WHAT WAS PALGRAVE'S PLANT?

By *Dorothy Kamen-Kaye, A.B., F.L.S.**

PALGRAVE'S DESCRIPTION OF AN UNFAMILIAR PLANT

"Here also, for the first time, I met with a narcotic plan very common farther south, and gifted with curious qualities. Its seeds, in which the deleterious principle seems chiefly to reside, when pounded and administered in a small dose, produce effects much like those ascribed to Sir Humphry Davy's laughing gas; the patient dances, sings, and performs a thousand extravagances, till after an hour of great excitement to himself and amusement to the bystanders, he falls asleep, and on awaking has lost all memory of what he did or said while under the influence of the drug. To put a pinch of this powder into the coffee of some unsuspecting individual is a not uncommon joke, nor did I hear that it was ever followed by serious consequences, though an over-quantity might perhaps be dangerous. I myself tried it on two individuals, but in proportions, if not absolutely homeopathic, still sufficiently minute to keep on the safe side of risk, and witnessed its operation, laughable enough, but very harmless. The plant that bears these berries hardly attains in Kaseem the height of six inches above the ground, but in 'Omān I have seen bushes of it three or four feet in growth, and wide-spreading. The stems are woody, and of a yellow tinge when barked; the leaf of a dark-green colour and pinnated, with about twenty leaflets on either side; the stalks smooth and shining; the flowers are yellow, and grow in tufts, the anthers numerous; the fruit is a capsule, stuffed with a greenish padding, in which lie embedded two or three black seeds, in size and shape much like French beans; their taste sweetish, but with a peculiar opiate flavour; the smell heavy and almost sickly. While at Shohar in 'Oman, where this plant abounds, I collected some specimens intended for botanical recognition at home, but they with much else were lost in my subsequent shipwreck, nor did I again meet with this curiosity for the rest of my journey, then, indeed, near its end".

Narrative... (1865)
vol. I, Ch. vi. pp. 254-255

NARRATIVE

OF

A YEAR'S JOURNEY THROUGH

CENTRAL AND EASTERN

ARABIA

(1862–63)

BY

WILLIAM GIFFORD PALGRAVE

LATE OF THE EIGHTH REGIMENT BOMBAY N. I.

Not in vain the nation-strivings, nor by chance the currents flow;
Error-mazed, yet truth-directed, to their certain goal they go.
TEY'YEEYAT EL KOBRA', BY EBN-EL-FÁRID

فلا عبثاً والخلق لم يخلقوا سدى ـ وإن لم تكن افعالهم بالسديدة

IN TWO VOLUMES

VOL. I

London and Cambridge

MACMILLAN AND CO.

1865

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Abstract. "Palgrave's plant" is part fact, part fable-and, in part, fate. His plant may be called "psychotomimetic" (Schultes and Hofmann, 1980) and its seeds may be assumed to contain certain alkaloids (see *Banisteriopsis,* S. and H.). This discussion considers primarily two plants: *Peganum Harmala* (Zygophyllaceae), native to dry areas from the Mediterranean to northern India, Mongolia and Manchuria, and *Papaver somniferum* (Papaveraceae), cultivated throughout the Mediterranean region and in Asia.

These two plants are mentioned in accounts of a drug that produces intoxication more or less similar to that witnessed by Palgrave on several occasions among Arabian men gathered at the coffee-hearth. Palgrave supplements his account with a description of the plant said to produce the seeds utilized in powdered form as an addition to coffee.

Since Palgrave's immediate family were close relatives of William Hooker and his son Joseph –both prominent in the history of the Royal Botanic Gardens, Kew– he had a close contact with these distinguished botanists. Palgrave himself has beer characterized not only as "something of a botanist" but also –as his writing show– as a "keen observer".

The plants discussed, while worthy of consideration, must be regarded in the Palgrave connection as possibly as much fable as fact, in consideration of circumstances that add up to "fate". On the whole, his is yet another among the many incomplete reports of ethnobotanical identification in the older literature.

William Gifford Palgrave (1826-1888)

After a brilliant career at Trinity College, Oxford, Palgrave went to India as a subaltern in the Eighth Regiment, Bombay N.I., in 1847. Following an illness, he left the army to join the Jesuit Order as a missionary. He had felt an attraction to the East for some years, and he had his father's linguistic aptitude. In Syria, where he made many converts and founded numerous schools, he acquired such familiarity with the Arabic language, manners and habits of life that he could, and did, pass easily for a native. He barely escaped alive in the massacre at Damascus in 1861, and in 1862-1863, he carried out a journey across central Arabia, partly with a view of possible missionary enterprise there and partly on a semi-political mission for Napoleon III. North and Central Arabia had been closed to Europeans for many years because it was under the control of the Wahhabi. This fanatic fundamentalist sect of Islam, named for a holy man, Mohammed ibn Wahhab, (a description and analysis of which Palgrave gives a lengthy account) was a significant influence in his time in the politics as well as the religion of Arabia. Believing it imprudent, even dangerous, to travel there as a Christian and a European, Palgrave posed as a Syrian physician, Saleem Abou Mahmoud-el-Eys, and was accompanied by a Greek Jesuit, Geraigiri, as his assistant Barakat-esh-Stanee. Both wore the dress of "middle-class travellers from Syria". They took along a camel-load of books, including a few medical books in good Arabic "intended for professional ostentation", a box of drugs and other medical supplies, and an assortment of trade goods, including two large sacks of coffee. Palgrave "doctored" by day and was received by friends and acquaintances at night along the length of a year's journey from Ma'an to the coast of Omān. Returning to London with the consent of his superiors, he severed his connection with the Society of Jesus and engaged in diplomatic work for the British government. He married in 1868 and left three sons at his death in 1888. Palgrave's account of his Arabian adventures, titled *Narrative of a Year's Journey through Central and Eastern Arabia,* published in 1865, was in such demand that Macmillan published a Second Edition in 1866.

(Principally from the *Dictionary of National Biography,* Vol. XV, with some details from Palgrave's *Narrative).*

Notes on two key phrases in Palgrave's account of "a narcotic plant" and his failure botanically to identify it.

"...a narcotic plant... gifted with curious qualities" which he met with for the first time in the lower Nejd and in Kaseem in central Arabia. Palgrave refers specifically to the seeds of this plant, which, pounded to powder and added to a cup of coffee and drunk by a guest at a coffee-hearth, causes him to "perform a thousand extravagances till after an hour... he falls asleep..." and a awaking remembers nothing that has happened.

Reference: One of the many students whom Linnaeus taught when he was a professor at the University of Uppsala –Olaf Reinhold Alander– presented a dissertation titled "Inebriantia" as a part of the required academic preparation for an initial medical degree; it was written in Latin and dated 1761. This thesis came to the attention of Professor Richard Evans Schultes of Harvard University and Professor Bo Holmstedt of the Karolinska Institutet, Stockholm. Suspecting that it was "probably the earliest interdisciplinary treatise on intoxicating plants in the Linnean era and possibly in European literature", they felt that it "ought to be made available to the English-speaking audience". They translated it, using both the original Latin and a Swedish version published in 1963. In their Foreword, the state that "it is believed that Linnaeus himself wrote wholly or in part, some of his students' theses".

Alander describes the effects of use of both opium and *Peganum Harmala.* He quotes Belon on *P. Harmala,* who stated that it was consumed as "seeds sold in the market", adding that "the emperor Soliman used to eat the seeds without knowing what they were, because they gave him increased sexual desire and blotted out the memory of unpleasant events". He mentions the possibility

that these same seeds, eaten in Persia by Kaempfer, produced euphoria followed by hallucinations.

Comments

(Lewin 1964: pp. 38 and 239) Belon, a French naturalist who travelled through Asia Minor and Egypt, stated in 1546 that "They [the Turks] eat opium because they think that they thus become more daring and have less fear..." Lewin mentions Kaempfer, in connection with betel, as "a famous explorer".

(Font Quer 1962: p. 424) Speaking of the seeds of "alharma", he comments that "Linnaeus himself, in his 'Academic Amenities' speaks of this virtue [of producing 'a delicious intoxication'] when he tells us that in Turkey they sell them to obtain with them a state of mirthful euphoria and great joy. It seems to be similar to that which the Indians of America attain with yajé. In Morocco, these seeds constitute a kind of panacea with which they cure the most diverse illnesses".

(Lewis 1963: p. 32) quotes Ogier Ghiselin de Busbecq, the Turkish Ambassador to Vienna, in the Turkish Letters... 1694: "if you ask me, what manner of man Solyman was? I'l tell you..." [he refers to Süleyman (1520-1566) called "Kanuhi" ("the law-ordained") by the Turks and "the Magnificent" by the west]. After recounting the Sultan's virtues, he admits that his enemies faulted him as being too uxorious..., [and that his wife had] that Ascendent over him, by reason of her Inchantments and Amatory Potions...".

(Lewin 1964: pp. 34-35) quotes from the Odyssey: When Telemachus visits Menelaus in Sparta, they and the assembly, sharing memories of the slain, are sorrowful. "And Helen...poured into the wine...a drug, nepenthes, which gave forgetfulness of evil. [She] possessed this wonderful substance which Polydamna had given to her, [who was] the wife of Thos in Egypt..." Lewin adds, "There is only one substance...capable of acting in this way, and that is opium...Either the unripe seeds –the ripe one are useless– or the capsule of the poppy were employed".

By the time Palgrave, having been present at many gatherings at Arabian coffee-hearths, witnessed the action of certain seeds pounded to powder and added to spiced coffee, confusion as to the origin of so unusual a drug must have been general. It seems strange that he apparently never found out more at the time about the provenance of the seeds and the appearance of the plant from which they were harvested. Was there a reluctance to share what may have been a secret?

"...but they [the unidentified seeds] with much also were lost in my subsequent shipwreck...".

Palgrave tells the story:

"One of our sails was blown to rags, the others were with difficulty got in, and when night closed we were driving under bare poles before a fierce south-wester over a raging sea, while the sky, though unclouded, was veiled from view by a general haze, such as often accompanies a high storm. The passengers were frightened, but the sailors and I rather enjoyed the adventure, knowing that we were by this time far off the coast, clear of all rocks, and in short anticipating nothing worse than a day or two extra at sea before getting round to Mascat. The moon rose, she was in her third quarter, and showed us a weltering waste of waters, where we were scudding entirely alone; some other vessels which had been in sight at sunset had now totally disappeared. The passengers, and Yoosef-ebn-Khamees among the number, dismayed by the mad roll of the ship, no longer steadied by a stitch of canvas, by the dashing of the waves, and all the confusion of a storm, sat huddled below in the aft-cabin, while the helmsman, the captain, and myself, held on to the ropes of the quarter-deck, and so kept our places as best we might; the two Sonnees with the Nejdean recited verses out of the Coran; the 'Omānee sailors laughed, or tried to laugh, for some of them too began to think the matter serious; no one however anticipated the sudden catastrophe near at hand.

"It may have been, to judge by the height of the moon above the horizon, about ten of the night or a little earlier, when we remarked that the ship, instead of bounding and tossing over the waves as before, began to drive low in the water, with a heavy lurch of a peculiar character. One of the sailors approached the captain and whispered in his ear; in reply the captain directed him to sound the hold. Two men went to work and found the lower part of the vessel full of water. Hastily they removed some side boardings, and saw a large stream pouring into the hold from sternwards: a plank had started. ...'Ikhamoo', 'plunge for it', shouted the captain, and set the example by leaping himself amid the waves. All this passed in less than a minute; there was no time for deliberation or attempt to save anything.

"How to get clear of the whirl which must follow the ship's going down was my first thought. I clambered at once on the quarter-deck, which was yet some feet raised above the triumph of the lashing waves, invoked Him who can save by sea as well as by land, and dived head foremost as far as I could. After a few vigorous strokes out, I turned my face back towards the ship, whence a wail of despair had been the last sound I had heard. There I saw amid the raging waters the top of the mizen-mast just before it disappeared below with a spiral movement while I was yet looking at it. Six men –five passengers and one sailor– had gone down with the vessel. A minute later, and boards, mats, and spars were floating here and there amid the breakers, while the heads of the surviving swimmers now showed themselves, now disappeared, in the moongleam and shadow.

"So rapidly had all this taken place that I had not a moment for so much as to throw off a single article of dress; though the buffeting of the waves soon eased me of turban and girdle. Nor had I even leisure for a thought of deliberate fear; though I confess that an indescribable thrill of horror which had come over me when the blue glimmer of the water first rippled over the deck, though scarce noticed at the time, haunted me for months after. But at the actual moment the struggle for life left no freedom for backward-looking considerations, and I was already making

for a piece of timber that floated not far off, when on looking around more carefully I descried at some distance the ship's boat; she had been dragged after us thus far at a long tow, Arab fashion, though who had cut her rope before the ship foundered was what no one of us could ever discover. She had now drifted some sixty yards off, and was dancing like an empty nutshell on the ocean... At last, after some minutes, long as hours, I touched land, and scrambled up the sandy beach, as though the avenger of blood had been behind me. One by one the rest came ashore–someja stark naked, having cast off of lost their remaining clothes in the whirling eddies; others yet retaining some part of their dress. Every one looked around to see whether his companions arrived; and when all nine stood together on the beach, all cast themselves prostrate on the sands, to thank God for a new lease of life granted after much danger and so many comrades lost.

"Then rising, they ran to embrace each other, laughed, cried, sobbed, danced. I never saw men so completely unnerved as they on this first moment of sudden safety... Yoosef has lost his last rag of dress; I had fortunately yet on two long shirts (one is still by me), reaching down to the feet, Arab fashion. I now gave my companion one, keeping the other for myself; my red scull-cap had also held firm on my head, so that I was as well off or better than any...

"Two of the sailors, with a curiosity nowise unnatural, made a return visit that very evening to the beach, where they found the broken planks of our boat, dashed to pieces by the surf. Of the ship we never heard or saw more–where she lay, not five but seventy or eighty fathoms deep, if the soundings of the Sowadah rocks be correct".

(Excerpts from Palgrave's *Narrative,* Vol. II, p. 342ff.).

Since Barakat was unwilling to continue to Omān, Palgrave's good friend, Aboo-'Eysa, sent with him Yoosef-ebn-Khamers, a young native of Hasa to whom he had been king and who was devoted to him. Before they set out for Omān, Palgrave entrusted all his notes and personal belongings not needed on the journey to Barakat, to be returned to him when he rejoined Barakat in Baghdad. So it was, that the seeds he had collected in Omān were lost forever, seventy or eighty fathoms deep off the Sowadah rocks. Thus did fate become the third factor in the story of "Palgrave's plant". On reaching Sohar, on the Gulf of Omān, Palgrave and Yoosef did not continue their journey on land, as they had planned. As Palgrave observes, "on the backgammon board of life, chance and circumstance decide no less than forethought and skill".

They continued by sea from Mascat instead –and ran into one of the fiercest of the storms for which the Gulf was famous. After the shipwreck near Seeb, the two walked barefoot to Matrah (on the coast, west of Mascat), where they presented themselves as "two shipwrecked individuals" and were given food and shelter. They proceeded by canoe to Mascat where a merchant from Hasa gave them not only food and shelter but also clothing of the kind worn in that region. There was an epidemic of fever (which Palgrave thought was typhoid) at Mascat, and when a sea-captain whom they met offered them free passage to Sohar, they decided to accept, and embarked on March 23, although Palgrave already felt ill. At Aboo-Shahr, he had to be carried on the shoulders of seamen to Aboo-'Eysa's house, where his welcome was all the warmer because he was thought to have perished in the shipwreck. He then travelled by river steamer, receiving medical attention on the way, to Baghdad, where Barakat awaited him, and now convalescent, was able to continue to Aleppo with Barakat. So concludes the story of Palgrave's year-long travels in Arabia in which fate played a decisive role.

Palgrave concludes his *Narrative:* "Much, how much, is left untold, reserved, I trust, for some more fortunate traveller than he who bids the reader a hearty "Farewell'."

Palgrave spoke truly; there remain questions unanswered. Why did he never find out more about the seeds of the coffee-hearth? He was on intimate terms with "Uncle and Aunt [William J.] Hooker" and their son Joseph Dalton Hooker, and visited them at Kew (Allan 1972, p. 151). Throughout his book, he mentions many (and describes some) plants, from herbs to trees. Surely he asked these two distinguished botanists about them. An approach to Kew (pers. comm.) elicited a suggestion that Palgrave's memory of the narcotic plant "was at fault" to account for his description of it. His omission of and failure to verify botanical observation is the more strange because in the interest of accuracy, he sent his manuscript to his brother Francis (who had published in 1861 his *Golden Treasury of the Best Song and Lyrical Poems in the English Language),* asking for a critical reading and possible corrections, and he went to Berlin to consult two prominent cartographers when he made a map of his travels.

Overall, Palgrave's attitude was that of the scientist. In his "Preface" he states that he will distinguish clearly between what is seen in person –what is inferred or conjecture– what is gathered at second hand. He explains that omissions and possible mistakes were due to his lack of "the customary requisites for verifying latitudes and longitudes or determination of heat and cold, of moisture and humidity". He adds that he was also handicapped by his disguise, which prevented his taking notes or making sketches in public. He naturally carried no photographic equipment.

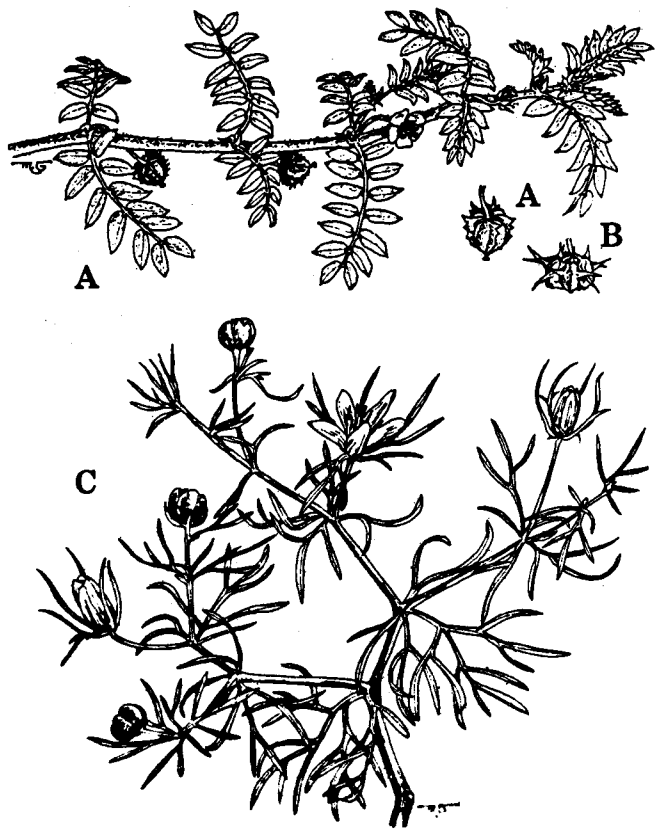
Perhaps the "not uncommon joke" of the surreptitious addition of a drug to coffee was not so general a joke as Palgrave thought. Accounts of the coffee-hearth and its etiquette in several studies of Arabian customs do not mention it. For example, two readings of Doughty's *Travels in Arabia Deserta,* in which he often mentions semi-ceremonial coffee-drinking as an almost universal custom between 1876 and 1878 in oasis settlements

and cities, there is little reference to any "entertainment", aside from conversation or the recounting of experiences. In this classic among books on Arabia in the eighteen hundreds, Doughty does describe, as diversion, the exchanging of riddles. "The old man, Nejm", he writes, "propounded riddles...the Arabs...said theirs, and we guessed 'round; when the word fell to me, I set them the enigma of the Sphinx, saying that this was the most famous riddle in the world. When they could not unriddle [it] they were delighted with the homely interpretation. Twice again I have propounded my riddle..." (Vol. I, p. 237).

Perhaps it is forgivably in character to conclude these notes on facts, fables and fate with mention of riddles; actually, in sum, they add up to a riddle.

From a phytochemical evaluation of the confused and very limited account given by Palgrave, it appears that the psychoactive seeds to which he made reference must be referred to *Peganum Harmala* and not to *Papavar somniferum*. First: the part of the plant employed is reported to be "seed". The ripe seeds of *P. somniferum* contain no psychoactive principles and are commonly used in Western bakery products. Second: all of the sparse descriptions of the effects of these narcotic seeds used in the Orient agree with the effects of β-carboline alkaloids. The β-carboline alkaloids-harmine, harmaline and β-harmaline are known from *P. Harmala*, of the Zygophyllaceae (Hegnauer, 1973).

These same or related alkaloids are present also in the hallucinogenic drink known as ayahuasca, caapi, natema, pindé or yajé prepared for and used in the western Amazon as magico-religious adjuncts to aboriginal ceremonies (Schultes and Hofmann, 1980). This narcotic beverage is prepared from the malpighiaceous genus *Banisteriopsis*, a member of the *Malpighiaceae*, a family closest allied to the Zygophyllaceae. It is strange that peoples in opposite parts of the world would find different plants for psychoactive use which, although in different families and in plants of very different ecological situations, contain the same active principles.



A. Tribulus longipetalus B. Tribulus terrestris
C. Peganum harmala

Consequently, in view of the vague data presented in Palgrave's report and basing our evaluation on the available morphological and chemical information available, it is suggested that Palgrave's intoxicant was not the opium poppy but was *Peganum Harmala*, a plant common in the region and containing the chemical principles necessary to account for the activity described.

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