*Nothing farther has happened to my mother since her letter of last Sunday except there appears to be a new crop just appearing on her legs – and after several days of comparative ease she is beginning to rub [itch]. This so far lucky as Dr will now be able to distinguish them in several stages and may perhaps alter his opinion ... he confesses himself to be cowardly, to be an enemy of vigorous remedies and in comparison of the present new system to be of the old school. ... He says that when consulted he considers the case always on general health of the patient ... And in short that it is not Mrs Beaufort's legs that he considers but Mrs Beaufort herself. All this is very well but we must not let ourselves be led astray by the neatness of expression.*⁶ [FB 311; 31 March 1803]

In a letter to his brother William, he reports similarly:

*... we go on smoothly, my mother restless itchy and wheezy these three days and is expecting a fresh crop on her legs ... She is very well contented with his advice and won't listen to going to Bristol or Liverpool.*⁶ [FB 404; 1 April 1803]

The family returns to Ireland with no specific diagnosis or treatment. Nevertheless, Mrs Beaufort appears to improve and there are no further references to her skin problems. At no time is there any comparison of her skin lesions with those of her son Francis.

Subsequent correspondence between Mary Beaufort and members of the Edgeworth family in Ireland (1825–1833) refers to arthritic symptoms with falls and gastro-intestinal symptoms which culminate in her death aged 94 in 1833 from pelvic malignancy. No reference to any skin disease is noted.^{13,14}

Possible explanations of misdiagnosis by Beaufort's biographers

Both biographers reference medical authorities for their diagnosis of PCT. Alfred Friendly acknowledges Dr Naomi Kanof (1912–1988) as his source. She was the highly distinguished professor of dermatology at Georgetown University and former editor of the *Journal of Investigative Dermatology* and it is unlikely that she would have sustained a diagnosis of PCT based on Beaufort's clinical features. Unfortunately, no correspondence between Friendly and Kanof is available in the Georgetown University archives, the Huntington Library, the *Journal of Investigative Dermatology* offices or the Alfred Friendly Papers in Amherst College Library. However, the librarian at Georgetown University put me in touch with her son Robert Kanof Tendler. A phone call, confirmed by correspondence (28 April 2008), with Robert Tendler stated that he recalled a phone conversation between his mother and Friendly in which she was asked 'what type of skin disease Admiral Beaufort had that could have been cured by blood letting': 'Dr Kanof remembered that porphyria had originally been reported as being cured by bleeding a Pharaoh in Egypt which led her to believe that Admiral Beaufort suffered from porphyria.' Apparently there was no discussion of the description of Beaufort's skin lesions or other clinical details. This is a reasonable explanation how an experienced dermatologist could have contributed to the diagnosis of PCT.

Nicholas Courtney cites Dr Thomas DeLoughery, section head of benign haematology, Oregon Health & Science University as his source. Correspondence with DeLoughery (20 February 2008) was followed by the reply: 'I have no memory of ever commenting on Mr Beaufort's skin ... I don't tend to write like that ... sounds like bad

referencing!' There was no reply to a letter on this issue sent to Courtney via his publishers.

Discussion

The beginning of the 19th century was a pivotal period in our understanding and classification of skin diseases. Descriptive terms used to describe skin diseases were defined for the first time by Robert Willan in 1800, after which these terms were used to define specific diseases with far less ambiguity. The term 'Leprosy' had been used by Greek and Arabian writers to describe various skin disorders, however, in 1714 Daniel Turner described Leprosy of the Arabians and Leprosy of the Greeks, the latter corresponding to psoriasis.¹⁵ Willan's 1801 Second fascicle of 'On Cutaneous Disease' contained colour illustrations of chronic plaque psoriasis labelled as Leprosy Vulgaris (Figure 2). Willan stated: 'By the term LEPRO, I mean to express the complaint

Figure 2
Lepra Vulgaris by Sydney Edwards: 1798¹⁶



so denominated by the most accurate of the Greek Physicians'.¹⁶ The diagnosis of Dr Geach of *Lepra Greca* in Beaufort is, therefore, compatible with a diagnosis of chronic plaque psoriasis. A differential diagnosis should include eczema but this is unlikely: the rash was sore and is not described as itchy (extensive eczema is almost always intolerably itchy as well as painful) and produced large bran-like flakes (not seen in eczema and typical of chronic psoriasis).

Porphyria cutanea tarda (PCT) is by far the commonest of the porphyrin-cutaneous porphyrias and is due to reduced activity of the mitochondrial enzyme uroporphyrin decarboxylase. It was first recognized by Günther in his 1911 classification of the porphyrias when he distinguished it from congenital erythropoietic porphyria (Günther's disease). PCT is commonly subdivided into three types reflecting the relative contribution of acquired and inherited factors. The commonest form (Type 1 or sporadic PCT) was formerly known as symptomatic porphyria and this is the type Friendly and Courtney have claimed Beaufort suffered from. The enzyme impairment is secondary to hepatic toxins such as iron overload, alcohol misuse, hepatotropic viruses, oestrogen therapy and polyhalogenated hydrocarbon-contaminated foods, and usually presents in the fifth or sixth decade. Beaufort's onset at the age of 20 would be most unusual, particularly if iron overload were the precipitant.¹⁷

The clinical features of the skin lesions, bullous lesions, patchy pigmentation and hypertrichosis on sun-exposed regions, are quite distinct from those reported by Beaufort. The distribution, typically face, backs of hands and forearm, is also different from those experienced by Beaufort. He describes the absence of lesions on his face but the presence of lesions on his rump.

Regular venesection is nearly always a successful therapy with the usual regime of 450 mL every 1–2 weeks until the patient shows evidence of mild anaemia or iron deficiency. A total of 2.5–7.0 L of blood is usually removed and clinical remission takes 3–6 months. It is worth noting that Beaufort sustained a major haemorrhage before the onset of his skin disease and there is evidence that there was improvement before the episode of blood loss due to his wounds. His 18 months of convalescence in Gibraltar and rural Lisbon would have exposed him to intense

sunlight and, if he had suffered from PCT, would have exacerbated his lesions.

The improvement noted with warm baths and regular use of topical tar also supports the diagnosis of psoriasis. Willan described 'Liniments composed of tar, or of some mercurial preparations, have been much employed both in ancient and modern practice'.¹⁶

The combination of tar and baths anticipates a similar regime introduced in the 1920s by Goeckermann's treatment. It is likely that the tar was a wood (Stockholm) tar. Wood tar and pitch were exclusively used for ship's timber and rope preservation and would have been readily available to Beaufort. Wood tars continued to be used well into the 20th century.¹⁸ Natural bitumen, particularly associated with the Shropshire coalfields, was available for medicinal purposes from at least the 16th century. Betton's British Oil was in great demand following the patent registered by the Betton brothers in 1742: 'ye Sea Surgeons requiring it in Quart bottles' and continued in production until c. 1870.¹⁹ Natural bitumen is believed not to have anti-psoriatic action of any significance but it did have anti-inflammatory activity.²⁰

Although the patent for the production of coal tar by distillation was granted to Archibald Cochrane Ninth Earl of Dundonald in 1781, its medical use was not specified and coal tar medications only came into use in the early 19th century with the widespread production of coal gas.²¹

Beaufort clearly experimented with different medications and ointments. On 10 July he describes to his father such an attempt: *I don't believe I told you of an experiment our surgeon tried, he applied a blister to one of the large spots which lay distinct, but now that it is healing it appears little different from the rest.*⁶ [FB 272] This is reminiscent of Köbner's phenomena.

Beaufort not infrequently complains of episodes of depression, which he refers to as 'blue devils' or 'azure enemies'.¹ Depression occurs in approximately 25% of patients with psoriasis.²² In contrast, a recent survey has failed to find evidence of depression in patients with PCT.²³

Table 2 is an attempt to quantify the severity of Beaufort's psoriasis and to measure the impact on his quality of life. It clearly must be interpreted with caution as it reflects a retrospective

Table 2
PASI and DLQI Scores in Francis Beaufort

No	DATE	PASI	DLQI
1	17 Nov 1796	10	5
2	18 Jan 1797	15	10
3	25 June 1797	20	15
4	10 July 1797	15	10

PASI = Psoriasis Area Severity Index: maximum score 72;²⁴ DLQI = Dermatology Life Quality Index: maximum score 30²⁵
Scores \pm 5

interpretation of his description and consequences of the disease. Nevertheless, it highlights the severity of his condition: DLQI scores of >10 reflect significant disease and interference with his life. A modest improvement is evident following his use of tar ointments and warm baths. He is apparently symptom-free by September 1801.

References

- Friendly A. *Beaufort of the Admiralty. The Life of Sir Francis Beaufort 1774–1857*. London: Hutchinson, 1977
- Courtney N. *Gale Force 10. The Life and Legacy of Admiral Beaufort*. London: Headline Book Publishing, 2002
- De Courcy J. Francis Beaufort ~ Irish Hydrographer. *Technology Ireland* 1974 July/August 1–2
- Munk W. *Euthanasia: or, Medical Treatment in Aid of an Easy Death*. London: Longmans, Green and Co., 1887
- Warner O. *The Glorious First of June*. London: BT Batsford Ltd., 1961
- Sir Francis Beaufort: Huntington Library, San Marino, California, 1789–1855. Catalogued as FB with archive number and date
- Lincoln M. The medical profession and representations of the Navy. In: Hudson GL, ed. *British Military and Naval Medicine, 1600–1830*. Amsterdam: Editions Rodopi BV, 2007:201–26
- Wallis PJ, Wallis RV. *18th Century Medics*. 2nd edn. Newcastle Upon Tyne: Project for Historical Biobibliography, 1988
- Pugh PDG. History of the Royal Naval Hospital, Plymouth. I. The life and times of Captain Richard Creyke. *J R Nav Med Serv* 1972;58:87–94
- Admiralty Records, Pay book; Phaeton. The National Archives, Kew: ADM 35/1266-7: 1797–1802
- Jay M. *The Atmosphere of Heaven. The Unnatural Experiments of Dr Beddoes and his Sons of Genius*. New Haven, CT: Yale University Press, 2009
- Coad J. *Historic Architecture of the Royal Navy*. London: Victor Gollancz Ltd., 1983
- Beaufort-Edgeworth Papers. National Library of Ireland, Dublin: MS 22820-23446; 1812–1833
- Edgeworth Papers. Bodleian Library, Oxford: MS Eng ff.43-65; 1829–33
- Turner D. *De Morbis Cutaneis*. London: R Bronwicke, 1714
- Willan R. *On Cutaneous Diseases*. London: J Johnson, 1808
- Elder GH. Porphyria cutanea tarda. In: Kadish KM, Smith KM, Guillard R, eds. *The Porphyrin Handbook. Vol. 14*. London: Academic Press, 2003:67–120
- Ingram JT, Brain RT. *Sequeira's Diseases of the Skin*. 6th edn. London: JA Churchill, 1957
- Betton CS. British Oil. An 18th Century Shropshire Manufacture. Shropshire Archives; MS 3756/148: 1918
- Arnold P. Tar. *Clin Dermatol* 1997;15:739–44
- Clow A, Clow NL. Lord Dundonald. *Econ Hist Rev* 1942; XII:47–58
- Smith CH, Barker JNWN. Psoriasis and its management. *BMJ* 2006;333:380–4
- Lehner FE, Schneider-Yin X, Minder EI. Self-reported psychosocial consequences in Swiss patients with porphyria. Porphyrias and Porphyrias: Berzelius symposium 81, Stockholm, Sweden: 2009: Abstract P29
- Corti M. Psoriasis Area Severity Index. 2009. See <http://pasi.corti.li/>
- Finlay AY, Khan GK. Dermatology Life Quality Index. 2009. See <http://www.dermatology.org.uk/downloads/dlqquestDOC>

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