

# “Divine Stramonium”: The Rise and Fall of Smoking for Asthma

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## Introduction

On the evening of Saturday 31 August 1901, the celebrated French novelist Marcel Proust wrote to his mother with characteristic intimacy, recounting his struggle to quell a severe attack of asthma the previous day. Having suffered from periodic attacks of asthma since the age of nine, Proust was familiar with the range of contemporary treatments for the condition: over the years, he had been prescribed opium, caffeine, iodine, and morphine (which had once been injected by his father, Dr Adrien Proust), his nose had been cauterized numerous times, he had adopted a milk diet, and he had occasionally attempted to relieve both his asthma and his hay fever by visiting health resorts, such as Evian-les-Bains, on the shores of Lake Geneva. However, as his note to his mother suggests, Proust’s favoured remedy involved the inhalation of smoke from anti-asthma cigarettes or powders:

*Ma chère petite Maman,*

‘Misery of miseries or mystery of mysteries?’ That is the title of a chapter in one of Dumas’s novels, which would apply very well to me at the moment. Yesterday after I wrote to you I had an attack of asthma and incessant running at the nose, which obliged me to walk all doubled up and light anti-asthma cigarettes at every tobacconist’s I passed, etc. And what’s worse, I haven’t been able to go to bed till midnight, after endless fumigations, and it’s three or four hours after a real summer attack, an unheard of thing for me.<sup>1</sup>

Proust was not alone in attempting to relieve his asthma with medicated cigarettes or combustible powders. Throughout the late nineteenth and early twentieth centuries, the inhalation of fumes from burning preparations of stramonium, lobelia, tobacco, and potash became increasingly popular amongst asthmatics and their physicians throughout the world. Of course, a growing clinical reliance on anti-asthma smoking remedies of this nature did not occur in a social or cultural vacuum. The preference for inhaling smoke from stramonium and other substances coincided precisely both with the gradual increase in smoking cannabis and opium for recreational and medical purposes and with

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<sup>1</sup>George D Painter (ed.), *Marcel Proust: letters to his mother*, London, Rider, 1956, pp. 124–7.

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the rising popularity of smoking tobacco, initially in pipes and cigars and, after the introduction of mass production techniques in the 1880s, in the form of cigarettes. As Matthew Hilton has argued, although tobacco had been introduced into Britain from Amerindian cultures in the sixteenth century, it was from the late nineteenth century through to the middle decades of the twentieth century that smoking occupied an increasingly important space “at the heart of British popular culture”: “By the mid-twentieth century, four-fifths of adult men and two-fifths of adult women were smoking, a figure which works out at 7 lb of tobacco per adult (aged over fifteen, smoking and non-smoking) per year.”<sup>2</sup>

A number of excellent historical studies have recently explored in detail the rapid expansion of the tobacco industry during those years, the increasing dependency of modern populations on tobacco products, the contested and politicized debates about smoking and disease, and the efforts of modern governments and anti-smoking pressure groups both to regulate the sale and advertising of tobacco and to compensate smokers and their families for tobacco-induced cancers. In the British context, the pioneering work of Jordan Goodman and Matthew Hilton has been reinforced and extended by a collection of papers on smoking and health edited by Stephen Lock, Lois Reynolds and E M Tansey, by Rosemary Elliot’s study of patterns of smoking amongst women since 1890, and by Virginia Berridge’s close analysis of changing perceptions of smoking within the context of scientific debates about the links between smoking and cancer and shifting discourses of public health during the last half of the twentieth century.<sup>3</sup> From a North American perspective, Allan Brandt’s monumental study, *The cigarette century*, draws heavily on a wide range of tobacco industry archives, recently made available as the result of litigation, to expose the strategies adopted by the tobacco industry to protect their commercial interests by rejecting or delaying the acceptance of scientific evidence that had established the harm induced by tobacco products.<sup>4</sup>

Not surprisingly, these recent histories of smoking have been preoccupied with the manner in which the cigarette has “deeply penetrated” modern cultures,<sup>5</sup> resulting in the rising prevalence of, and mortality from, a range of smoking-related illnesses, including many cancers, cardiovascular disease, chronic bronchitis and emphysema. The outcome has been a series of provocative scholarly studies with direct relevance to on-going debates about health education, health promotion, and the political economy

<sup>2</sup> Matthew Hilton, *Smoking in British popular culture 1800–2000*, Manchester University Press, 2000, pp. 1–2. For a broad discussion of the early history of tobacco consumption, see also Jordan Goodman, *Tobacco in history: the cultures of dependence*, London, Routledge, 1993. For accounts of smoking opium and cannabis, particularly during the nineteenth century, see Virginia Berridge, *Opium and the people: opiate use and drug control policy in nineteenth and early twentieth century England*, London, Free Association Books, 1999; James H Mills, *Cannabis Britannica: empire, trade, and prohibition*, Oxford University Press, 2003; Louise Foxcroft, *The making of addiction: the ‘use and*

*abuse’ of opium in nineteenth-century Britain*, Aldershot, Ashgate, 2007.

<sup>3</sup> Stephen Lock, Lois Reynolds and E M Tansey (eds), *Ashes to ashes: the history of smoking and health*, Amsterdam, Rodopi, 1998; Rosemary Elliot, *Women and smoking since 1890*, New York and London, Routledge, 2008; Virginia Berridge, *Marketing health: smoking and the discourse of public health in Britain, 1945–2000*, Oxford University Press, 2007.

<sup>4</sup> Allan M Brandt, *The cigarette century: the rise, fall and deadly persistence of the product that defined America*, New York, Basic Books, 2007.

<sup>5</sup> *Ibid.*, p. 3.

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of global industrial regulation. Yet, it is interesting to reflect that until the twentieth century doctors “paid little attention to smoking as a health hazard”,<sup>6</sup> preferring instead to emphasize the perceived health benefits of tobacco and other inhaled substances, and that medicated cigarettes marketed for respiratory complaints continued to be endorsed, and smoked, by doctors until well after the Second World War.

In spite of a rich historical literature on the consumption and regulation of tobacco, opium and cannabis on both sides of the Atlantic, and apart from occasional references to the role of smoking in reducing stress and facilitating relaxation, there has been little historical interest in the therapeutic applications of smoking.<sup>7</sup> The principal aim of this article is to explore the history of smoking as a remedial or curative technique intended to facilitate the delivery of drugs to diseased lungs. Focusing on the treatment of asthma, it situates the rise and fall of therapeutic smoking not only within the context of shifting cultural and clinical perceptions of smoking tobacco, opium, and cannabis, but also within the context of changing medical theories of asthma and fluctuating commercial interest in inhalational treatments for respiratory disease. The first section explores pre-modern approaches to inhalational treatments for asthma, tracing developments from ancient Eastern and Western emphases on inhaling smoke from therapeutic plants through to late-eighteenth-century debates about the relative merits of inhaled and systemic drug administration in asthma. In the first decade of the nineteenth century, the practice of smoking stramonium was introduced into Britain and other European countries from India, prompting a resurgence of interest in inhalational treatments. The second section analyses the gradual proliferation of medical and public support for the smoking cure for asthma, leading to its prominent position in the arsenal of available remedies for asthmatics such as Marcel Proust. The final section examines the ways in which changing theories of asthma, developments in the pharmaceutical industry, the incremental prescription of dangerous drugs, and a growing recognition of the health impacts of smoking gradually served to undermine the use of anti-asthma cigarettes and powders.

### **Inhalational Treatments for Asthma prior to the Nineteenth Century**

As a number of brief histories of inhaler technologies have indicated, most ancient cultures recommended inhaling smoke from burning certain plants for both therapeutic and recreational purposes.<sup>8</sup> In South America, for example, the smoke generated from

<sup>6</sup> Berridge, *op. cit.*, note 3 above, p. 12.

<sup>7</sup> Some detailed histories of smoking do refer, but only in passing, to the role of smoking in reducing stress, see Berridge, *op. cit.*, note 3 above, p. 12. The broader health effects of tobacco are explored in R B Walker, ‘Medical aspects of tobacco smoking and the anti-tobacco movement in Britain in the nineteenth century’, *Med. Hist.*, 1980, **24**: 391–402. Historical studies of opium also include some discussion of the variable impact on health of smoking those substances: Berridge, *op. cit.*, note 2 above, pp. 195–205; Foxcroft, *op. cit.*, note 2 above, pp. 72–4.

<sup>8</sup> Jay Grossman, ‘The evolution of inhaler technology’, *Journal of Asthma*, 1994, **31**: 55–64; Noel Snell, ‘Inhalation devices: a brief history’, *Respiratory Disease in Practice*, summer 1995: 13–15; Jean-François Dessanges, ‘A history of nebulization’, *Journal of Aerosol Medicine*, 2001, **14**: 65–71; Paula J Anderson, ‘History of aerosol therapy: liquid nebulization to MDIs to DPIs’, *Respiratory Care*, 2005, **50**: 1139–50; Mark Sanders, ‘Inhalation therapy: an historical review’, *Primary Care Respiratory Journal*, 2007, **16**: 71–81.

narcotic agents, such as opium, henbane and thorn-apple, was inhaled for its hallucinogenic properties, and tobacco smoke was regularly employed as a diagnostic and therapeutic agent in shamanistic healing rituals.<sup>9</sup> In ancient India, inhaled smoke acquired similar medical and ritualistic significance. As P Ram Manohar has suggested, within the Indian context exposure to smoke incorporated a variety of practices and purposes: *homa*, a religious fire offering intended to improve the general environment; *dhūpa*, a form of fumigation carried out to protect people from both cold and demons; and *dhūma*, the predominantly therapeutic inhalation of smoke from a pipe, recommended by traditional Āyurvedic practitioners. Although smoking was known occasionally to trigger respiratory distress, inhaling smoke from herbal mixtures through a pipe was advocated for the treatment of asthma and coughs, along with a variety of other respiratory conditions.<sup>10</sup>

Therapeutic smoking was also adopted elsewhere in the ancient world. Although there remains some dispute as to whether ancient Egyptian doctors recognized a form of breathing difficulty directly comparable with asthma, it is clear that the Ebers Papyrus, compiled in approximately 1550 BC, did list remedies designed to remove phlegm, alleviate catarrh and coughs, and ease breathing. Egyptian treatments for respiratory distress included not only the oral consumption of a variety of concocted vegetable, mineral and animal products, but also the delivery of active substances, such as henbane and bitumen, directly to the lungs by inhalation: “Thou shalt fetch 7 stones and heat them by the fire, thou shalt take one thereof and place (a little) of these remedies on it and cover it with a new vessel whose bottom is perforated and place a stalk of a reed in this hole; thou shalt put thy mouth to this stalk, so that thou inhalest the smoke of it.”<sup>11</sup>

Inhalation was also recommended many centuries later by Greek and Roman physicians, including Hippocrates, Dioscorides and Galen, for whom asthma constituted a relatively discrete and moderately severe form of dyspnoea, or breathing difficulty, accompanied by a wheeze and cough. Ancient Greek remedies for asthma focused largely on promoting a healthy lifestyle, supplemented when necessary by blood-letting and evacuations, in order to restore humoral balance and to prevent or remove the accumulation of phlegm in the lungs. However, they also included herbal preparations and resinous gums administered either in the form of a linctus or syrup or via an inhalational device, which comprised a pot with a reed in the lid, similar to the apparatus used by ancient Indian practitioners.<sup>12</sup>

Ancient modes of treatment were tailored to dominant models of disease. Most ancient medical systems, whether developed in the East or the West, understood asthma to be the product of excess phlegm accumulating in, and obstructing, the lungs of those with cold,

<sup>9</sup> Goodman, op. cit., note 2 above, pp. 19–36.

<sup>10</sup> P Ram Manohar, ‘Smoking and Ayurvedic medicine in India’, in Sander L Gilman and Zhou Xun (eds), *Smoke: a global history of smoking*, London, Reaktion Books, 2004, pp. 68–75.

<sup>11</sup> B Ebbell (tr.), *The Papyrus Ebers: the greatest Egyptian medical document*, Copenhagen, Levin and Munksgaard, 1937, p. 67.

<sup>12</sup> Snell, op. cit., note 8 above; Robert Bree, *A practical inquiry on disordered respiration; distinguishing convulsive asthma, its specific causes, and proper indications of cure*, Birmingham, M Swinney, 1797, p. 375.

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moist constitutions: it was for this reason that asthma was often considered to be more common in children and women. Within this conceptual framework, the inhalation of smoke and fumes was intended to relieve the obstruction by heating and drying the phlegm and aiding expectoration.<sup>13</sup> In the western medical tradition, this approach to the pathogenesis and treatment of asthma persisted throughout the middle ages. Relying heavily on the works of Hippocrates and Galen, medieval Islamic and Arabic scholars, such as al-Rāzī, Yuhannā ibn Sarabī ūn and Ibn Sīnā, continued to advocate inhalation as a means of loosening “thick and phlegmatic humor” in the lungs.<sup>14</sup> In his *Kitāb al-Qānūn fī al-ṭibb* or *Canon of medicine*, for example, Ibn Sīnā recommended inhaling fumes from both arsenic and sulphur.<sup>15</sup>

Inhalations were also recommended by the Jewish scholar Rabbi Moses ben Maimon (Maimonides), who wrote the first extensive treatise on asthma in the late twelfth century. Drawing predominantly on ancient Greek preoccupations with redressing humoral imbalance, Maimonides advocated adopting a suitable lifestyle: “a good regimen”, he argued, “prolongs the interval between the cycles, diminishes the occurrences [of attacks] in a cycle, alleviates the suffering and pain which they cause, and makes it easier to bear them.”<sup>16</sup> While Maimonides thus encouraged physicians and patients to pay close attention to the six non-naturals (food and drink, environment, exercise, sleep, evacuations, and emotions) and to the frequency of sexual intercourse, he also acknowledged the role of “fumigations” in relieving asthmatic paroxysms: “As for the time of the attack, [physicians] in our time have mentioned fumigations which strengthen the brain and dry its superfluous moistures and prevent them from streaming. One of these is aloe [*aloe vera*]; they have said to cast it onto a fire so that its vapor enters the nostrils and the mouth, for it is a tried and true remedy.”<sup>17</sup>

Transmitted through medieval Arabic, Islamic and Jewish scholarship, the writings of Hippocrates and Galen continued to exert an influence on the clinical management of asthma. However, it is clear that theories of asthma began to change during the Renaissance and early modern periods and that ancient approaches to treatment, including the inhalation of smoke, were increasingly challenged. This move away from ancient remedies is evident in accounts of the treatment devised by the Italian physician and mathematician, Girolamo Cardano, who in 1551 was invited to Scotland to attend John Hamilton, the Roman Catholic archbishop of St Andrews, whose asthma had persisted in spite of the close attention of his physician. Cardano, who was familiar with Maimonides’s treatise, suggested that Hamilton’s asthma was the product not only of a life of luxury, venery and excessive work, but also of his physician’s misguided attempts to treat him in hot, smoky rooms. The successful regimen devised by Cardano involved applying specific remedies aimed at purging and

<sup>13</sup> For more detailed discussion, see Mark Jackson, *Asthma: the biography*, Oxford University Press, 2009.

<sup>14</sup> For an English version of Ibn Sarabī ūn’s work, see Luke Demaitre, ‘Straws in the wind: Latin writings on asthma between Galen and Cardano’, *Allergy and Asthma Proceedings*, 2002, 23: 59–93.

<sup>15</sup> Ibid.

<sup>16</sup> Gerrit Bos (ed.), *Maimonides: On asthma*, Provo, Utah, Brigham Young University Press, 2002, p. 5.

<sup>17</sup> Ibid., p. 73.

cooling, rather than heating, the body and pursuing a moderate, restrained and restful lifestyle.<sup>18</sup>

During the seventeenth century, western resistance to the therapeutic use of smoke intensified, as innovative mechanical and chemical approaches to disease served gradually to displace ancient humoral theories. Neither the Flemish nobleman and physician John Baptista van Helmont nor the English doctor Thomas Willis mentioned the use of smoking in their accounts of asthma, even though both writers acknowledged that the accumulation of phlegm in the lungs constituted a pivotal feature of the disease in many patients.<sup>19</sup> More critically, although the consumption of tobacco became increasingly popular across Europe and was often recommended as a panacea, capable of relieving or curing a wide range of illnesses,<sup>20</sup> some authors deliberately criticized the inhalation of tobacco smoke in asthma. In *A treatise of the asthma*, first published in 1698, John Floyer dismissed both the iatrochemical speculations of writers such as van Helmont and Willis and the approaches adopted by empirics. He argued instead, largely along humoral lines, that asthma was primarily a systemic condition in which the balance of all bodily fluids (blood, chyle, lymph and serum) was disturbed and the membranes of the stomach, lungs and head were “inflated” or rigidly expanded, leading to a range of abdominal symptoms, headaches and drowsiness as well as breathlessness.<sup>21</sup> Accordingly, Floyer preferred ancient Hippocratic and medieval approaches to treatment, particularly the liberal use of “oxymel of squills” combined with a suitable regimen, to reduce and prevent attacks. While Floyer noted that “Syrup of Tobacco” had been recommended by van Helmont, he categorically rejected the use of smoke: “All fumes of Tobacco, Amber, or Arsenic, are suffocating.”<sup>22</sup>

Although Floyer’s treatise was translated into French and German and went through several highly popular and influential English editions, his views on asthma were sometimes rejected as impenetrable and idiosyncratic.<sup>23</sup> During the Enlightenment, clinical accounts of asthma focused increasingly on the lungs and tended to refine the differentiation that had originally been postulated by van Helmont and Willis between two distinct, but overlapping, presentations of the disease: “humoral” or “spitting” asthma, characterized by the accumulation of phlegm; and “nervous” or “convulsive” asthma marked by spasmodic contraction of the bronchi and minimal production of phlegm. For most late-eighteenth-century commentators, the latter form of the condition was the most prominent. According to William Buchan, William Cullen and Thomas Withers, asthma was caused primarily not by the accumulation of phlegm or mucus, but by an “affection of the nervous system”, leading to “spasmodic, constriction of the muscular fibres of the bronchiae”.<sup>24</sup>

<sup>18</sup> For more detailed discussion of Cardano’s approach, see Alan Wykes, *Doctor Cardano: physician extraordinary*, London, Muller, 1969; Charles L. Dana, ‘The story of a great consultation: Jerome Cardan goes to Edinburgh’, *Ann. Med. Hist.*, 1921, 13: 122–35; Jackson, op. cit., note 13 above.

<sup>19</sup> John Baptista van Helmont, *Oriatrike or, Physick refined*, London, 1662; Thomas Willis, *Pharmaceutice rationalis: or, The operations of medicines in humane bodies*, Part II, London, 1679.

<sup>20</sup> Walker, op. cit., note 7 above; Goodman, op. cit., note 2 above.

<sup>21</sup> John Floyer, *A treatise of the asthma*, London, Richard Wilkin, 1698.

<sup>22</sup> *Ibid.*, pp. 207, 226.

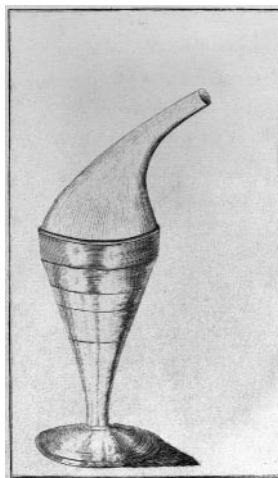
<sup>23</sup> See, for example, the comments in Thomas Withers, *A treatise on the asthma*, London, G G J and J Robinson, 1786, pp. vii–viii.

<sup>24</sup> William Cullen, *First lines of the practice of physic*, 4 vols, Edinburgh, 1784, vol. 3, pp. 390–410; William Buchan, *Domestic medicine*, London, 1776, pp. 441–5.

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To some extent, renewed attention to the local pulmonary causes of asthma reinvigorated clinical interest in inhaled therapies, although largely in the form of vapour rather than smoke. In 1774, the anonymous author of *Instant relief to the asthmatic* suggested that “inward applications” of medicines would be ineffectual because active ingredients would be “separated and subtilized by the body” before reaching the lungs. Relief from the asthmatic paroxysm was thus best achieved by the delivery of “*volatilized matter*, or aetherial essence” directly to the lungs. Inhaled vapours would divide “tough phlegm”, aid expectoration, and relax the airways which were “affected with morbid contractions”.<sup>25</sup> The popularity of inhalation for asthma and other respiratory complaints was boosted by the production of improved inhalers, particularly those invented and marketed during the 1760s and 1770s by the English physicians Philip Stern and John Mudge. As Stern argued in a pamphlet written in 1767 to advertise a “simple machine” (Figure 1) devised to deliver anti-spasmodic medicines, such as his own “Balsamic Aether”, directly to the seat of the disease, “the happiest effects may rationally be expected, from such a medicine thus applied, by means of the steam of hot water, directly to the injured lungs”.<sup>26</sup>

However, many clinicians remained sceptical of the claims made for inhalational therapies. At the end of the eighteenth century, for example, the potential benefits of inhaling medicinal vapours and smoke were disputed by the English physician Robert Bree, who, like Floyer, was plagued with chronic asthma. In *A practical inquiry into*



*Figure 1: A simple machine devised by Philip Stern in 1767 to deliver medicines to the lungs of patients with consumption and asthma. (Reproduced by kind permission of Wellcome Library, London.)*

<sup>25</sup> Anon., *Instant relief to the asthmatic, or those afflicted with shortness of breath*, London, 1774, pp. 22–3, 28–30.

<sup>26</sup> Philip Stern, *Medical advice to the consumptive and asthmatic people of England*, London, J Almon,

1767, p. 22. For a similar pamphlet advertising his own “inhaler”, see John Mudge, *A radical and expeditious cure for a recent catarrhus cough*, London, E Allen, 1778. On the inhalers themselves, see Sanders, op. cit., note 8 above.

*disordered respiration*, first published in 1797, Bree noted that historically many physicians, from Hippocrates onwards, had recommended inhaling vapours from frankincense, myrrh and various gums in order to treat both asthma and phthisis.<sup>27</sup> Bree was unconvinced. In some forms of asthma, he argued, moist inhalations only aggravated the symptoms, and the narcotic qualities of anti-spasmodic medication were more effective “taken into the stomach” rather than the lungs. More particularly, Bree criticized asthmatics who adopted the practice of “Smoking Tobacco”, which, by increasing, rather than decreasing, “serous secretion” in the bronchi, operated as a cause of asthma.<sup>28</sup> Although other medical writers, such as George Lipscomb, rejected Bree’s particular formulation of asthma, they tended to agree that fumigations were of limited value: “It is unnecessary to expatiate on the inutility of fumigations of all kinds”, wrote Lipscomb in 1800, “nor do I think it worth while to combat the *visionary* idea of *aerial* medicines being capable of subduing the violence of the paroxysm, *before* the serous effusion has been expectorated.”<sup>29</sup>

Prior to the nineteenth century, then, the inhalation of vapours and smoke occupied a variable place in the treatment of asthma in most western and eastern medical traditions. Its use in many ancient medical systems, including Āyurvedic, Egyptian and Greek medicine, stemmed from a dominant belief that asthma was the product of cold, moist phlegm accumulating in the lungs. While the persistence of humoral theories supported the continued use of inhalation throughout the medieval period, the application of smoke and vapours in order to remove phlegm increasingly fell into disrepute during the early modern period and Enlightenment as medical commentators began to emphasize the role of nervous bronchospasm in the pathogenesis of asthma attacks. In spite of occasional efforts to promote inhalation, most notably by the inventors and manufacturers of inhalers, by the end of the eighteenth century doubts about the efficacy and safety of inhaling medicated vapours or smoke from tobacco and other herbs served to relegate inhalational therapies to the margins of clinical practice. However, the introduction of stramonium from India in the early nineteenth century operated as a catalyst that refocused clinical attention on the therapeutic benefits of smoking for asthma.

### Smoking Stramonium for Asthma

The resurgence of interest, amongst British physicians, in smoking for asthma was a direct product of the empire. The East India Company, a joint-stock company formed in the late sixteenth century primarily to facilitate trade in cotton, silk, opium and other commodities, had by the late eighteenth century established administrative and military power over much of India. In 1802, Dr James Anderson, the Scottish-born physician-general in Madras whose prime interest was the cultivation of silk,<sup>30</sup> notified William Gent, a major-general in the Madras army, of an indigenous treatment for asthma. Gent relayed the details to an English

<sup>27</sup> Bree, op. cit., note 12 above, pp. 375–83.

<sup>28</sup> Ibid., pp. 377–8. For a comparable discussion of the role of fumes and smoke in triggering asthma attacks, see Withers, op. cit., note 23 above.

<sup>29</sup> George Lipscomb, *Observations on the history and cause of asthma*, Birmingham, James Belcher, 1800, p. 99.

<sup>30</sup> James Anderson, *The conclusion of letters on the culture of silk*, Madras, Joseph Martin, 1792; James Anderson, *Letters, &c.*, Madras, Bone and Cooper, 1796.



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physician, Dr Sims, who recommended the remedy to patients and colleagues and, convinced of its value, advertised its efficacy in the medical press:

Some time in the year 1802, I received from General Gent a remedy that he had not long before brought from Madras, which, the General informed me, was used there as a specific for relieving the paroxysm of asthma, and that it was prepared from the roots of the wild purple-flowered thorn-apple (*Datura ferox*). The roots had been cut into slips as soon as gathered, dried in the shade, and then beat into fibres resembling coarse hemp. The mode of using it was by smoking it in a pipe at the time of the paroxysm, either by itself or mixed with tobacco.<sup>31</sup>

Having exhausted his supply of Indian *Datura ferox*, one of the beneficiaries of this novel treatment, a surgeon in Hackney, turned for relief to the common thorn-apple, *Datura stramonium*, which was also a member of the solanaceae family of plants that included henbane, deadly nightshade and mandrake and which appeared to have similar anti-spasmodic properties. Although the leaves and seeds of the thorn-apple were known to have dangerous narcotic effects, leading to its being referred to as “the Devil’s Apple” or one of the “witches’ weeds”, patient testimonies suggested that preparations of the stalks and roots were effective in relieving asthmatic paroxysms:

You are perfectly at liberty to make every use of my name respecting the stramonium you think proper, and may add, that I continue to derive increased good effects from the use of it. In truth, the asthma is destroyed! I drink beer, eat of every thing; and if my mind was as free from perplexity as my body is from asthma, I should again enjoy my existence. I never experienced torpor or any ill effect whatever; and I would rather be without life than without stramonium.<sup>32</sup>

Stramonium was enthusiastically adopted by asthmatic patients and their physicians. In promoting its use as a pain-reliever in 1816, Alexander Marcet noted that *Datura stramonium* was often “cultivated in some English gardens” expressly for the purpose of treating asthma.<sup>33</sup> During the following decades, most medical authorities on asthma advocated smoking stramonium because of its anti-spasmodic properties. In 1819, the French clinician and pathologist René Théophile Hyacinthe Laennec included a discussion of asthma in his study of the clinical value of auscultation. Believing that asthma was more likely to be caused by spasmodic constriction of the bronchi than by the accumulation of mucus, Laennec recommended a variety of anti-spasmodics, including opium, belladonna, stramonium, tobacco, hyoscyamus and coffee.<sup>34</sup> In 1835, Francis Ramadge, physician to the Infirmary for Asthma, Consumption and other Diseases of the Chest in London, supported Laennec’s use of stramonium, noting that it also produced “a grateful forgetfulness and a balmy oblivion like opiates”.<sup>35</sup> Four years later,

<sup>31</sup> Anon., ‘Communications relative to the *Datura Stramonium*, or thorn-apple: as a cure or relief of asthma’, *Edinb. Med. Surg. J.*, 1812, 8: 364–7, at p. 365.

<sup>32</sup> *Ibid.*, 367.

<sup>33</sup> Alexander Marcet, ‘On the medicinal properties of stramonium; with illustrative cases’, *Medico-Chirurg. Trans.*, 1816, 7: 546–75.

<sup>34</sup> R T H Laennec, *A treatise on the diseases of the chest and on mediate auscultation*, 2nd ed., tr. John Forbes, London, T & G Underwood, 1827. The

French first edition appeared as R T H Laennec, *De l’auscultation médiate*, Paris, J-A Brosson and J-S Chaudé, 1819.

<sup>35</sup> F H Ramadge, *Asthma, its species and complications, or Researches into the pathology of disordered respiration*, London, 1835, quoted in Barry E Brenner, ‘Where have we been? The history of acute asthma’, in Barry E Brenner (ed.), *Emergency asthma*, New York, Marcel Dekker, 1999, pp. 1–31, at p. 7.

in an article in the *Lancet*, A T Thomson recognized the practical obstacles to relying on stramonium, but nevertheless argued that smoking stramonium offered one of the most effective contemporary remedies for asthma:

In some instances he had observed almost immediate relief obtained from smoking stramonium; but in cases such as that under consideration, in which the paroxysms returned early in the morning, and subsided in a few hours, the difficulty of obtaining the means of smoking it was one objection to its employment; at the same time he must confess it was one of the best means of shortening the asthmatic paroxysm, and abating the sufferings of the patient, with which we were acquainted, especially when the case has been of long standing, and the patient was of a nervous temperament.<sup>36</sup>

The growing popularity of smoking for asthma was endorsed by two of the leading nineteenth-century writers on the condition, the English physician Henry Hyde Salter, who was himself asthmatic, and the French physician Armand Trousseau. Salter's treatise on asthma, first published in 1860, was particularly successful. Considered a definitive text for many decades, it appeared in an American edition in 1864 and an expanded second British edition in 1868, establishing Salter's international reputation as an expert in the field. Like Trousseau, who regarded asthma as a "diathetic neurosis" closely associated with eczema and hives,<sup>37</sup> Salter subscribed to the nervous theory of asthma, arguing that asthmatic symptoms were caused primarily by "a spastic contraction of the fibre-cells of organic or unstriated muscle, which minute anatomy has demonstrated to exist in the bronchial tubes", rather than by catarrh or bronchitis. Salter's approach to treatment reflected this understanding of pathogenesis. In alleviating the paroxysms, he emphasized the importance of avoiding or removing any known "exciting cause", as well as advocating the use of depressants such as ipecacuanha, tobacco and antimony to suppress nervous irritation, stimulants such as strong black coffee, tea, ammonia, and hot alcohol to divert "morbid activity" from the lungs, and a range of sedatives, including tobacco, chloroform, stramonium and belladonna, to allay irritability.<sup>38</sup> Many of the substances discussed by Salter had dual actions: Indian hemp or *Cannabis sativa*, which was also becoming popular as a panacea in Britain following its introduction from India and which was regularly recommended in the form of a tincture for asthmatics, was both a stimulant and a sedative.<sup>39</sup>

Salter's discussion of the benefits of smoking stramonium was extensive. Although he recognized that stramonium did not always guarantee relief, partly on account of the "special caprice of asthma" and partly because of differences in the "mode of preparation and drying of the drug", he nevertheless acknowledged that its efficacy in some cases always made it worth trying. Significantly, its action was amplified if the stramonium were not merely smoked in a pipe (leading to absorption "by the oral surface only"),

<sup>36</sup> A T Thomson, 'Clinical remarks on a case of asthma', *Lancet*, 27 July 1839, ii: 645–9, at p. 647.

<sup>37</sup> Armand Trousseau, *Lectures on clinical medicine*, tr. P Victor Bazire, London, [1861], 1868.

<sup>38</sup> Henry Hyde Salter, *On asthma: its pathology and treatment*, London, John Churchill and Sons, 1860, pp. 161–204. See also *idem*, 'Spasmodic asthma', *Lancet*, 7 Jan. 1860, i: 12; *idem*, 'On the

treatment of the asthmatic paroxysm by full doses of alcohol', *Lancet*, 14 Nov. 1863, ii: 558–9; *idem*, 'On the treatment of asthma by belladonna', *Lancet*, 30 Jan. 1869, ii: 152–3.

<sup>39</sup> Salter, *On asthma*, op. cit., note 38 above, p. 203. On the medical uses of cannabis in this period, see Mills, op. cit., note 2 above.

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but if the saliva was swallowed and the smoke inhaled “as much as possible into the lungs”, which had the “advantage of being applied to the very parts affected”. According to Salter, stramonium was more effective as a preventative than a cure. Indeed, he advocated smoking a pipe each night before bed in order to “keep the disease at bay”: “The stramonium seems to leave for some hours a state of nervous system in which the asthma is not likely to come on; and, since the attack is almost always at night, the use of stramonium at bedtime conducts and guards the patient through the critical time.”<sup>40</sup>

The rising popularity of smoking stramonium for asthma during the middle decades of the nineteenth century can be traced to a variety of factors. In the first instance, it is evident that support for the therapeutic use of stramonium developed in tandem with medical accounts of asthma as the product of spasmodic bronchoconstriction. Articulated fully by William Cullen in the late eighteenth century, the spasmodic theory of asthma gained support during the early nineteenth century, not only from the clinical studies of Laennec but also from the work of the German physician Franz Daniel Reisseisen and others, who demonstrated the presence of circular muscle fibres around the bronchi. An emphasis on spasmodic constriction prioritized the application of anti-spasmodics, including stramonium and tobacco. Indeed, it is likely that both theory and practice were mutually reinforcing: while the spasmodic theory stipulated the use of anti-spasmodics, the apparent efficacy of stramonium legitimated theories that explained asthma in terms of nervous spasm rather than mucous obstruction.<sup>41</sup>

It is also possible that the initial popularity of stramonium was at least partly linked to its novelty. As Salter noted, smoking stramonium “soon obtained, as new remedies are apt to, the reputation of being specific and infallible;—everybody with any shortness of breathing [*sic*] was smoking stramonium”.<sup>42</sup> Although the limitations and dangers of smoking stramonium were rapidly recognized, its continued success amongst asthmatics and their physicians probably owed much to the absence of effective alternative remedies. Since antiquity, asthma had often been regarded as an incurable disease; as the personal accounts of many asthmatic physicians indicated, even persistent adherence to a suitable regimen fortified with specific herbal treatments offered only minimal relief from severe attacks of asthma and only partial prevention of relapses. According to the Devon surgeon, Thomas Pridham, many patients had consulted eminent physicians with little success and had become resigned to “a life of suffering”, as one patient put it, “as no known remedy would reach her disease”.<sup>43</sup> The promise, and reported delivery, of immediate relief for such patients who had previously been “grievously harassed by asthma” proved seductive.<sup>44</sup>

There were broader cultural and commercial determinants of the rising popularity of stramonium and other smoking remedies for asthma. In the first instance, smoking itself became an increasingly prominent leisure activity during the nineteenth century. As Matthew Hilton has argued, during that period, smoking tobacco constituted a habit or hobby that was promoted by bourgeois-liberal ideologies and became “central to

<sup>40</sup> Salter, *On asthma*, op. cit., note 38 above, pp. 198–201.

<sup>41</sup> See the discussion in Jackson, op. cit., note 13 above, ch. 2.

<sup>42</sup> Salter, *On asthma*, op. cit., note 38 above, p. 195.

<sup>43</sup> Thomas Pridham, ‘Observations on the treatment of asthma’, *Br. Med. J.*, 17 Nov. 1860, ii: 896–8.

<sup>44</sup> *Ibid.*

individual and group identity”: in Britain, smoking epitomized a vision of masculinity that resonated with wider commitments to economic independence and liberal notions of social superiority and individuality.<sup>45</sup> As many medical texts demonstrated, tobacco was also thought to possess therapeutic, as well as recreational, potential. Tinctures, clysters and injections of tobacco were recommended for the treatment of cholera, intestinal obstruction and dropsy, and the smoke from mild tobacco was thought to be effective in asthma, particularly in cases where asthmatic paroxysms were associated with hay fever.<sup>46</sup> Of course, the clinical use of tobacco was not without its critics. As participants in a vocal anti-tobacco movement, many medical commentators in the nineteenth century highlighted not only the moral, but also the clinical, dangers of tobacco, including the proliferation of heart disorders, insanity, tuberculosis, and impotence.<sup>47</sup> In addition, as Salter noted, the prevalence of tobacco smoking amongst adult men often rendered them less susceptible to the therapeutic effects of tobacco.<sup>48</sup> In spite of such anxieties about the impact of smoking on patterns of health and disease, however, a growing cultural dependence on tobacco consumption may well have promoted, or at least made acceptable, smoking as a cure for asthma.

Tobacco was not the only substance smoked for both pleasure and symptomatic relief during the middle decades of the nineteenth century. As recent studies by Virginia Berridge, Louise Foxcroft and Jim Mills have suggested, the practice of smoking opium and cannabis also spread rapidly during that period. In addition to their recreational use as hallucinogens and relaxants, cannabis and opium were recommended as sedatives and pain relievers, as stimulants of digestion, and as anti-asthma agents.<sup>49</sup> Although they were usually administered orally for medicinal purposes and although smoking cannabis and opium attracted considerable criticism amidst rising fears of addiction and degeneration, inhaling the smoke from both also generated discussion amongst clinicians and in the process reinvigorated longstanding debates about the relative efficacy of oral and inhaled drugs. In 1842, Dr J Johnson’s notes on a paper published in the *Lancet* by G H Smith suggested that “taking opium, by smoking or inhalation, induces the peculiar sedative effects of that drug more powerfully and more speedily than when taken into the stomach”.<sup>50</sup> Nearly thirty years later, the author of a pamphlet on opium similarly advocated the need to pay greater attention to this mode of administration: “It might be useful if the subject were investigated by medical men, to see if opium smoking might not be found a convenient way of administering the drug to patients who otherwise cannot take it without the stomach being upset.”<sup>51</sup> Although anxieties about the social implications of smoking cannabis and opium persisted, the rising popularity of smoking both drugs for health and pleasure, particularly amongst radical intellectuals such as Proust,<sup>52</sup> may well have encouraged the acceptability of smoking stramonium for asthma.

<sup>45</sup> Hilton, *op. cit.*, note 2 above, pp. 3–5.

<sup>46</sup> Walker, *op. cit.*, note 7 above; Salter, *On asthma*, *op. cit.*, note 38 above, pp. 166–76.

<sup>47</sup> Walker, *op. cit.*, note 7 above.

<sup>48</sup> Salter, *On asthma*, *op. cit.*, note 38 above, p. 176.

<sup>49</sup> Berridge, *op. cit.*, note 2 above; Foxcroft, *op. cit.*, note 2 above; and Mills, *op. cit.*, note 2 above.

<sup>50</sup> G H Smith, ‘On opium smoking among the Chinese’, *Lancet*, 19 Feb. 1841–2, i: 707–10, quote at p. 710.

<sup>51</sup> Anon., *What opium feels like. By one who has tried it*, (1870), John Burns Collection, Greater London Record Office. See also Berridge, *op. cit.*, note 2 above, p. 196; Foxcroft, *op. cit.* note 2 above, p. 73.

<sup>52</sup> Berridge, *op. cit.*, note 2 above, p. 204.

### *The Rise and Fall of Smoking for Asthma*

The smoking cure for asthma may also have been promoted by growing commercial and clinical interest in inhalers and inhalational treatments for a wide variety of respiratory disorders during the mid-nineteenth century. Echoing earlier support for inhalational therapies, in 1862 the North American physician Charles R Broadbent suggested that the delivery of a wide range of “medicated vapours” directly to the lungs offered the most effective remedy for consumption, laryngitis, chronic catarrh and other diseases of the air passages, including asthma:

It seems to us like the climax of folly to attempt to affect a disease in the lungs through the medium of the stomach, when by the simple and direct process of inhalation we can so readily gain access to the whole mucous surface and remotest air cells in the lungs, and bring all the active and medicinal properties of the remedy employed, at once upon the part diseased.<sup>53</sup>

Broadbent’s approach was facilitated by the development of inhalational anaesthesia, which had been first introduced in the 1840s, and by the production of new inhalers from the mid-1860s, both of which served to establish inhalation as a reputable form of drug delivery. During the 1860s, for example, novel apparatuses for inhaling both dry powders and vapours were successfully marketed for purchase by the general population: indeed, the ceramic Nelson inhaler, first reported in the *Lancet* in 1865 and supplied by S Maw and Sons in London, rapidly became (and remains) a well-recognized means of treating many respiratory conditions. The first steam spray inhalers, forerunners of the modern nebulizer, were also introduced during the 1860s and 1870s. As Mark Sanders has suggested, medical acceptance of these innovations was evident in the decision to formularize inhalation therapies in the 1867 edition of the *British Pharmacopoeia*.<sup>54</sup>

Inhalational therapies offered pharmacy suppliers and entrepreneurs on both sides of the Atlantic commercial opportunities to exploit contemporary fears about the prevalence of, and mortality from, respiratory conditions such as consumption, asthma, bronchitis, pneumonia, and influenza. During the closing decades of the nineteenth century, a variety of patent remedies were advertised in the press and distributed to the public. The most notable of these inhaled treatments was the Carbolic Smoke Ball, patented by Frederick Augustus Roe in 1889, which was recommended particularly for the treatment of influenza and which subsequently became the subject of an extensive law suit,<sup>55</sup> but many others, such as John Francis Churchill’s inhalant “Spirone” advertised in the *Chemist and Druggist* in 1890, flooded the market (Figure 2).

As the advertisements for both “Spirone” and the Carbolic Smoke Ball suggest, many of these devices and inhalants were intended to treat a wide range of respiratory diseases, including asthma. However, a number of inhaled remedies were targeted specifically at asthma, either in the form of powders, which were to be burned in pipes or bowls and the fumes inhaled, or increasingly in the form of cigarettes. Preparations such as Potter’s

<sup>53</sup> Charles R Broadbent, *A medical treatise on the causes and curability of consumption, laryngitis, chronic catarrh, and diseases of the air passages*, Boston, Damrell and Welch, 1862, p. 48.


<sup>54</sup> Sanders, *op. cit.*, note 8 above, p. 75.

<sup>55</sup> A W B Simpson, ‘Quackery and contract law: the case of the Carbolic Smoke Ball’, *Journal of*

*Legal Studies*, 1985, **14**: 345–89; Janice Dickin McGinnis, ‘*Carlill v. Carbolic Smoke Ball Company*: influenza, quackery, and unilateral contract’, *Can. Bull. Med. Hist.*, 1988, **5**: 121–41. The full Court of Appeal judgement is given in *Carlill v. Carbolic Smoke Ball Company*, 1893, 1 QB 256.

**DR. JOHN FRANCIS CHURCHILL'S INHALANT**

**TRADE MARK**



**“SPIRONE”**

**TRADE MARK.**

FOR THE TREATMENT AND CURE OF ALL

**DISEASES OF THE LUNGS, WINDPIPE, NOSE, AND THROAT,**

Claims to be a Specific for all Congestive and Inflammatory conditions of the Respiratory Apparatus, and will be found efficacious in

**COUGHS AND COLDS, ASTHMA, BRONCHITIS,**

Inflammation and Congestion of the Lungs, Pneumonia, Pleurisy, Whooping Cough, Croup, Diphtheria, Pharyngitis, Laryngitis, Catarrh, Sore Throat, Quinsy, Enlarged Tonsils, Hoarseness, Loss of Voice, Colds in the Head, Hay Fever, and all other Complaints of the Respiratory Organs.

**PREPARED ONLY BY THE INVENTOR.**

None Genuine except such as bears the above Trade Mark “SPIRONE” and the Signature of the Inventor upon the Bottle on the Label over the Cork, and on the Wrapper,

**JOHN FRANCIS CHURCHILL, M.D. (Paris),**  
*The Discoverer of the Specific Cure for Consumption, and of the Medicinal Properties of the Hypophosphites*

**Price 4s. 6d. and 11s. per Bottle.**

SET OF APPARATUS FOR ADMINISTRATION, 15/. PAMPHLETS AND SHOWCARDS FREE ON APPLICATION.

**THE SPIRONE COMPANY, Lim., Depot—17A Duke St., Manchester Square, LONDON, W.**

55

Figure 2: An advertisement for “Spirone”, 1890. (Reproduced by kind permission of the Wellcome Library, London.)

Asthma Cure, Himrod’s Cure for Asthma (endorsed by the famous ear, nose and throat specialist Morell Mackenzie), Asthmador Cigarettes, Dr J D Kellogg’s Asthma Remedy, and Espic, Legras and Escoufflaire powders, most of which contained stramonium either alone or in conjunction with tobacco, lobelia, potash and sometimes arsenic, were aggressively promoted in the medical and popular press and sold over the counter in most western countries (Figure 3).<sup>56</sup> Although such remedies were occasionally criticized because they were poisonous, because they were thought to increase bronchial irritation and inflammation, or because systemic administration was thought to be preferable,<sup>57</sup> by the end of the nineteenth century fumigations, inhalations and smoking were regularly recommended by doctors and employed by patients in order to relieve and prevent debilitating paroxysms of asthma.<sup>58</sup>

<sup>56</sup> For further examples of the range of medicated powders and cigarettes available, see Mark Sanders’ collection at <http://inhalatorium.com>; National Library of Medicine, *Breath of life*, Washington, 1998.

<sup>57</sup> On concerns about bronchial irritation and other side effects, see Sidney Martin, ‘A clinical lecture on asthma and its treatment’, *Br. Med. J.*, 24 Dec. 1898, ii: 1861–3; J B Berkart, *On bronchial asthma: its pathology and treatment*, London, Oxford University

Press, 1911, pp. 97–8. On the preference for oral tinctures of stramonium or belladonna, see C Theodore Williams, ‘The value of inhalations in the treatment of lung disease’, *Br. Med. J.*, 29 Sept. 1888, ii: 700–6.

<sup>58</sup> Walter Hayle Walshe, *A practical treatise on the diseases of the lungs*, London, James Walton, 1871, pp. 552–3; E Symes Thompson, ‘Notes of a lecture on hay-fever’, *Br. Med. J.*, 21 Jan. 1871, i: 58–60.

## Why Suffer from Asthma?

YOU know how exhausting asthma is. You know how prostrated you are by an attack. Year after year you have suffered in this way. The slightest thing brings on the dreaded paroxysms of coughing, and the perpetual fear of an attack coming on, makes life a misery. Not only is the attack painful and prostrating, but the loss of time during your absence from business is another serious item in the account, and that is why you would give anything for a remedy that would afford you prompt and certain relief and freedom from attacks. That is why you ought to know about "Potter's Asthma Cure," because it gives

### Relief—Instant Relief

in asthma. The use of "Potter's Asthma Cure" will enable you to breathe freely. The paroxysms of coughing will stop, and ease, comfort, and sweet, soothing relief will be yours. In every trouble of the breathing apparatus "Potter's Asthma Cure" is marvellously successful. In asthma, hay fever, bronchitis, and whooping-cough the relief it affords is truly delightful. It enables those who are racked and tortured by incessant coughing to gain restful and refreshing sleep. And the point is that

### It's so easy to use

"Potter's Asthma Cure." You can either put a little of "Potter's Asthma Cure" on a plate and ignite it and inhale the fumes, or you can use "Potter's Patent Inhaler," which is far more convenient, and costs but one shilling. In either case the virtues are brought directly into contact with the breathing organs, and immediately "Potter's Asthma Cure" is used you are conscious of a feeling of soothing, calming relief, which is most grateful. Until you have tried "Potter's Asthma Cure" you cannot realise what it will do for you. Possibly you have tried some other so-called cure and been disappointed. "Potter's Asthma Cure" never disappoints, but



gives ease, comfort, and relief. "Potter's Asthma Cure" is

### Almost Magical

in the results it produces, whilst it is at the same time quite safe. It is entirely free from opium, and does not cause headache, as is the case with other so-called remedies. Furthermore, "Potter's Asthma Cure" has no injurious effects on the general health, so that there is no room for hesitation about using it. Why be tortured and prostrated by asthma and its agonies when you can gain sweet and immediate

relief by using "Potter's Asthma Cure"?

### Potter's Asthma Smoking Mixture

is purely herbal in its composition, and it may be smoked in a pipe either with or without ordinary tobacco. All that has to be done to prevent the paroxysms of asthma is to draw the smoke well into the lungs and bronchial passages, and relief will immediately be obtained. For asthmatic subjects who are compelled to be out of doors, "Potter's Asthma Smoking Mixture" possesses very great advantages, which we have found have been greatly appreciated by the public.

### Potter's Asthma Cure Cigarettes

are in every way as convenient and efficacious as the Smoking Mixture. They enable those whose business calls them out of doors to carry the remedy for their trouble in their pockets with them. At the first symptoms of an attack "Potter's Asthma Cigarettes" should be smoked, and in that way pain, discomfort, and suffering will be avoided. "Potter's Asthma Cigarettes" are specially valuable in foggy weather and on going into the open air, and their use is a wonderful protection. The same thing is true of "Potter's Smoking Mixture." A cigarette smoked by the asthmatic the last thing at night will ensure a good night's rest and pleasant refreshing sleep.

Figure 3: An advertisement for Potter's Asthma Cure, c.1910. (Reproduced by kind permission of the Wellcome Library, London.)

Widespread clinical and cultural acceptance of smoking for asthma is exemplified by the persistent strategies adopted by Marcel Proust to relieve his breathlessness. Until his mother's death in 1905, Proust lived in his parents' house in Paris, in which there was a dedicated "smoking-room" where he regularly burned, and inhaled the smoke from, commercial anti-asthma powders. In 1906, when Proust moved to an apartment on boulevard Haussmann, his bedroom was lined with cork to insulate him from external smells and fumes that might trigger his asthma and hay fever, and the room would be "thick with smoke" from repeated and prolonged fumigations.<sup>59</sup> Indeed, although Proust clearly did smoke medicated cigarettes for his asthma when he was out, he preferred to employ the combustible powders produced and marketed commercially by Espic, Legras or Escoufflaire: "This is the only thing that has ever given me any relief", he explained to his general housekeeper, Céleste Albaret, who lived with Proust from 1913 until his death. "I once tried the cigarettes made with this same Legras powder, but I am sure the paper they use, though thin and carefully prepared, disagrees with me. I prefer just the fumes."<sup>60</sup> For Proust, as for many asthmatics at the dawn of the twentieth century, inhaling the smoke from stramonium, lobelia and potash promised both the most immediate and the most effective relief from what Henry Hyde Salter had described as "the sense of impending suffocation, the agonizing struggle for the breath of life" that accompanied an acute attack of asthma.<sup>61</sup>

### The Gradual Decline of Smoking for Asthma

Smoking medicated cigarettes and burning anti-asthma powders retained a central position in the treatment of asthma during the early twentieth century. Indeed, many prominent physicians continued to advocate the value of smoking stramonium and other substances, including tobacco.<sup>62</sup> In the fourth edition of *The principles and practice of medicine*, published in 1901, the Canadian physician and Regius Professor of Medicine at Oxford, William Osler, highlighted the pivotal role of smoking and fumigating as both therapeutic and prophylactic:

The sedative antispasmodics, such as belladonna, henbane, stramonium, and lobelia, may be given in solution or used in the form of cigarettes. Nearly all the popular remedies either in this form or in pastilles contain some plant of the order *solanaceae*, with nitrate or chlorate of potash. Excellent cigarettes are now manufactured and asthmatics try various sorts, since one form benefits one patient, and another form another patient. Nitre paper made with a strong solution of nitrate of potash is very serviceable. Filling the room with the fumes of this paper prior to retiring will sometimes ward off a nocturnal attack. I have known several patients to whom tobacco smoke inhaled was quite as potent as the prepared cigarettes.<sup>63</sup>

<sup>59</sup> Céleste Albaret, *Monsieur Proust*, ed. Georges Belmont, London, Collins and Harvill Press, 1976, p. 63.

<sup>60</sup> *Ibid.*, p. 62.

<sup>61</sup> Henry Hyde Salter, *On asthma: its pathology and treatment*, 2nd ed., London, John Churchill and Sons, 1868, p. 2.

<sup>62</sup> For a brief discussion of tobacco use in asthma during the nineteenth and early twentieth centuries,

see H Silvette, P S Larson, and H B Haag, 'Medical uses of tobacco, past and present', *Virginia Medical Monthly*, 1958, **85**: 472–84.

<sup>63</sup> William Osler, *The principles and practice of medicine*, 4th ed., New York, D Appleton, 1901, p. 632.



## *The Rise and Fall of Smoking for Asthma*

Osler's support for smoking was reinforced by other physicians. As Eric K Chu and Jeffrey M Drazen have suggested, smoking stramonium remained a recommended treatment option for asthma in medical textbooks published throughout the early decades of the twentieth century.<sup>64</sup> In addition, surveys and clinical studies conducted during the 1940s and 1950s continued occasionally to emphasize the therapeutic value of cigarettes containing either stramonium or one of its active ingredients, atropine: "Atropine administered locally in cigarette smoke or wet aerosols", wrote H Herxheimer in 1959, "increases the vital capacity and gives a feeling of relief in cases of mild or moderate chronic asthma and emphysema."<sup>65</sup>

In spite of authoritative endorsements from clinicians and scientists, however, it is evident that even before Proust died in 1922 the popularity of smoking for asthma was already under threat. Opposition to the smoking cure appeared from a variety of directions. In the first instance, it is evident that declining support for smoking was prompted partly by new, allergic understandings of asthma that prioritized inflammation rather than nervous bronchoconstriction. The term allergy had been introduced in 1906 by the Austrian paediatrician Clemens von Pirquet in order to describe a range of clinical manifestations characterized by altered immunological reactivity or hypersensitivity. Within four years, Samuel Meltzer, a leading American physiologist and founder of the Society of Experimental Biology and Medicine, had suggested that asthma should be seen primarily as the product of an anaphylactic or allergic inflammatory response, rather than as the result of a neurosis.<sup>66</sup>

Accounts of asthma that emphasized allergic inflammation rather than spasmodic bronchoconstriction rendered the inhalation of smoke, even for therapeutic purposes, problematic. As a number of medical authors had pointed out since the mid-nineteenth century, smoke irritated the bronchial tree and often exacerbated the symptoms of respiratory disease. In 1911, J B Berkart, physician to the City of London Hospital for Diseases of the Chest, warned asthmatics of the dangers of commercially available asthma cigarettes and powders, "the smoke of which, when inhaled, intensely irritates the bronchial mucous membrane", resulting in "fresh inflammation".<sup>67</sup> Some years later, the gastroenterologist Arthur Hurst, who was asthmatic himself and who became one of the founding members of the Asthma Research Council in 1927, reinforced Berkart's reservations: "No patient should be allowed to use any of the numerous powders which are used by inhaling the fumes produced when they are burnt, as they invariably aggravate any bronchitis which may be present, and actually give rise to bronchitis in patients who have hitherto been free from it."<sup>68</sup>

<sup>64</sup> Eric K Chu and Jeffrey M Drazen, 'Asthma: one hundred years of treatment and onward', *Am. J. Respir. Crit. Care Med.*, 2005, **171**: 1202–8. Stramonium was also recommended for the treatment of asthmatic children during the inter-war years: L A Reynolds and E M Tansey (eds), *Childhood asthma and beyond*, Wellcome Witnesses to Twentieth Century Medicine, vol. 11, London, Wellcome Trust Centre for the History of Medicine at UCL, 2001.

<sup>65</sup> H Herxheimer, 'Atropine cigarettes in asthma and emphysema', *Br. Med. J.*, 15 Aug. 1959, **ii**:

167–71, at p. 171. See also Harold A Abramson, 'Therapy of asthma with reference to its psychodynamic pharmacology', *Bull. N. Y. Acad. Med.*, 1949, **25**: 345–63.

<sup>66</sup> For further discussion, see Mark Jackson, *Allergy: the history of a modern malady*, London, Reaktion Books, 2006, pp. 27–55.

<sup>67</sup> Berkart, *op. cit.*, note 57 above, p. 97.

<sup>68</sup> Arthur Hurst, 'An address on asthma', *Lancet*, 28 May 1921, **i**: 1113–17, at p. 1117.

During the middle decades of the twentieth century, allergists on both sides of the Atlantic extended this advice and warned patients not only to avoid inhaling medicated powders but also to limit their exposure to ordinary cigarette smoke that would irritate their lungs and exacerbate their asthmatic symptoms. In 1941, for example, Warren T Vaughan, one of the leading American allergists, suggested that tobacco was “a rather common cause of inhalant allergy” and recommended desensitizing injections in cases where patients or their partners could not stop smoking.<sup>69</sup> Over subsequent years, the concerns of allergists about the impact of cigarette smoke on asthmatic patients deepened. In a book aimed at patients and their families published in 1976, Doris J Rapp and A W Frankland warned that cigarette smoke “in a home, at work, and in a restaurant or automobile can cause the eyes to run, the nose to block, and the chest to wheeze”. “NO asthmatic”, they insisted, “should smoke and no parent should smoke in the presence of his allergic child.”<sup>70</sup>

The place of smoking in treatment regimes was also challenged by the emergence of alternative remedies for asthma. Stimulated partly by novel immunological accounts of pathogenesis and partly by developments in pharmacology and the growth of the pharmaceutical industry, a variety of new, and immediately more effective, treatments for asthma were developed, marketed, prescribed and consumed during the early decades of the twentieth century: atropine, which together with hyoscyamine and scopolamine was one of the anticholinergic alkaloids derived from stramonium; adrenergic agents such as adrenaline, derived from the adrenal glands, and ephedrine, which was isolated from the Chinese herb *ma huang*; methylxanthines such as theophylline and aminophylline; and oral steroids.<sup>71</sup> Offering both greater efficacy and reduced side-effects compared with smoking stramonium, for both doctors and patients these new substances became the mainstay of treatment. In 1935, George W Bray not only advocated the use of adrenaline either alone or in conjunction with atropine and morphine for acute attacks, but also strongly rejected the use of stramonium in the form of inhalations, powders, or cigarettes, since “the relief afforded is only temporary, and they have an extremely irritating effect on the bronchial mucous membrane; this, in turn, increases the liability to further attacks”.<sup>72</sup> Although Bray recognized the value of tincture of stramonium, incorporated in a bedtime linctus,<sup>73</sup> his reservations about the safety and efficacy of smoking stramonium were reiterated by other medical writers. “Asthma powders, cigarettes and sprays”, wrote the Indian physician Dharmendra in 1936, “have no place in the treatment of acute attacks. In mild attacks they afford relief to some people but to others the fumes from the powders and cigarettes may irritate the bronchial mucosa.”<sup>74</sup>

Concerns about the adverse effects of smoking for asthma did not diminish clinical or pharmaceutical interest in inhalational treatments in general. On the contrary, during the middle decades of the twentieth century, major pharmaceutical companies strove to

<sup>69</sup> Warren T Vaughan, *Strange malady: the story of allergy*, New York, Doubleday, Doran, 1941, pp. 179–80.

<sup>70</sup> Doris J Rapp and A W Frankland, *Allergies: questions and answers*, London, Heinemann, 1976, pp. 34, 95; emphasis in original.

<sup>71</sup> See Jackson, *op. cit.*, note 13 above.

<sup>72</sup> George W Bray, ‘The treatment of asthma’, *Br. Med. J.*, 19 Jan. 1935, i: 119–21.

<sup>73</sup> George W Bray, ‘The treatment of asthma’, *Post-grad. Med. J.*, Oct. 1935, **11**: 339–45.

<sup>74</sup> Dharmendra, ‘Asthma’, *Indian Med. Gaz.*, 1936, **1**: 279–84.

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develop adrenergic agents and corticosteroids that were active when inhaled. The inhalation of adrenaline in vaporized form, which offered an alternative to subcutaneous and intravenous administration, was eventually displaced during the post-Second World War years by the availability of increasingly selective inhaled bronchodilators, such as isoprenaline and salbutamol. Indeed, the blue Ventolin Inhaler, containing salbutamol and first marketed by Allen & Hanburys in 1969, became a prominent visual symbol of rising levels of asthma in the modern world and nebulized salbutamol became increasingly popular in the hospital treatment of acute asthma attacks.<sup>75</sup>

The clinical and commercial success of inhaled bronchodilators encouraged industrial efforts to develop inhaled steroids. Extracts from the adrenal cortex had been used to treat asthma in the 1930s, but the results had been equivocal. By the 1940s, reports of the efficacy of both synthetic cortisone and adreno-corticotrophic hormone (ACTH) in moderating inflammation in patients with rheumatoid arthritis encouraged pharmaceutical companies to test those substances in asthmatics. During the 1950s, a number of studies in Britain and North America demonstrated the value of oral and intramuscular cortisone in both acute and chronic asthma. Although the adverse effects associated with long-term use of systemic steroids limited their clinical application, they did encourage researchers to synthesize locally active compounds, such as beclomethasone, marketed by Allen & Hanburys in 1972 as Becotide, for direct delivery to the lungs.<sup>76</sup>

Supported by dramatic improvements in inhaler technology, particularly by the introduction of the pressurized metered-dose inhaler in 1956,<sup>77</sup> the development of novel pharmacological approaches to the therapeutic and prophylactic management of asthma clearly improved the prospects for patients with the condition. At the same time, the emergence of selective bronchodilators and inhaled steroids during the 1960s and 1970s not only effectively marginalized smoking for asthma but also gradually displaced the role of atropine in the treatment of acute attacks. By 1975, “belladonna alkaloids were not considered a significant enough part of asthma treatment to be included” in an American textbook of clinical medicine published that year.<sup>78</sup>

Clinical attitudes towards smoking stramonium for asthma were also perhaps adversely influenced by rising concerns about the health and economic impacts of smoking other substances, such as opium, cannabis, and tobacco. Apprehensions about the abuse of opium had escalated during the closing decades of the nineteenth century, leading to attempts, such as the Pharmacy Act of 1868, to regulate its sale and distribution and to limit “the dreadful habit” of opium-smoking.<sup>79</sup> At the turn of the century, greater international regulation of the opium trade, government inquiries into the commercial consequences and medical benefits of opium and cannabis, and specific legislative interventions strove to distinguish more effectively between acceptable medical applications and proscribed recreational use: the Pharmacy Act of 1908 and the Dangerous Drugs Act of 1920 attempted to restrict the availability of opium, cannabis, and a range of other

<sup>75</sup> Jackson, *op. cit.*, note 66 above, pp. 134–5; Jackson, *op. cit.*, note 13 above.

<sup>76</sup> Jackson, *op. cit.*, note 66 above, pp. 132–3.

<sup>77</sup> Sanders, *op. cit.*, note 8 above; Anderson, *op. cit.*, note 8 above.

<sup>78</sup> Chu and Drazen, *op. cit.*, note 64 above. See also David Jack, ‘Drug treatment of bronchial asthma 1948–95 – years of change’, *Int. Pharm. J.*, 1996, **10**: 50–2.

<sup>79</sup> Smith, *op. cit.*, note 50 above.

drugs for non-medical purposes. As a number of historians have suggested, such efforts to police popular consumption of these substances were not always successful, but it is likely that the gradual criminalization of smoking opium and cannabis also served to undermine clinical and popular support for smoking stramonium.<sup>80</sup>

Cultural dependence on, and commercial interests in, tobacco were also substantially challenged during the mid-twentieth century, particularly by research published during the 1950s that demonstrated an aetiological link between cigarette consumption and lung cancer. Increasingly, smoking became the subject of scientific inquiries and health education programmes organized by both government agencies and anti-tobacco or anti-smoking movements.<sup>81</sup> As medical evidence of the respiratory effects and addictive qualities of inhaled nicotine, tar and carbon monoxide intensified and as public and media concerns about the tobacco industry proliferated, it became increasingly untenable to advocate smoking for asthma. Although tobacco smoking was occasionally employed as an expectorant in patients with bronchitis and other respiratory conditions,<sup>82</sup> smoking carried distinct and evident health dangers for asthmatics. Echoing the advice of allergists, in 1952 Gustavus Peters and his colleagues insisted that:

No patient who has asthma should smoke. Smoke of any type is irritating, not soothing, to mucous membranes. Smoking induces cough, bronchitis, and bronchospasm, which are nature's warning to avoid or to expel the irritating effects of smoke. Likewise, any temporary benefit that patients derive from smoking so-called asthma cigarettes or burning powders which contain stramonium or nitrates, is nullified by the deleterious effect of the smoke itself, which aggravates the patients' bronchitis. All patients with asthma have some degree of bronchitis . . . It should be axiomatic that patients who have asthma should not smoke.<sup>83</sup>

Intriguingly, waning medical and cultural support for smoking, as well as developments in understanding the pathology and treatment of asthma, did not completely excise stramonium from the therapeutic arsenal. In response to growing political agitation and declining cigarette consumption, the tobacco industry attempted to re-brand stramonium and other medicated cigarettes as a deterrent for smoking. There had been suggestions in the medical press during the 1940s that the side-effects of stramonium cigarettes, most notably the dry mouth, could be exploited as a means of imparting a distaste for smoking amongst those addicted: "Various preparations . . . may have this effect", wrote one correspondent to the *British Medical Journal* in 1943, "and stramonium given in sufficient dosage to cause dryness of the mouth may also act as a deterrent."<sup>84</sup> The following decade, cigarettes containing stramonium, or sometimes menthol, were again recommended on several occasions in the medical press as a means of "making the act of indulgence so unpleasant that it is soon renounced".<sup>85</sup>

<sup>80</sup> Berridge, *op. cit.*, note 2 above; Mills, *op. cit.*, note 2 above.

<sup>81</sup> Berridge, *op. cit.*, note 3 above; Hilton, *op. cit.* note 2 above, pp. 179–201.

<sup>82</sup> Silvette, Larson, and Haag, *op. cit.*, note 62 above. See also the comments in Mass Observation Archive, TC 63, Box 3 File C Men S, 1 Sept. 1937. I am grateful to Rosemary Elliot for alerting me to this reference.

<sup>83</sup> Gustavus A Peters, Louis E Prickman, Giles A Koelsche, and Haddon M Carryer, 'Smoking and asthma', *Proceedings of the Staff Meetings of the Mayo Clinic*, 1952, 27: 329–31.

<sup>84</sup> Anon., 'The tobacco habit', *Br. Med. J.*, 16 Oct. 1943, ii: 502.

<sup>85</sup> Anon., 'Smoking cures', *Br. Med. J.*, 20 Feb. 1954, i: 471; Anon., 'Menthol cigarettes', *Br. Med. J.*, 17 Nov. 1956, ii: 1189.

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As the industry archives make clear, during subsequent decades multi-national tobacco companies not only continued to promote stramonium cigarettes for the treatment of asthma, but also explored a number of novel approaches to production and marketing that might serve to protect their economic interests. In particular, they continued to explore and advertise the role of medicated cigarettes in the management of addiction, evaluated the potential benefits of grafting stramonium on to tobacco plants, a technique developed by a Bulgarian company to produce Atrotabak,<sup>86</sup> and considered the development of what were referred to as “health cigarettes” for dispensing a wide range of drugs.<sup>87</sup> In certain locations, commercial interests were supported by statutory provisions. In Britain, for example, the 1960 Poisons Rules exempted stramonium “cigarettes, smoking mixtures or fumigants” from the restrictive provisions of the Poisons Act.<sup>88</sup> Equally, in some countries, cigarettes containing stramonium were subjected to much lower rates of excise tax than other forms of smoking.<sup>89</sup>

Industrial strategies were not always tolerated. Claims that herbal cigarettes were a safer, and more culturally acceptable, form of smoking, for example, were certainly challenged on occasions: in 1980, M Robert Kaufman and Theodore Siek suggested that the tobacco industry had exploited public interest in “natural” remedies and under-estimated the toxic effects of the chemicals concerned, including regular anti-asthma ingredients such as stramonium and lobelia.<sup>90</sup> Nevertheless, in spite of continuing concerns about the health risks associated with medicated cigarettes and recurring public anxieties about the lack of regulation of the sales of herbal cigarettes, particularly to children,<sup>91</sup> in some ways the tobacco industry did relatively successfully, if only partially, convert the smoking cure for asthma into a prospective, and potentially lucrative, cure for smoking.

During the middle decades of the twentieth century, a combination of novel theoretical formulations of asthma, technical developments in treatment, the growing regulation of smoking opium and cannabis, and shifting cultural attitudes to tobacco smoking collectively served to undermine clinical support for smoking stramonium and other plant preparations in order to relieve or prevent asthma attacks. This is not to say that scientific and public interest (beyond the tobacco industry) evaporated entirely in the post-war years: throughout the 1970s and 1980s, researchers continued sporadically to analyse

<sup>86</sup> See the articles and correspondence within the British-American Tobacco Company on Atrotabak, in the Legacy Tobacco Documents Library, available online at <http://legacy.library.ucsf.edu>: ‘Nicotine-free cigarettes from tobacco and Belladonna’, Bates no. 1000025832; letter from D G Felton to Mr Anderson, dated 10 April 1963, Bates no. 106507887; letter from H D Anderson to D G Felton, dated 11 April 1963, Bates no. 103518668. I am grateful to Allan Brandt for alerting me to the Legacy Tobacco Documents Library.

<sup>87</sup> ‘Cigarettes as drug dispensers – health cigarettes’, Legacy Tobacco Documents Library, Bates no. 100648851; Bo Holmstedt and Olle Wallen, ‘Drug administration by means of cigarettes’, *Archives Internationales de Pharmacodynamie et de Thérapie*, 1959, **119**: 275–93.

<sup>88</sup> The Poisons Rules, 1960, a copy of which is available in the Legacy Tobacco Documents Library, Bates nos. 400517305–400517347.

<sup>89</sup> See the entry on Greece in U.S. Department of Agriculture, ‘Foreign Agriculture Circular’, 1986, Legacy Tobacco Documents Library, Bates no. 89609583/9694.

<sup>90</sup> M Robert Kaufman and Theodore Siek, ‘Is “natural” always healthy?’, *J. Sch. Health*, Aug. 1980, **50**: 322–5.

<sup>91</sup> See, for example, the evidence presented before the U.S. Food and Drug Administration in 1996, in ‘Comments of Public Citizen, Inc. Regarding the FDA’s proposal to regulate the sale and promotion of tobacco products to minors’, Legacy Tobacco Documents Library, Bates no. 2048297052/7220.

the physiological effects of asthma cigarettes.<sup>92</sup> Indeed, sustained by on-going public consumption of popular anti-asthma remedies and perhaps by the promise of commercial benefits, a number of studies persisted in emphasizing the efficacy and safety of medicated cigarettes. In 1973, a German study reported that while regular tobacco cigarettes triggered bronchoconstriction, asthma cigarettes containing atropine brought about “good bronchodilation with minimal side effects”.<sup>93</sup> Five years earlier, a more idiosyncratic and more passionate defence of herbal cigarettes had been published in the *Journal of the American Medical Association*. Cubeb cigarettes, containing cubeb or tailed pepper, stramonium, eucalyptus and other plant extracts, had been marketed for asthma, hay fever, and catarrh since the mid-nineteenth century: indeed, Marshall’s, Blosser’s and Dr Perrin’s cubeb cigarettes remained popular herbal brands well into the late twentieth century. According to Virginia S Edwards, a doctor from Ohio who smoked cubeb cigarettes herself, such products deserved to retain a critical place in the modern treatment of respiratory disorders. “It is also my belief that the cubeb cigarette existed even prior to the tobacco cigarette as a formal product, and was, as now, sold as a medicinal item, advertised for bronchial asthma, hay fever, and colds, or just ‘across the counter’ as an ordinary cigarette.” “Several local drugstores”, she concluded, “stock these cigarettes for me and my patients. ‘Light up and live’.”<sup>94</sup>

### Conclusion

In recent years, expansive historical studies of smoking have focused critically on scientific debates about the causal relationship between tobacco smoking and lung cancer, on the relative roles and responsibilities of the tobacco industry and state authorities, and on the development of public health initiatives to combat the adverse health effects of cigarette smoking.<sup>95</sup> These historiographical preoccupations are understandable: as government reports and mortality statistics from around the world make clear, smoking kills. However, there is an alternative history of smoking, namely as a therapeutic measure, which has only rarely been explored and which might offer insights into both the history of smoking and the history of medicine. Enduring beliefs in the efficacy of the smoking cure for asthma, for example, might help to explain persistent individual and commercial commitments to smoking during the second half of the twentieth century. At a broader level, careful historical explorations of treatments that seem antithetical to modern political and professional sensibilities, or have become unfashionable, offer constructive opportunities to reveal the contextual determinants of medical knowledge and practice.

<sup>92</sup> D Charpin, J Orehek and J M Velardocchio, ‘Bronchodilator effects of antiasthmatic cigarette smoke (*Datura stramonium*)’, *Thorax*, 1979, **34**: 259–61; H L Elliott and J L Reid, ‘The clinical pharmacology of a herbal asthma cigarette’, *Br. J. Clin. Pharmacol.*, 1980, **10**: 487–90.

<sup>93</sup> ‘Smoking and health’, Legacy Tobacco Documents Library, Bates no. 87492752.

<sup>94</sup> Virginia S Edwards, ‘The quest of the cubebs’, *JAMA*, 1968, **206**: 133.

<sup>95</sup> Berridge, op. cit. note 3 above; Brandt, op. cit., note 4 above; Berridge, op. cit., note 2 above; Mills, op. cit., note 2 above.

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Although inhaling smoke, fumes and medicated vapours had been a recognized treatment for asthma and other breathing difficulties since antiquity, the smoking cure became increasingly fashionable amongst asthmatics and their doctors in the middle decades of the nineteenth century. The rising popularity of smoking stramonium and other herbal substances to relieve respiratory distress during that period owed much to contemporary formulations of asthma as a condition marked by spasmodic bronchoconstriction, as well as to firm endorsements from leading clinicians such as Henry Hyde Salter. At the same time, the absence of alternative effective remedies and a growing cultural dependence on smoking tobacco, opium and cannabis contributed to the increased reliance of asthmatics such as Marcel Proust on stramonium cigarettes and powders.

During the early decades of the twentieth century, the prominent position of smoking stramonium was challenged not only by new theories of asthma, which prioritized the role of inflammation and regarded smoke as an irritant, but also by the proliferation of novel and effective pharmaceutical remedies, by expanding state regulation of poisonous substances such as opium and cannabis, and by growing concerns about the health risks associated with smoking tobacco. Significantly, however, these factors did not entirely undermine the place of medicated cigarettes in the treatment of asthma: both clinicians and patients continued to rely on commercial powders and cigarettes containing stramonium, cubeb, lobelia, potash and eucalyptus well into the 1980s and 1990s. In addition, of course, the therapeutic principles of smoking or inhalation as a technique persisted in the form of inhalers designed to deliver bronchodilators, steroids and other active substances to diseased lungs.

Perhaps ironically, the eventual demise of the smoking cure for asthma owed little to health concerns about tobacco or to anxieties about the clinical effects of smoke on asthmatic airways. During the late 1960s, reports in the Canadian medical press identified what appeared to be a new danger of anti-asthma cigarettes. According to a number of commentators, Canadian adolescents and young adults had begun “to abuse certain belladonna alkaloid drug products that are available, without prescription, for the inhalation treatment of asthma”.<sup>96</sup> Cigarettes and powders containing stramonium, mostly notably the Asthmador brand, were being crushed, mixed with water and ingested in order to induce hallucinations; in some cases, acute intoxication and delirium resulted in admission to hospital and potential death. In subsequent years, similar reports of poisoning, including occasional fatalities, appeared in the British and North American medical press, particularly in relation to Potter’s Asthma Remedy and Surama cigarettes.<sup>97</sup> According to some alarmist reports, the fashion had been spread by word of mouth at pop festivals, such as Knebworth, where stramonium had gained a reputation as

<sup>96</sup> A C Hardman, ‘Abuse of belladonna alkaloids’, *Can. Med. Assoc. J.*, 1968, **98**: 466; J Robertson Unwin, ‘Illicit drug use among Canadian youth: part II’, *Can. Med. Assoc. J.*, 1968, **98**: 449–54.

<sup>97</sup> Elizabeth A Harrison and D H Morgan, ‘Abuse of herbal cigarettes containing stramonium’, *Br. Med. J.*, 13 Nov. 1976, **ii**: 1195; A Ballantyne, P Lippiett, and J Park, ‘Herbal cigarettes for kicks’,

*Br. Med. J.*, 2 Dec. 1976, **ii**: 1539; Ronald K Siegel, ‘Herbal intoxication: psychoactive effects from herbal cigarettes, tea and capsules’, *JAMA*, 1976, **236**: 473–6; A H Barnett, F W Jones and E R Williams, ‘Acute poisoning with Potter’s Asthma Remedy’, *Br. Med. J.*, 24 Dec. 1977, **ii**: 1635; R G H Bethel, ‘Abuse of asthma cigarettes’, *Br. Med. J.*, 30 Sept. 1978, **ii**: 959.

“a new type of ‘trip’ and a substance that did not make you vomit—unlike marijuana if taken in excess”.<sup>98</sup>

Of course, concerns about the hallucinogenic properties of thorn-apple were not new; indeed, the psychoactive potential of preparations of *Datura ferox* and *Datura stramonium* had been well-known, and regularly exploited for recreational and therapeutic purposes, since antiquity. In the last decade of the twentieth century, however, growing concerns about the health and economic impacts of drug abuse, as well as the wide availability of more effective and safer remedies for asthma, encouraged many commentators to demand greater regulation and restriction of the sale of anti-asthma cigarettes and powders.<sup>99</sup> While anti-asthma cigarettes have virtually disappeared under the weight of such anxieties, the therapeutic principles of the smoking cure have not been entirely eclipsed. At the start of the twenty-first century, inhaled treatments continue to dominate the management of asthma, preparations of stramonium are still obtainable from herbalists for the relief of respiratory conditions, a wide range of herbal cigarettes are available both online and over the counter from newsagents and tobacconists, and anticholinergic bronchodilators such as atropine and ipratropium bromide, initially derived or synthesized from stramonium, are advocated for certain patients with asthma or chronic obstructive pulmonary disease.<sup>100</sup> Although asthmatics no longer need to immerse themselves in clouds of smoke, as Marcel Proust did a century or so ago, the legacy of the smoking cure for asthma persists.

<sup>98</sup> Harrison and Morgan, op. cit., note 97 above.

<sup>99</sup> Bethel, op. cit., note 97 above.

<sup>100</sup> Kenneth R Chapman, ‘Anticholinergic bronchodilators for adult obstructive airways disease’, *Am. J. Med.*, supplement 4A, 1991, **91**: 13–16.