**The Shakespeare-Hemp-Cannabis (SHC) hypothesis**

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**Abstract**

This essay serves to explore certain examples of early 17th century English literature, in which reference is made to the terms “weed”, “tobacco”, “hemp” or “Cannabis”. In addition a summary is given with regard to extraordinary results of chemical analysis of residues from 17th century clay “tobacco” pipes from Stratford-upon-Avon and surrounding areas. Particular attention is given to extracts of literature composed by Francis Beaumont, John Taylor and "Philaretes", believed to be a pseudonym for Sir John Harington, godson of Queen Elisabeth I. I end by formulating the Shakespeare-Hemp-Cannabis (SHC) Hypothesis, as follows: “William Shakespeare discreetly smoked stigmatised Cannabis/hemp/weed (with a moderate degree of mind-stimulating THC), associated with a source of inspiration for creative writing (“invention in a noted weed” in cryptic wordplay in Sonnet 76), constituting a “Tenth Muse” which “gives invention light” (Sonnet 38) to supplement the nine muses known to the Greeks”.

**Keywords:** Shakespeare, hemp, Cannabis, English literature, early seventeenth century, Francis Beaumont, John Taylor, Philaretes, John Harington, John Gerard, tobacco, clay pipe

**Introduction**

In Shakespeare’s Sonnet 76, “Invention in a noted weed” relates metaphorically to a style of writing, likened to a style of clothing.1 “Invention” refers to a creative style of writing, and “weeds” refer to garments, but of special interest is the fact that clothing in Shakespeare’s time was made from the fibre of Cannabis (hemp), a plant represented by a single species, *Cannabis sativa,*with many varieties or strains2 and with variable concentrations of the mind-stimulating compound tetrahydrocannabinol (THC), depending partly on climate (moderate degree of THC in temperate  climates). Modern “industrial hemp” (from Cannabis fibre) has essentially zero percentage THC, but “hemp” grown in 17th century temperate England arguably had a relatively small degree of THC.

With a clear illustration, the botanist John Gerard3 uses the name Cannabis in 1597 to refer to hemp. Apart from its use for clothing, Cannabis fibre served importantly for canvas (notably for ship’s sails), rope and paper.  The fact that Cannabis was accessible in England in Shakespeare’s time is unquestionable, as indicated by “what hempen homespuns have we swaggering here?” (*A Midsummer Night’s Dream* 3.1.70).

The following set of early 17th century records has been reported by Thackeray.4 The term “weed” related to Cannabis in the context of clothing, but did “weed” refer also to Cannabis as a kind of tobacco? “Weed” itself certainly referred to “tobacco”. Warner (1606) refers to “An Indian weede, that feum’d away more wealth than would many a thousands feed”, and Cannabis was known from India. Alexander Craig (*circa* 1609) refers to a “pype of loame” (clay pipe) in the context of “far-fett Indian smoke”.  In 1609 in Guls Horne-Book, Dekker refers to India in the context of tobacco smoke in nostrils, and writes “If you cannot reade, exercise your smoake, and enquire who has writ against this divine weede”.  The Church had certainly “writ against” Cannabis, and writers needed to be careful about the content of their texts especially at a time when Cannabis was associated with witchcraft.  Indeed, one such example was Garcia da Orta, who described the stimulating properties of Cannabis and other substances known as “simples and compounds” from India in the 16th century.  On his return to Europe from India, Garcia’s books were burnt, after Pope Innocent VIII had associated Cannabis with witchcraft. In France, Francois Rabelias subsequently satirised the Church in his book *Gargantua and Pantagruel,* which refers to Cannabis under the cryptic name *pantagruelion*. Rabelais created this name deliberately as a cover when referring to Cannabis, in order to protect his satirical book from being burnt. Shakespeare evidently knew of Rabelais’ work since there is reference to Gargantua in *As You Like It* 3.2.331.

The term “tobacco” or “weed” need not necessarily have been restricted to one kind of tobacco.  It is recognized that “Indian tobacco” could refer to *Nicotiana* from Amerindian territories, in addition to Cannabis as a kind of “tobacco” (cf. “weed”) from India.

**Chemical analysis of clay “tobacco” pipes: a concise summary.**

Chemical analysis of organic residues in early 17th century clay “tobacco” pipe bowls or stems from the environs of Stratford-upon-Avon5 demonstrates that a diversity of plants was smoked, including North American tobacco (*Nicotiana*) introduced to England by Sir Walter Raleigh, and even South American cocaine (probably in the form of coca leaves introduced from Peru by Sir Francis Drake). The latter was totally unexpected but is borne out by the fact that Gerard3 refers to a kind of tobacco as “the henbane of Peru”. Evidently “tobacco” was supplemented by camphor and aromatic spices such as cinnamon (from India) and vanilla (originally from South America).

Suggestive evidence for the smoking of Cannabis was also obtained from GC-MS (gas chromatography-mass spectroscopy) analysis of pipe residues, using chloroform as a solvent to extract plant compounds. Although intensities were low, two pipes (one from Stratford-upon-Avon and another from Abingdon near Oxford) each had as many as five signals (m/z ratios) indicating the possible smoking of Cannabis. Eight out of 24 pipes had m/z ratios of the kind that would be expected for the smoking of this substance. However, it cannot be demonstrated that any of these pipes were smoked by Shakespeare himself.

Notable is a pipe bowl listed as WS 3 (B83) from the foundations of New Place, the house occupied by Shakespeare and his son-in-law Dr John Hall. It yielded suggestive evidence of Cannabis with signatures of 231, 243, 295 and 299 m/z, in addition to quinine, vanilla and cinnamon. WS 9 is a bowl from New Place with five possible indicators of Cannabis associated with m/z ratios of 193, 231, 258, 299 and 314, supplemented by quinine. WS 8, also from the site of Shakespeare’s house, is a pipe stem with signatures of 193, 231 and 299 m/z, again suggesting Cannabis although intensities were low. Two pipe stems from the Shakespeare Birthplace garden (WS 5A and WS 5B) had m/z ratios of 231 and 299, potentially associated with Cannabis.

Taken together, results of GC-MS analyses of organic residues in 8 clay pipe bowls and stems relate (inter alia) to the following m/z ratios: 193, 231, 238, 243, 246, 258, 271, 295, 299, 310 and 314. Although Thackeray et al5 were extremely cautious in their interpretations on account of low intensities, it is important to note that these eleven m/z values can be all be detected in modern reference samples of Cannabis.

The age of clay “tobacco” pipes can be estimated from bowl shape as well as from dimensions of pipe stems and inner diameters of bowls. The average bowl diameter for specimens studied by Thackeray et al5 is 10.6 mm, indicative of dates between 1605 and 1620 if one uses measurements of identical (or analogous) Dutch pipes as a basis for chronological estimates.6

**Verses by Francis Beaumont and John Taylor**

In Francis Beaumont’s (1602) *Metamorphosis of Tobacco*, we have the following verse:

Infume my brain, make my soul’s powers subtle,

Give nimble cadence to my harsher style:

*Inspire me* with thy flame, which doth excel

The purest streams of the Castalian well,

*That I on thy ascensive wings may fly.*

*By thine ethereal vapors borne on high,*

*And with thy feathers added to my quill*

May pitch thy tents on the Parnassian hill…

For this our *praised plant* on high doth soar,

Above the baser dross of earthly ore.

Which plant is being praised in the context of “feathers added to my quill” ? Is it Cannabis (“hemp”) as a form of tobacco ? Perhaps not coincidentally John Taylor (1620) wrote a poem titled *In Praise of Hempseed*, in which he refers to a “Muse” in the context of Cannabis which was used for paper:

But hollow Muse what mounted to the sky,

I’ll clip your soaring plumes for you and I

Must talk of Paper, *Hemp*, and such as this,

And what a rich commodity it is.

Thackeray7 interpreted this verse in the following terms: “I must talk of Cannabis (hemp) only in the context of its use as paper. I can’t talk about Cannabis as a source of inspiration since the wings of the Muse are clipped.” Thackeray went on to say that this interpretation could well relate to prohibition and censure (“clipping of wings”) associated with Cannabis.

**Philaretes, American Tobacco, English Hemp and Lucid Writing**

  A 48-page booklet was published in 1602 under the pseudonym of Philaretes, with the title “Work for chimny-sweepers: or A warning for tabacconists, describing the pernicious use of tabacco”. It was “Imprinted at London by T. Este, for Thomas Bushell”. Charlton8 suggests that the initials J.H. at the end of the booklet may refer to Sir John Harington, the godson of Queen Elisabeth and himself a poet. The motto on the title page is of great interest. In Latin it reads “*Fumus patriae, Igne alieno Luculentior*”. The author then offers a possible translation:*“*As much to say, Better be chokt [choked] with English hemp, [than be] poisoned with Indian Tabacco”. This might have been intended to mean that it would be better to be hanged by English hempen rope, rather than to be poisoned by American tobacco.8 However, it is necessary to look closely at the Latin motto. The word *luculentior* can be associated with the English word luculent, meaning either “shining brightly” or (in the sense of writing) “clearly expressed”. *Fumus patriae*in this case refers to smoke in England as a country. My translation of the motto then becomes “The English country’s smoke is brighter (more lucid, more clearly expressed) than foreign (American) fire”. One may suggest that this was associated with the smoking of English hemp (cf. “Better be chokt with English hemp”). As such, would this constitute a *cryptic* reference to the smoking of locally grown English Cannabis (hemp) with at least a moderate concentration of the compound known as THC, perceived to be superior to the smoking of tobacco from North America (*Nicotiana*) ?  In other words, despite his explicit pronouncement against the use of tobacco, one may question whether Philaretes was cryptically hinting (only in the motto in the beginning) that the smoke of English hemp (*Fumus patriae*) was associated with mind-stimulating properties of Cannabis, facilitating clearer expression (*luculentior*, more lucid, brighter), as compared to properties of “poisonous” unhealthy American tobacco.

It may not be coincidental that Cannabis (at least in moderate usage) allegedly stimulates creativity and lateral thinking.  The late Lester Grinspoon9 (Harvard Medical School) went so far as to say that the use of Cannabis can “promote fluidity of association and enhance insight and creativity”. I hypothesise that this relates to "invention in a noted weed" in Sonnet 76, where (in cryptic wordplay) "invention" expresses creative writing, and "weed" refers (in part) to Cannabis (hemp) with at least some degree of the mind-stimulating compound, THC.

**Conclusion**

Shakespeare never uses the word tobacco, probably for good reason. The Church ! “Tobacco” was associated with its use in non-Christian shamanistic rituals (cf. witchcraft) in countries from which it originated. Perish the thought that any of Shakespeare’s works should be burnt at the instructions of a literary censor such as Dr John Whitgift (Archbishop of Canterbury, analogous to the Pope in the context of Garcia da Orta’s situation in the late 16th century).

Sonnet 76 refers to a “noted weed”. One may well ask why Shakespeare’s adjective should be “noted” ? To answer this question it is appropriate to turn to the glossary compiled by Crystal & Crystal.10 They indicated that “noted” can mean “well known”, but ambiguously it can also refer to being “stigmatized”. Indeed, there was a stigma against Cannabis since the late 16th century, and Francis Bacon’s4 “despised weed” is potentially identical to a “stigmatised weed”.

In the light of poetry by Francis Beaumont, John Taylor and “Philaretes”, the “Shakespeare-Hemp-Cannabis (SHC) hypothesis" is formulated as follows: *William Shakespeare discreetly smoked the stigmatised Cannabis/hemp/weed (with a moderate degree of mind-stimulating THC), associated with a source of inspiration for creative writing (“invention in a noted weed” in cryptic wordplay in Sonnet 76), constituting a “Tenth Muse” which “gives invention light” (Sonnet 38) to supplement the nine muses known to the Greeks.* This encapsulates what Thackeray11 wrote in an essay entitled “The tenth muse: hemp as a source of inspiration for Shakespearean literature?” published as an *Occasional Paper of the Shakespeare Society of Southern Africa* in 1999*.*

In their summary of Sonnet 38 (which has elements strongly in common with Sonnet 76), Edmondson and Wells12 relate the subject of the verse to “the source of all poetic inspiration”, associated with the sonneteer’s appeal: “*Be thou the tenth muse*”. At least in this particular case, is Cannabis/hemp (personified) the source of inspiration ? 11

It is pertinent to end by quoting from Thackeray’s4 essay: “Many attempts have been made to interpret Shakespeare’s sonnets which are extraordinary in that they include curious statements and contradictions that seem impossible to understand, reminiscent of what Empson says about Type-7 ambiguity. For example, in Sonnet 43:

 When I sleep, in dreams [my eyes] look on thee,

 And darkly bright, are bright in dark directed.

Then thou whose shadow shadows doth make bright,

How would thy shadow’s form form happy show…

“Perhaps answers to questions regarding this sonnet and others like it will be found by turning to the study of “entoptics” (images perceived in altered states of consciousness), recognising that Cannabis as a stimulant may inspire creativity and facilitate insight into complex phenomena, relevant perhaps to Empson’s statement that the most complex “type” of ambiguity in his classification relates to “the secret places of the Muse” .”

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