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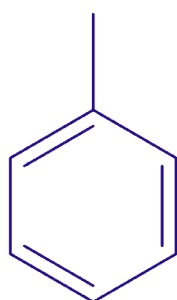
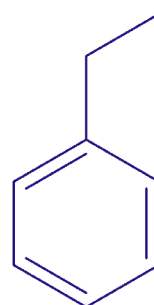
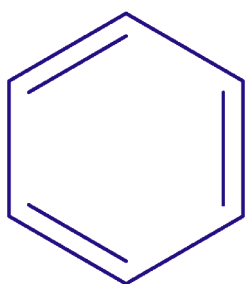
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ENCYCLOPEDIA OF SMELL HISTORY AND
HERITAGE

Creosote

Creator:
Manon Raffard

Citation:
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Whilst wood tars and resins were used as remedies and preservatives since Prehistoric times (Ambrose 2018),

creosote truly entered European sensory culture during the nineteenth-century as an industrial preservative and medical disinfectant. In Europe, the generic term 'creosote' mostly refers to two distinct products, often confused with each other: wood-tar creosote and coal-tar creosote. The former is a light-coloured oily substance produced by heating certain types of timber (usually beech, birch, or coniferous woods) at high-temperatures. The latter is a dark thick oily liquid extracted from coal-tar. Both share some medicinal and chemical properties (antiseptic, caustic, antifungal, to cite a few) as well as comparable tarry and phenolic olfactory profiles. Wood-tar creosote was discovered by Karl Von Reichenbach in 1832 by working on pyroligneous acid and beech tar. First known under the name 'carbolic acid', coal-tar creosote on the other hand was discovered in 1834 by

Rungé, and was soon renamed ‘coal-tar creosote’ after chemists highlighted its similar properties with its wood based counterpart (Schorlemmer 1885). Both creosotes were subsequently used in a variety of contexts requiring thorough disinfection, like factories, surgical rooms, or dental offices, but also in the treatment of several respiratory illnesses, such as pneumonia and tuberculosis. Despite most accounts describing creosote's pungent smell as particularly unpleasant, its association with hygienic and medical practices turned its tarry scent into a signifier of health and hygiene, feeding into the idea that treatments must smell bad to be effective, and contributing to the perception that physical pain and sensory distress are necessary experiences of proper care.

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Smells

Most olfactory accounts of wood-tar creosote and coal-tar creosote are particularly unspecific due to the overall intensity and pungency of their scent. In that regard, taking a look at their chemical composition can be useful. The scent of both creosotes is mostly caused by phenols, a category of aromatic compounds which can evoke tar, paint, gas, industrial disinfectant, and hydrocarbons in general. Thanks to the overwhelming presence of creosol and guaiacol, wood-tar creosote's olfactory profile is distinctly smoky, evocative of burnt wood, with resinous, dry ambery and leathery facets. If this may seem relatively enjoyable to a twenty-first century nose, Reichenbach still described the smell of wood-tar creosote as 'penetrating and unpleasant' (Reichenbach 1833) while Orfila characterized it as 'very intense and unpleasant, like the scent of smoked meats' (Orfila 1836, 30). The European-wide use of timber and coal as main sources of energy as well as the presence of creosote in most treatments for respiratory pathologies lead to its scent being associated with winter time as it suggests wood smoke, coal-burning, and the inevitable common cold: 'But what on earth is the matter with me tonight? It must be this icy December fog, like particles of

frost hanging in the air, quivering in an iridescent halo round the gas lamps and melting on one's lips with a taste of creosote' (Colette 1954, 11).

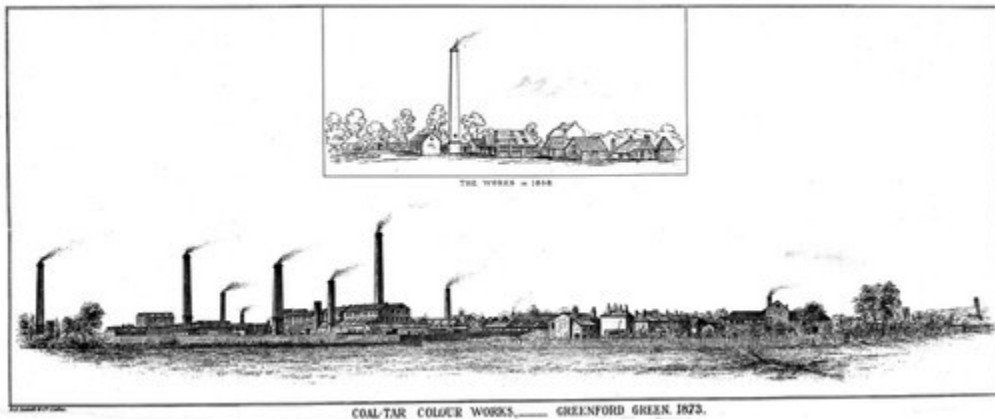


Figure 1. Coal Tar Color Works at Greenford, published in the *Journal of the Society of Arts*, 1877, Wellcome Collection, London.

On the other hand, coal-tar creosote is significantly more tarry and animalic, even fecal, due to the presence of para-cresol and naphthalene (Choudhary et al. 2002, 220-223). In *The Sign of Four* (1890), Arthur Conan Doyle describes the scent of the creosote spilled in Sholto's laboratory as an 'evil-smelling mess', so strong it fills 'the air [...] with a peculiarly pungent, tar-like odour', 'r[ising] high above all other contending scents' (Doyle 1917, 53, 50, 70). As the nineteenth-century progresses and the use of coal and tar products became essential of everyday life, olfactory accounts of creosote shift toward more complex descriptions. Since wood-tar creosote is a natural resource with a limited production rate, the increased demand for creosote meant that only carbolic acid, or coal-tar creosote, was used on a large commercial and industrial scale, especially in medical settings which required the frequent disinfection of large surfaces. In that regard, the narrator of Huysmans' *Against the Grain* mentions the fermented and peaty facets of creosote when its main character is reminded of past visits to the dental office while sipping Irish whisky:

He sank into his easy chair and slowly inhaled this fermented juice of oats and barley: a pronounced taste of creosote was in his mouth. [...] This carbolic tartness forcibly recalled to him the same taste he had had on his tongue in the days when dentists worked on his gums. (Huysmans 1922, 84-85)

The reference to carbolic acid suggests the use of coal-tar creosote rather than wood-tar creosote in dental offices. Coal-tar creosote's more astringent and animalic smell is particularly present in narratives evoking collective hygienic practices and the disinfection of communal spaces. For instance, in Michel Tournier's *Le Médianoche amoureux* (1989), school children are reluctant to burn creosote-treated timber in the classroom because its scent reminds them of communal bathrooms (Tournier 1996, 165).

Places

The large-scale industrial need for creosote requires its equally large-scale production to sustain the demands of the industries relying on its preservative and disinfectant qualities. During the nineteenth and twentieth-centuries, the tarry smell of creosote is linked to factories, where it is produced and used, either as a wood treatment, a disinfectant, or as a basic ingredient for other products, such as siccative agents for oil paints or gas additives for brighter street lighting (Payen 1864).

Because the scent of coal-tar creosote is perceived as particularly unpleasant, its use is limited to disregarded places, and spaces usually used by people from the lower classes. The smell of creosote cannot be dissociated from the hygiene practices forced onto the lower classes which were considered foul-smelling and unclean by bourgeois society (Csergo 1988, 34-36). Carceral narratives in particular integrate the scent of creosote into the rigorous daily hygiene routine of inmates, highlighting how sensory punishment tactics can be used to control people in oppressive environments:

Every morning we swept our cells, and all the prisoners took turns sweeping the corridor. The fine for spitting on the floor was ten lashes laid on hard. And each day before breakfast we soaked the seams of our clothes in vile-smelling creosote to kill off the lice and nits. We had no chance to bathe, and were given but little water to wash our face and hands. (Kemp 1922, 140)

Harry Kemp's testimony shows how the politics of carceral hygiene are ruled by two contradictory imperatives: limiting vermin infestations, while also ensuring prisoners do not experience any kind of sensory relief through the pleasant contact of water.

The mention of creosote's smell as an overwhelming olfactory stimulus is usually confined to the medical facilities dedicated to the lower classes. Whilst the disinfectant power of creosote made it a fixture of the chemical arsenal of surgical rooms and medical offices to ensure safer procedures, its smell is especially present in the context of charity hospitals, usually run by religious orders under the patronage of eminent figures of high-class philanthropy (Du Camp 1884, 300). In Frank Norris' *McTeague*, the smell of creosote escaping from the dental office pervades the atmosphere of the novel even during romance scenes. The narrator describes the dentist McTeague as 'stupid, ignorant, vulgar, with his sham education and plebeian tastes', fitting perfectly into the 'foul atmosphere [...] heavy with the smell of ether, creosote, and stale bedding' of his shabby 'Dental Parlors' (Norris 1899, 28-29), thus representing sensory distress as a necessary part of modern medical practices, especially for people of the lower classes.

Practices

From Reichenbach's discovery onwards, the European interest in creosote rose considerably due to its particularly interesting chemical properties. In the fields of industry and city planning, creosote was used to deodorize and to sanitize malodorous liquids – like sewage water, or the by-products of tanneries and distilleries – but also potentially unsanitary shared spaces such as 'ships' holds, dissection rooms, hospitals, stables, butcher shops, slaughterhouses, and morgues' (Radau 1874).

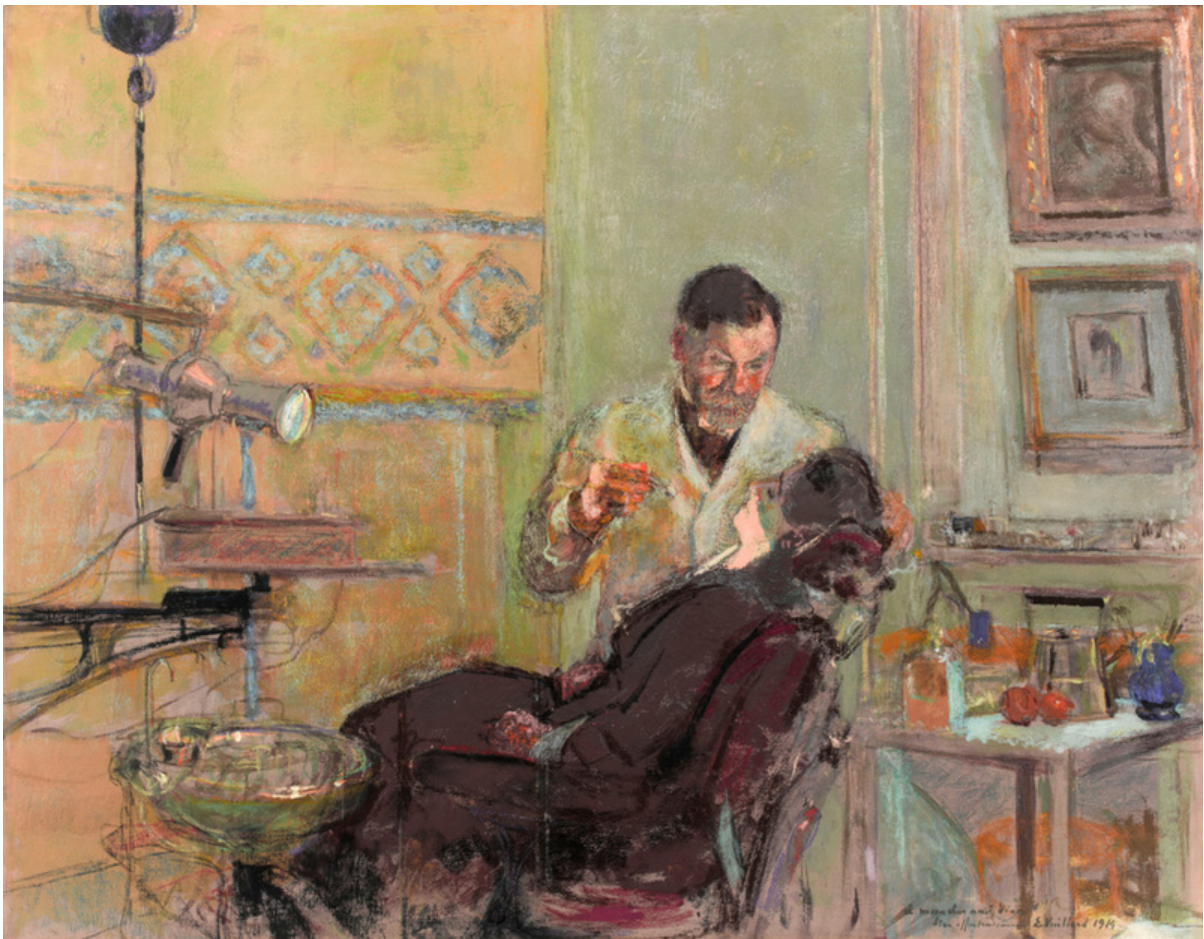


Figure 2. Edward Vuillard, Doctor Georges Viau in his dental office, 1914, painting and pastel highlights on canvas, 107.7; x 137.5 cm., © RMN-Grand Palais (Musée d'Orsay) / Tony Querrec, FR 1977 396.

In medical settings, coal-tar creosote was used to cauterize open wounds and venomous bites. In the context of the Pasteurian revolution, most scientific literature of the second half of the nineteenth-century insists on the necessary use of coal-tar creosote to prevent epidemics and to stop bacterial infections before they spread (Radau 1874). Whilst miasmatical theory is still deeply anchored in the belief system of most European healthcare providers, the second half of the nineteenth-century saw medical professionals trying to tie in traditional pharmacopeia – which relied extensively on resins and tar water to treat dental infections and respiratory maladies – and Pasteurian knowledge of microbial activity and infections (Mazade 1870). In literary texts, the smell of coal-tar creosote systematically appears during dental or surgical procedures, only adding to the sensory distress of patients already in dire need of anaesthesia. In the hands of the dentist Winnicox, Marcel Schwob's cavity treatment is more akin to an elaborate form of torture than an actual medical procedure. The dentist uses a thick paste made with coal-tar creosote to

cauterize the damaged dental nerve while the ‘pestilential’ scent of the mixture blends with blood, pus, saliva, and tooth debris to highlight the ‘mephitic’ nature of this medical procedure (Schwob 1891, 121-129).

Creosote’s antiseptic properties were also particularly useful in the treatment of respiratory diseases, especially tuberculosis (Coste de Lagrave 1901, 57-87). Treatments made with coal-tar creosote were prescribed in the form of pills, enemas or subcutaneous injections, but fell out of practice because of their foul smell and taste, as well as their many adverse side-effects, often leading to poisoning (Schnirer 1899, 3; Corgier 1899, 12-13). By the end of the nineteenth-century, better chemical knowledge of coal-tar creosote’s active compounds allowed for the manufacturing of safer treatments (Kinnicutt 1892), often sold over-the-counter in the form of candied pastilles.

These readily-available products were widely successful in Europe thanks to conspicuous visual advertising and modern marketing strategies promoting the use of medicinal aromatics, such as wood-tar water, tolu balsam or benzoin (Mica 1888), over synthetic drugs.

Creosote’s ability to preserve and lengthen the life of most organic materials was essential to the industrial development of western Europe, which relied on the durability of telegraphic poles and railways sleepers to ensure better cross-country communications and faster transportation of people, merchandise, and materials. Selected timber was injected with coal-tar creosote or copper sulphate before being processed industrially (Figuier 1867, 350; Clavé 1867). In *The Sign of Four* (1890), the overwhelming use of creosote in industrial London causes the dog Toby to lose track of the main culprit:

‘He acted according to his lights,’ said Holmes, lifting him down from the barrel and walking him out of the timber-yard. ‘If you consider how much creosote is carted about London in one day, it is no great wonder that our trail should have been crossed. It is much used now, especially for the seasoning of wood. Poor Toby is not to blame.’ (Doyle 1917, 76)

Usually mentioned as phenic acid or carbolic acid in the scientific literature of the time, coal-tar creosote was also used to preserve various organic materials (meats, pelts, bones, fertilizer, etc.) against putrefaction, especially during long hauled transport between overseas colonies and the metropolis (Radau 1874; Malepeyre 1836, 118). The association between the scent of creosote and

seemingly unnatural preservation practices was therefore linked to ‘fountain of youth’ narratives: in H.G. Wells’ ‘Aepyornis Island’, the odorous waters of Madagascar’s peatlands are compared to the ‘tarry smell’ of creosote, highlighting both liquids’ ability to preserve flesh (Wells 2005, 117-118) against the damages of time.



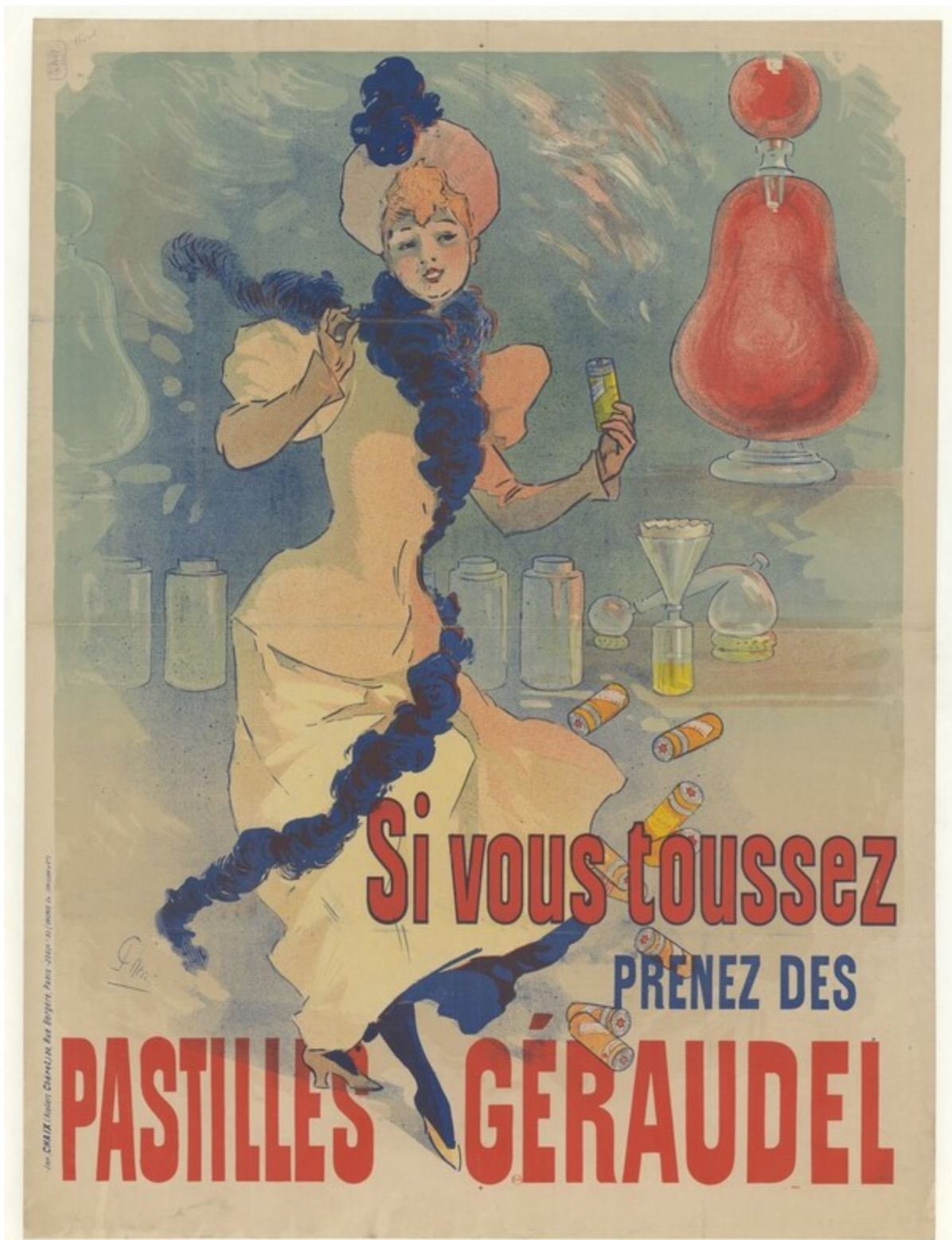
Figure 3. Stuyvesant van Veen, *The Operating Room*, 1931, etching, 25 × 20 cm. © Wellcome Collection.

Feelings and Noses

The pungent nature of creosote often triggers various involuntary memories, usually linked to invasive medical procedures and feelings of pain, fear, and general sensory distress. As such, the intense pain Des Esseintes suffered during his dental procedure marks his memory in the most irrevocable manner, to the point that a bare whiff of creosote re-ignites the pain and fear of the tooth extraction as if it were happening again:

He stamped his feet frantically and bleated like a sheep about to be slaughtered. A snapping sound was heard, the molar had broken while being extracted. It seemed that his head was being shattered, that his skull was being smashed; he lost his senses, howled as loudly as he could, furiously defending himself from the man who rushed at him anew as if he wished to implant his whole arm in the depths of his bowels, brusquely recoiled a step and, lifting the tooth attached to the jaw, brutally let him fall back into the chair. Breathing heavily, his form filling the window, he brandished at the end of his forceps, a blue tooth with blood at one end. (Huysmans 1922, 88)

Huysmans depicts the procedure as extremely invasive and painful, but also as particularly unpleasant to the senses, as the fully conscious character can hear the cries of other patients, feel bones and teeth shatter, and experience the metallic taste of blood and surgical instruments. In this particular context, the repulsive scent and taste of wood-tar creosote only heightens the sensory distress of patients being operated on without proper anaesthesia.



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Figure 4, Jules Chéret, Si vous tousssez, prenez des pastilles Géraudel, 1893, Litograph, 100 × 75 cm, [ark:/12148/btv1b53015835r](https://nla.gov.au/ark:/12148/btv1b53015835r) © Bibliothèque nationale de France, Gallica

Thus, it's no surprise that the heavy use of wood-tar creosote in healthcare settings would only lead to its scent being associated with feeling of repulsion and disgust. In his collections of literary anecdotes, Léon Daudet relates Ferdinand Brunetière's meals. A successful southerner and editor-in-chief of the very conservative *Revue des Deux Mondes*, Brunetière regularly ingests 'tiered cakes, papery jelly, and creosote-tasting salmis' as he tirelessly lecture his secretaries and journalists into submission ([Daudet 1920, 431-432](#)). Brunetière's ability to devour those unappetizing courses allows Daudet to ridicule his superior's colourful character, in line with late nineteenth-century France rampant antimeridionalism ([Cabanel and Vallez 2005](#)). Both the tolerance for repulsive scents and the enjoyment of disgusting meals are framed as signifiers of sub-humanity, therefore justifying the othering and abuse of those whose sensory practices are deemed excessive or unpleasant. As the scent of creosote pertains to a visceral and dehumanizing feeling of disgust, it's no surprise it was used to name the infamous vomiting glutton of *Monty Python's The Meaning of Life* (1983): Mr. Creosote.

Still, the use of creosote as a preservative for timber products can also evoke fond childhood memories, as presented in Marcel Schwob's autobiographical anecdotes, in which he recalls an English edition of one of R. L. Stevenson's novels, brought home by his governess to teach the young boy how to read. The pages' 'penetrating [...] acrid scent of creosote and fresh ink' is depicted as a long-lasting feature of 'newly-printed English books', and a pleasurable part of Schwob's nostalgic reading practices:

But its smell thrills me still, giving me a glimpse of a brand-new world, and a hunger for intelligence. Even now, I do not receive a new book from England without dipping my face in-between its pages up to the spine to inhale London's fog and smoke, and absorb all that remains of the joys of my childhood. ([Schwob 1921, 323-324](#))

The scent of creosote impregnating the book's pages is tied to sensory representations of foggy industrial London and childhood woes treated with creosote candies. For Schwob, the nostalgic experience of spending a sick day reading in bed trumps the apparent unpleasantness of London weather and creosote treatments.



Figure 5. Jules Denneulin, *Le forgeron dentiste*, 1835-1904, Watercolor, 27.2 × 21 cm, © RMN-Grand Palais / Jacques Quecq d'Henripret.

Creosote's use in medical settings also meant its scent, even when unpleasant, was associated with healthiness and, sometimes, a false sense of sanitary safety. In *Champs magnétiques* (1919), Philippe Soupault and André Breton mention the scent of creosote itself as being 'healthy' ([Breton and Soupault 1919, 8](#)). This reputation and the omnipresence of creosote in most over-the-counter remedies lead to people questioning its efficacy. In his 'Notes sur la Côte-d'Azur',

Alphonse Allais stages a dialog between a spirited sea-captain and a man suffering from tuberculosis:

A pitiful gentleman suffering from tuberculosis was gobbling up several creosote pills. Cap suddenly interrogates him.

Sir, how effective do you believe that creosote to be against tuberculosis' bacillus?

Damn, it must annoy them at least a little.

Annoy them! Really? It's obvious you know nothing about microbes... It only makes them shrug.

(Allais 1895, 319-320)

Perceived as a fool's drug, creosote candies are especially represented as quackery since large doses of guaiacol are necessary to offset the symptoms of tuberculosis (Corgier 1899,17).

In the context of political unrest, the smell of creosote alludes to the political value of disinfection and deodorizing practices (Hsu 2020, 13, 115-116); the scent of industrial disinfectant becomes synonymous with the exercise of power. In Claude Simon's *L'Acacia* (1989), the portrait of the father, a military officer during World War I, serves as a metonymic representation of the French army. Behind a polished and sophisticated exterior, both hide a 'rigid, if not brutal [nature], filled with the pungent stench of creosote, dung, sweat, weapon grease, and latrines floating between the lined-up, white-washed barracks' (Simon 1989, 76). In Georges Duhamel's *La Nuit de la Saint-Jean* (1935), the narrator mentions creosote being used to disinfect the streets of Paris in preparation for the official visit of the young Spanish king, Alfonso the 3rd, in 1905. The city's atmosphere is described as smelling like 'wood pavements, creosote, washed manure, well-tended horses, leather, and burned motor oil', thus highlight the staging efforts made by the state to present the city's streets as controlled and ordered spaces (Duhamel 1948, 30). In light of the anarchist's bombing of the royal and presidential parade during this event, the particular zeal shown in the disinfecting of Paris during Alfonso the 3rd official visit can be interpreted as an attempt to control an environment prone to political unrest.

The medical use of creosote made it an essential feature of the sensorium of care between the mid-nineteenth-century and the mid-twentieth-century, as patients were the first and foremost 'sniffers' of creosote. In Huysmans' *The*

Vatard Sisters (1879), the young Désirée is desperate to get her cavities treated, despite having to suffer the enduring olfactory assault of creosote:

Désirée's teeth were bothering her and she held her head in a suffering manner against her shoulder while folding pages. She was thinking about the last visit she had made to the dentist on the Avenue du Maine. All her stumps were full of cavities. [...] For more than a month her jaw had smelled of creosote. (Huysmans 1983, 48)

The pungent scent of creosote is usually depicted as an extra source of discomfort for dental patients, prolonging their suffering long after the dental procedures are over.

In the treatment of respiratory illnesses, and especially severe pathologies such as pneumonia or tuberculosis, the smell of creosote is only a small part of a particular system of care which seems to favour remedies for their repulsive sensory qualities rather than their efficacy:

She resigned herself to creosote syrup, arsenic shots, and cod liver oil. She swallowed raw eggs in wine, which finished off her stomach where creosote had already done some damage. And it was all for nothing: she kept losing weight and getting weaker. (Van Der Meersch 1935, 399)

Ailing bodies are the main 'victims' of creosote, as caretakers, whether they are medical professionals or not, are comparatively more passive witnesses its scent and effects. Accounts from the standpoint of medical professionals, chemists or journalists pale in comparison to those of patients, either fictional or not. In 1908, a tone-deaf Paul Vibert advocates for the creosote-filled atmosphere of the underground *Métropolitain*, which, in his opinion, is particularly advantageous to its workers compared to the coal-filled air slowly damaging the lungs of miners (Vibert 1908, 113).

Industry workers all-around were, in fact, submitted to the smell of creosote during their working life, but also during their retirement or convalescence, as tuberculosis was more significantly more common amongst the working classes. In Bonneff's *Didier un homme du peuple* (1914), Didier François, a worker on the *Métropolitain* construction sites, is forced to leave his post due to tuberculosis. His treatment consists of a 'foul-smelling regimen of cod liver oil and creosote' while his wife is forced to temporarily leave her job to take care of him (Bonneff

1914, 288-289). Once Didier starts to feel slightly better, he is offered a less strenuous job, which is not enough to keep tuberculosis at bay:

Illness accommodates every social condition, every way of life. There is no disease more accommodating than tuberculosis: it does not force you to stop working immediately, it allows for long breaks. At first, tuberculosis does not cause suffering: it knows very well the poor have no time to rest. (Bonneff 1914, 289-290)

In the end, it seems creosote's action against tuberculosis is, for the most part, limited, as long as working conditions are not significantly improved and universal social security provided to workers. Whilst creosote has mainly disappeared from the sensorium of most Europeans by the early years of twenty-first-century, the medical craze it initiated and the visceral reactions its scent once triggered can be read as traces of a transitional period of sensory history, when petrol by-products and their smells became parts of everyday life as a consequence of industrialization. As tarry, petrol-like, or smoky smells are now associated with holiday car rides, summer barbecues, or nostalgic fireplaces, and as we have become desensitized to exhaust fumes and disinfectant smells, the history of creosote shows how the biological habituation processes of our sense of smell has contributed to the way we perceive and represent scents that were once deemed unacceptable.

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TAGS

Balsams  Bathrooms  Beech  Benzoin  Birch 
burnt wood  Butcher shops  Care-takers  Coal 
Coal-mines  Dental offices  deodorization  Disgust
 Disinfection  Distilleries  Doctor's offices 
excrement  factories  Factory workers  Fear 
Guaiacol  Healthiness  hospitals  Hydrocarbons 

Laboratories ■ Leather ■ London ■ Meat-preserving ■
Medical professionals ■ Military barracks ■ Morgues ■
Naphthalene ■ Nostalgia ■ Oil paint ■ Pain ■
Para-cresol ■ Paris ■ Patients ■ Peat ■ Petrol ■
Phenol ■ Pines ■ Power ■ Prisoners ■ Prisons ■
Railway workers ■ Safety (false sense of) ■
Sewage treatment plants ■ Ships' hold ■ Slaughterhouses
■ Smoke ■ Soldiers ■ Stables ■ Surgical rooms ■
Tanneries ■ tar ■ Tolu ■
Treatment of respiratory illnesses ■ Whisky ■
Wood resins ■ Wood-preserving ■ Working class

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