"A Medical Cromwell to Depose King Alcohol": Medical Scientists, Temperance Reformers, and the Alcohol Problem in Britain

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A largely neglected chapter in the history of the British temperance movement is the role played by anti-alcohol doctors who investigated the health consequences of drinking. At first, advocacy of teetotalism was often injurious to their personal and professional reputations; by the 1870s, however, temperance reform had become more respectable and many doctors now believed that their professional interests might actually be advanced by establishing themselves as authorities on alcohol. Their experience and objectivity, along with the cultural authority of science in general, validated their claims to expertise. In the early twentieth century, two new groups of medical scientists challenged the credibility of the temperance doctors and appropriated for their own work the mantle of objective scientific truth.

Le rôle joué par les médecins qui s'opposaient à l'alcool et qui en étudiaient les effets sur la santé est un aspect en grande mesure négligé de l'histoire du mouvement de tempérance britannique. Au début, le fait de préconiser la sobriété portait souvent préjudice à leur réputation personnelle et professionnelle; cependant, au cours des années 1870, le mouvement pour la tempérance était devenu plus respectable et une foule de médecins croyaient qu'ils pourraient effectivement promouvoir leurs intérêts professionnels en devenant des autorités sur l'alcool. Leur expérience et leur objectivité, ainsi que l'autorité culturelle que confère généralement la science prouvaient la justesse de leurs affirmations au sujet de leur compétence. Au début du XX^e^ siècle, deux nouveaux groupes de chercheurs en médecine ont jeté le doute sur la crédibilité des médecins qui recommandaient la tempérance et se sont approprié l'autorité que confère la vérité scientifique objective.

THE NINETEENTH-CENTURY BRITISH temperance movement has most frequently been characterized by both contemporary critics and modern-day historians as a moral reform crusade against the vice or sin of drunkenness, led by evangelical teetotal fanatics who preached about improving the lives and saving the souls of drunkards. While the predominant tone of most

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temperance lectures and literature was indeed religious and moralistic, many other kinds of arguments in favour of personal abstinence or restrictions on the drink traffic were also utilized from the very origins of the teetotal movement in the 1830s. In fact, temperance historian Brian Harrison has argued that the initial tenor of the movement was secular and worldly, an approach that only changed in the second half of the nineteenth century when it became affiliated with organized religion.[1] Early teetotal societies had been led by ambitious members of the working classes who believed that abstention from alcohol was one essential step to achieving self-improvement and respectability. For the ruling classes, on the other hand, intemperance among the masses was considered a problem from the standpoint of national prosperity and public order. Drunkenness was denounced not only on the grounds that it was inconsistent with the Scriptures or with a righteous Christian life, but also because it often led to violence, crime, and pauperism. Temperance reform was thus presented as relevant to both the ethical or spiritual realm and the material conditions of life. It served as a rational solution to social problems associated with industrialization and as a means to self-realization and social advancement.

Intemperance was also materially costly to both individuals and the state when it led to illness or even premature death among drinkers. Preserving physical and mental health was promoted as a practical and sometimes even selfish reason for abstaining, one that might influence people who did not have nobler motives for doing so. At stake in the drink question was the physical as well as the spiritual welfare of individuals: abstinence was sometimes championed alongside other causes such as vegetarianism, as matters of good health and good diet.[2] Some temperance reformers believed from the start that a medical and scientific case against alcohol would be a particularly valuable weapon in the temperance arsenal. It would provide their movement with a more universal appeal than could an exclusively religious basis.[3]

The "physical basis" of teetotal principles was the special domain of physicians, surgeons, and scientists who had some expertise in physiology and pathology. These "temperance doctors" did not want to be dismissed as mere "enthusiasts" for the teetotal cause, but instead presented themselves as rational and objective professionals whose presence could lend credibility to the movement as a whole. Throughout the nineteenth century, however, the weight of medical opinion and scientific knowledge seemed to fall more heavily on the pro-drink side of the debate. Only a small minority of

1 Brian Harrison, *Drink and the Victorians: The Temperance Question in England 1815–1872* (London: Faber and Faber, 1971), pp. 179–195. See also Gerald Wayne Olsen, "From Parish to Palace: Working-Class Influences on Anglican Temperance Movements, 1835–1914", *Journal of Ecclesiastical History*, vol. 40 (1989), p. 242.

2 Harrison, *Drink and the Victorians*, pp. 33, 161.

3 *Ibid.*, p. 190.

medical professionals supported the cause, while most doctors and the general public alike continued to maintain that moderate doses of alcohol could actually be beneficial in health and disease, as a source of muscular energy or bodily heat, as a stimulant, or as a remedy for numerous ailments.[4] Temperance reformers therefore felt that they had to counteract these prevailing beliefs in the dietary and medicinal value of alcohol if they were to persuade people to change their drinking habits. They wanted to create a new medical consensus on alcohol as a destroyer — not a restorer — of health. To do so, they gathered clinical and experimental data on the pathological and physiological effects of alcohol on the living organism. The history of the elaboration of biomedical knowledge about alcohol and the use of this knowledge by anti-drink forces over the course of the nineteenth century is a topic that has so far received little attention from either temperance or medical historians.[5]

Medical and Scientific Alcohol Authorities

Despite considerable indifference and even hostility to temperance reform on the part of the medical profession in general, medical and scientific arguments managed to attain a prominent place in the temperance propaganda of the second half of the nineteenth century. Of course the health aspects of the drink question were never of central concern to the British temperance movement as a whole, nor were medical men the primary force behind the movement as was the case in France.[6] During the early history of the British movement, from the 1830s to around 1860, doctors played a relatively small role in the temperance cause, and the possible effects of alcohol use on the human body were known primarily through doctors' testimonies and anecdotal evidence.[7] From the 1860s onward, however, medical writers and researchers devoted much more attention to the problems of alcohol use and abuse, as well as assuming a more pronounced role in the temperance

4 John Harley Warner, "Physiological Theory and Therapeutic Explanation in the 1860s: The British Debate on the Medical Use of Alcohol", *Bulletin of the History of Medicine*, vol. 54 (1980), pp. 235–257; Sarah E. Williams, "The Use of Beverage Alcohol as Medicine, 1790–1860", *Journal of Studies on Alcohol*, vol. 41 (1980), pp. 543–566; Harrison, *Drink and the Victorians*, pp. 39–41.

5 The exception is Warner, "Physiological Theory". This aspect is touched upon only briefly by Lilian Lewis Shiman, *Crusade against Drink in Victorian England* (New York: St. Martin's, 1988), pp. 34–36. A particularly comprehensive summary of work done prior to 1925 on the physiological and pathological effects of alcohol can be found in Ernest H. Cherrington, ed., *The Standard Encyclopedia of the Alcohol Problem* (Westerville, Ohio: American Issue, 1925–1930), vol. 1, pp. 108–126.

6 Patricia E. Prestwich, *Drink and the Politics of Social Reform: Antialcoholism in France since 1870* (Palo Alto: Society for the Promotion of Science and Scholarship, 1988).

7 See Emil Abderhalden, *Bibliographie des gesamten wissenschaftlichen Literatur über den Alkohol und den Alcoholismus* (Berlin and Vienna: Urban and Schwarzenberg, 1904); Brian Harrison, "Drink and Sobriety in England, 1815–1872: A Critical Bibliography", *International Review of Social History*, vol. 12 (1967), pp. 204–277; and the extensive bibliography in Axel Gustafson, *The Foundation of Death: A Study of the Drink-Question* (Boston: Ginn, Heathand, 1885).

movement. In fact, a more or less distinct "medical temperance movement" emerged at this time as more members of the profession became sympathetic to the cause and even began to undertake scientific investigations into the alcohol question. They produced hundreds of books, pamphlets, and lectures devoted specifically to medical-scientific issues. The dissemination of this knowledge was sponsored by the most important temperance organizations, including the National Temperance League, the Church of England Temperance Society, and the United Kingdom Alliance. In 1876 the British Medical Temperance Association (MTA) was founded, composed entirely of abstaining medical men and women. Membership in the MTA reached almost 900 practitioners and students across Great Britain by 1898 along with 5,000 supporting subscribers.[8] In 1884 yet another medical temperance organization, the British Society for the Study of Inebriety (SSI), met for the first time to discuss the study and treatment of alcohol addiction and the scientific analysis of the alcohol problem.[9]

The voices of these doctors, surgeons, and scientists were influential in promoting the temperance cause among audiences who were increasingly interested in and impressed by the facts and authority of science. The birth of the teetotal movement coincided with efforts towards the popularization of science among all social classes in early Victorian Britain. Among the ruling class, science came to be considered fashionable and valuable because of its alliance with natural theology.[10] At the opposite end of the social ladder, one of the most influential forces in bringing science to the people was the widespread enthusiasm for phrenology during the 1830s and 1840s. As Roger Cooter has argued, phrenology's materialistic theory of mind played a key role in the process by which "science began to outstrip religion as the major cultural force".[11] To a rising group of medical and scientific men who were mostly middle-class, liberal, and religiously non-conformist, phrenology helped to justify their call for a more meritocratic social order including a more prominent place for themselves.[12] Members of the artisan class felt phrenological science to be relevant to their lives because it offered the possibility of achieving personal growth and social advancement by means of improving their mental capacities. Often interpreted as a self-help philosophy and doctrine of human perfectibility, phrenology thus appealed to "practical-minded improvers", or in other words to many of the

8 *Medical Temperance Review*, vol. 1 (1898), p. 52.

9 Virginia Berridge, "The Society for the Study of Addiction: 1884–1988", *British Journal of Addiction*, vol. 85 (1990), pp. 983–1087.

10 Susan Faye Cannon, *Science in Culture: The Early Victorian Period* (New York: Science History Publications, 1978); Jack Morrell and Arnold Thackray, *Gentlemen of Science: Early Years of the British Association for the Advancement of Science* (Oxford: Clarendon Press, 1981).

11 Roger Cooter, *The Cultural Meaning of Popular Science: Phrenology and the Organization of Consent in Nineteenth-Century Britain* (Cambridge: Cambridge University Press, 1984), p. 2.

12 *Ibid.*, p. 47.

same kinds of men who were also initially attracted to the teetotal movement.[13]

The phrenologists, along with the radical pre-Darwinian evolutionists of Andrian Desmond's recent account, paved the way during the second quarter of the nineteenth century for the overthrow of natural theology by scientific naturalism.[14] These sciences, however, were dismissed by the existing cultural elite for their materialistic implications and their association with radical dissent; the decisive struggle between science and religion for intellectual authority was therefore not waged until after 1859. Darwin's theory was essential to the eventual victory of science over religion because it was able to fulfil the same role that natural theology had in supplying an intellectual justification for the existing social structure.[15]

As Darwin's defenders embarked on their mission to elevate the status and authority of science in general, scientific temperance and alcohol experts began to take on new significance within that social reform movement. Not until the 1860s and 1870s did the medical-scientific side of the alcohol question achieve an independent status separate from the religious and moral arguments for temperance. On the most general level, physiology or the "physical basis" of abstinence principles came to be seen as a particularly persuasive argument owing to the new prominence of science in mid-Victorian culture.

In a series of publications on "cultural authority" in Victorian Britain, Frank Turner accounts for the triumph of secular science by emphasizing the importance of a campaign waged by a group of "scientific publicists" led by such figures as Thomas Henry Huxley, John Tyndall, and Francis Galton. Their goals were twofold: to promote science for its practical applications and to advance their own professional interests. First, Turner emphasizes the way in which Huxley and his supporters promoted their own "functional expertise" and the value of their science for improving the material conditions of life, including physical health. The scientists asserted, for example, that people ought to understand the principles of cleanliness and temperance not simply because the clergy instructed them to do so, but because obeying these laws of nature was a matter of health and happiness.[16] A utilitarian ideal of science was likewise the motive behind the formation of the Social Science Association (SSA), which served during the second half of the

13 Cooter's biographical analysis of 200 phrenological lecturers shows that a few of them were also active in temperance reform, and he points out that teetotal pioneer Joseph Livesey's journal the *Moral Reformer* espoused phrenology. *Ibid.*, pp. 7, 163, and 272–300.

14 Andrian Desmond, *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London* (Chicago: University of Chicago Press, 1989).

15 Frank Turner, *Contesting Cultural Authority: Essays in Victorian Intellectual Life* (Cambridge: Cambridge University Press, 1993), p. 117; Robert Young, *Darwin's Metaphor: Nature's Place in Victorian Culture* (Cambridge: Cambridge University Press, 1985).

16 Turner, *Contesting Cultural Authority*, pp. 153, 198.

century as a forum for the presentation of scientific research aimed at solving social problems. The SSA devoted particular attention to issues of public health, including the drink problem. In its later years, the SSA stressed anti-alcohol measures as the most important means of attacking society's ills, and in fact its final act was to serve as the "neutral platform" for a conference on temperance legislation. As Harrison suggests, temperance organizations aligned themselves with the social science movement in order to provide an "intellectual justification" for their policies.[17]

A second dimension of the conflict between science and religion concerned the professional and social aspirations of this new group of natural scientists. Eager to secure professional legitimacy and social prestige, they challenged the Anglican, university-based natural theologians for intellectual leadership in mid-Victorian culture.[18] Much like these scientists, medical professionals were also seeking to earn higher status and income.[19] Both scientists and doctors were using science in order to achieve their collective ambitions, and it could be argued that some of them chose to use temperance science in particular for much the same reason. They believed that there might be professional advantages to be gained by achieving recognition as scientific experts on the alcohol problem. Doctors would be the cultural authorities on alcohol, empowered to advise the population on drinking habits and the government on alcohol policy. This special role would enhance the image and influence of the medical profession as a whole. Thus in 1891 one temperance doctor insisted that it was not philanthropists, clergy, or legislators who held the key to the alcohol problem, but rather medical professionals. As she put it, only a "*medical* Cromwell" could ultimately depose "King Alcohol".[20]

Professional interests were therefore one important motivation behind the founding of the medical temperance movement, and they also played a role in the work of another group of anti-alcohol doctors, the "inebriety specialists" of the Society for the Study of Inebriety. During the 1870s and 1880s, these physicians attempted to establish themselves as experts on the study and treatment of alcohol addiction by redefining alcoholism as an organic

17 Lawrence Ritt, *The Victorian Conscience in Action: The National Association for the Promotion of Social Science, 1857–1886* (Ann Arbor: University Microfilms, 1984); *Conference on Temperance Legislation* (London: Longmans, Green, 1886); Brian Harrison, "The British Prohibitionists 1853–1872: A Biographical Analysis", *International Review of Social History*, vol. 15 (1970), p. 414.

18 Frank Turner, *Between Science and Religion: The Reaction to Scientific Naturalism in Late Victorian England* (New Haven: Yale University Press, 1974), and *Contesting Cultural Authority*, pp. 131–150, 171–200. See also L. S. Jacyna, "Scientific Naturalism in Victorian Britain" (Ph.D. dissertation, University of Edinburgh, 1980).

19 M. Jeanne Peterson, *The Medical Profession in Mid-Victorian London* (Berkeley: University of California Press, 1978).

20 Kate Mitchell, *The Drink Question: Its Social and Medical Aspects* (London: Swan Sonnenschein, 1891), p. 188.

disease related to insanity.[21] They thereby gained medical jurisdiction over what had previously been considered a moral and legal issue. In the case of temperance doctors, their struggle to claim the scientific study of alcohol as their own field of expertise was waged against both the lay and clerical branches of the movement. Doctors contended that they alone were qualified to pronounce upon and to generate knowledge about the nature and physiological effects of alcoholic beverages. Whereas at first mere laymen had commonly addressed this aspect of the drink question, by the 1870s the British Medical Temperance Association was asserting that medical or scientific credentials were necessary for undertaking such work.

The temperance doctors may also have felt that they were competing with the clergy for a position of cultural authority on the drink question. During the early history of teetotal agitation, the churches had eschewed the cause as a secular, lower-class crusade.[22] By the 1850s, however, more clergy began to join the movement and to form the first church temperance organizations. The Church of England Temperance Society, founded in 1873, soon became the largest and most influential temperance group in the nation. Moreover, as Harrison points out, the character of the movement in general had changed radically between 1830 and 1860; it became more high-brow and respectable as working-class meliorists and reformed drunkards were replaced by new leaders from the educated classes. Members of the medical and clerical professions therefore vied for a position of leadership on what had come to be viewed as a vital social issue. Although most temperance doctors were indeed religious believers and did not want to "weaken the force of clerical rebuke of the vice and sin of intemperance", they nevertheless sought to distinguish their temperance work from that of the "army of Christian abstainers".[23] They contended that their reasoned scientific arguments would be more influential in bringing people over to the cause than would religious and moralistic preaching. They may even have felt that the Christian temperance movement was encroaching into a domain that was rightfully their own. Insofar as abstinence from alcohol was a matter of health and social reform, Christian teetotal advocates were practising a kind of secularized religion that was more concerned with daily conduct than with the Bible.[24]

21 Berridge, "The Society for the Study of Addiction", p. 999; Virginia Berridge and Griffith Edwards, *Opium and the People: Opiate Use in Nineteenth-Century England* (New Haven: Yale University Press, 1981), p. 170; Norman Kerr, "Presidential Inaugural Address", *Proceedings of the Society for the Study of Inebriety*, vol. 1 (1884), pp. 2–16. A similar interpretation of the professional motives of an even earlier group of British anti-drink doctors is given by Roy Porter, "The Drinking Man's Disease: The 'Pre-History' of Alcoholism in Georgian Britain", *British Journal of Addiction*, vol. 80 (1985), p. 393.

22 Shiman, *Crusade against Drink*, pp. 43–73; Harrison, *Drink and the Victorians*, pp. 179–195.

23 Norman Kerr, *Inebriety or Narcomania: Its Etiology, Pathology, Treatment and Jurisprudence*, 3rd ed. (London: H. K. Lewis, 1894), p. 14.

24 Harrison, *Drink and the Victorians*, p. 188.

Recent studies by Philip Pauly and Jonathan Zimmerman describe the conflict between "dry" and "wet" alcohol science in the United States. In the 1890s, the scientists on the Committee of Fifty for the Investigation of the Liquor Problem contested the scientific authority that Mary Hunt and the Woman's Christian Temperance Union had usurped: the pro-drink scientists disputed the conclusions of teetotal temperance science and endorsed instead moderate drinking.[25] In the British case, this interpretation, emphasizing the role of professional interests and conflict over cultural authority in the history of alcohol science, can be extended back to the mid-Victorian period. At that time, however, the medical scientists who were trying to establish a role in the alcohol debate were all on the anti-drink side, struggling for power against other groups of anti-drink reformers. The medical professionals who continued to defend the therapeutic and nutritional value of alcoholic beverages could not be said to have formed any sort of organized opposition to the temperance doctors; they were merely representing long-accepted opinions and practices, not trying to gain special recognition for their work on alcohol.

In addition to the campaign waged by the doctors of the Medical Temperance Association, there was yet another contestation for power within the British temperance ranks. Just after the turn of the twentieth century, some of the physicians and scientists who belonged to the Society for the Study of Inebriety began to declare that their "scientific" and "objective" approach to the alcohol problem was superior to the work of the temperance movement itself.[26] While criticizing it, however, many of these SSI members still supported the movement and its supposedly "unscientific" drink control policies. Such duplicity was necessary because this new group of alcohol experts wanted to distance themselves from the partisan reputation that temperance doctors and reformers had earned. They hoped to reclaim the science of alcohol from the temperance movement, while upholding the principles of total abstinence.

Finally, the efforts made by yet a third faction of British medical scientists to validate their own expertise on the alcohol question have even closer parallels with Zimmerman's account of the battle waged by the American Committee of Fifty against the temperance reformers. During the crisis of the First World War, the British government's Central Control Board (Liquor Traffic) imposed radical new drink control measures intended to

25 Philip Pauly, "The Struggle for Ignorance about Alcohol: American Physiologists, Wilbur Olin Atwater, and the Woman's Christian Temperance Union", *Bulletin of the History of Medicine*, vol. 64 (1990), pp. 366–392; Jonathan Zimmerman, " 'When the Doctors Disagree': Scientific Temperance and Scientific Authority, 1891–1906", *Journal of the History of Medicine and Allied Sciences*, vol. 48 (1993), pp. 171–197.

26 Berridge, "Society for the Study of Addiction", pp. 1005–1016. Exemplifying the new style was a collection of essays written by Society members and edited by Theodore N. Kelynack, *The Drink Problem in its Medico-Sociological Aspects* (London: Methuen, 1907).

reduce drunkenness and improve "national efficiency". It was by now widely recognized that moral suasion and licensing reforms had failed to remedy the drink problem: per capita alcohol consumption and expenditures had actually gone up over the history of the nineteenth-century temperance reformation. New solutions were clearly needed. One organization that tried to fill the gap left by the failure of previous movements was the True Temperance Association, founded in 1909 primarily for the purpose of encouraging public house improvements as a drink control measure.[27] Yet another alternative was put forward by the Central Control Board, whose "moderationist" alcohol policy centred on restricting the opening hours of public houses. The Board's policies received a scientific underpinning from the researchers working under the auspices of its Scientific Advisory Committee and later the Medical Research Council (MRC).[28] Their investigations supported the conclusion that alcohol consumed in moderate quantities was in fact physiologically safe, results which were quickly accepted by the medical and scientific communities. By 1920, then, science once again seemed to sanction alcohol use, and temperance reformers could no longer claim to be the reigning authorities on the alcohol problem.

These new moderationist measures for controlling the national drink problem turned out to be more successful than the programmes of the temperance movement had ever been. That success owed little to scientific research, however; science merely served to justify the new measures after they had already been put into effect. The moderationist researchers, like the temperance doctors and the SSI alcohol experts before them, were seeking to defend a particular drink control policy and a role for themselves in the alcohol arena. Consequently theirs was not quite the disinterested quest for scientific truth about the nature and effects of alcohol that they proclaimed.[29] All of these groups shared the conviction that only experts utilizing objective scientific research ought to guide policy decisions on alcohol. All claimed at different times to have the weight of such evidence on their side. Appeals to "objectivity" and "science" were employed by each group in succession as a deliberate rhetorical strategy to validate its own findings, policy prescriptions, and claims to authority in the alcohol field.

The Early Teetotal Movement, 1830–1860

Even if, as Harrison contends, one primary concern of the British teetotal movement up to around 1860 was the health consequences of alcohol

27 "True Temperance Association", *Standard Encyclopedia*, vol. 6, p. 2675.

28 Central Control Board Advisory Committee, *Alcohol: Its Action on the Human Organism* (London: HMSO, 1918).

29 A similar interpretation of the way in which scientific research was used to support existing anti-alcohol ideology is given by Thomas Babor and Barbara Rosenkrantz, "Public Health, Public Morals, and Public Order: Social Science and Liquor Control in Massachusetts, 1880–1916", in Susanna Barrows and Robin Room, eds., *Drinking: Behavior and Belief in Modern History* (Berkeley: University of California Press, 1991), pp. 265–286.

consumption, medical experts themselves made only a minimal contribution to this health-conscious orientation. According to Harrison and other biographical sources, only a few doctors were very prominent in the early temperance movement, not more than a dozen of whom actually lectured or wrote about the medical-scientific side of the question.[30] Most medical practitioners were indifferent or openly resistant to the cause and to its concern about alcohol problems. They did not want to address the issue of alcoholic disease, nor did they keep accurate records of its occurrence in their practices, because they were more concerned with protecting the privacy of their patients. Moreover, the profession as a whole still relied heavily on alcohol as an invaluable therapeutic and endorsed its domestic use as a stimulant and as nourishment.

A few anti-alcohol doctors began to contest these traditional beliefs and practices starting in the 1830s. They condemned the dietetic and domestic use of all alcoholic beverages as a "fundamental and fatal error", or the "great delusion" that was holding back the temperance reformation. Alcohol was definitely not a necessary article of diet for people in good health, and total abstinence was compatible with perfect health. The question of its medicinal use, however, was much more complicated for temperance reformers. They could cite the clinical experiences of a few unconventional yet well-known doctors such as John Cheyne, who had been practising medicine without alcohol since before the temperance era. Teetotalers John Snow and Henry Mudge found the use of alcohol to be both unnecessary and dangerous and dispensed with it in their practices during the 1830s. Some of their colleagues, however, saw their personal and professional reputations suffer because of their refusal to prescribe alcohol according to their patients' expectations and demands. One workhouse medical officer, William Batchelor, was stripped of his office in 1842 when he withheld alcohol from his patients. He published a pamphlet on his experiences, entitled "Trials and Persecutions of a Teetotal Surgeon". Many later temperance tracts likewise recounted the trials of John Higginbottom, who was branded a madman and ostracized from practising among the upper classes.[31]

These practitioners chose to emphasize the risks associated with the prescription of alcohol rather than its observed benefits. Some asserted that in their clinical experience even small doses of alcohol could have pathological effects if taken habitually.[32] They argued that no one could be sure

30 Harrison, *Drink and the Victorians*, p. 307. Biographical information is mainly taken from the *Standard Encyclopedia*.

31 "John Cheyne", *Standard Encyclopedia*, vol. 2, p. 568; "John Snow", *Standard Encyclopedia*, vol. 6, p. 2464; "Henry Mudge", *Standard Encyclopedia*, vol. 4, pp. 1832–1833, and *Dictionary of National Biography*, vol. 13, p. 1151; "William Batchelor", *Standard Encyclopedia*, vol. 1, p. 285; Gustafson, *Foundation of Death*, p. 182; Harrison, *Drink and the Victorians*, pp. 306–308.

32 William Benjamin Carpenter, *The Physiology of Temperance and Total Abstinence, being an Examination of the Effects of the Excessive, Moderate, and Occasional use of Alcoholic Liquors on the Healthy Human System* (London: Henry G. Bohn, 1853).

what constituted a physiologically safe daily dosage of alcohol; the only way to avoid possible ill effects, therefore, was simply not to drink at all. Others blamed their colleagues' advice to patients for causing addiction and the medical problems that accompanied it.[33] The small amounts of alcohol prescribed by doctors or the occasional glass of brandy taken to restore vigour or improve digestion were the inevitable starting points of intemperate habits.

At the same time, other equally prominent temperance doctors, surgeons, and scientists were still willing to allow for the occasional use of alcohol in certain medical conditions. Only during the last quarter of the nineteenth century did the medical temperance movement begin to agitate for the complete abolition of alcohol in private and hospital practice, and by that time administration of the drug had already begun to decline. Before then, alcohol was so vital to the medical profession that even temperance doctors such as James Miller and William Benjamin Carpenter allowed that small amounts had a proper "place and power" in treating some cases of disease, although they condemned the mid-century practice of administering large and frequent dosages according to Todd's system of "alcoholic therapeutics".[34]

Orthodox medical opinion also contradicted the teetotalers' beliefs about the pathological effects of alcohol on body and brain. These had first been identified in the late eighteenth century by doctors who were influential in the later founding of the temperance movement, especially Erasmus Darwin, Thomas Trotter, and the American Benjamin Rush.[35] However, these practitioners limited their counsel to the consumption of spirits and to heavy drinking. Few doctors disputed the fact that hard liquor consumed in excess could cause ill health and premature death, but most also assumed that beer and wine had no detrimental effects on health. Only after the birth of teetotalism did some people begin to assert that alcohol in all forms and in any quantity acted as a poison. Another popular medical temperance argument held that occasional or moderate drinking was dangerous because it inevitably led to heavy drinking.

Armed with these assumptions about the risks of alcohol consumption,

33 See, for example, John Higginbottom, "Alcohol, Medical Men, Publicans, and their Victims", in J. C. Street, F. R. Lees, and D. Burns, eds., *Proceedings of the International Temperance and Prohibition Convention* (London: Job Caudwell, 1862), pp. 232–239.

34 James Miller, *Alcohol: Its Place and Power* (Philadelphia: Lindsay and Blakiston, 1859); Carpenter, *Physiology of Temperance*.

35 Erasmus Darwin, *Zoonomia; or, The Laws of Organic Life*, 2 vols. (London: J. Johnson, 1794–1796); Thomas Trotter, *An Essay, Medical, Philosophical, and Chemical on Drunkenness and its Effects of the Human Body* (London: Longman and Rees, 1804); Benjamin Rush, *An Enquiry into the Effects of Spirituous Liquors on the Human Body* (Boston: Thomas and Andrews, 1785). Some of these antecedents are discussed by William F. Bynum, "Chronic Alcoholism in the First Half of the 19th Century", *Bulletin of the History of Medicine*, vol. 42 (1968), pp. 160–185, and Porter, "The Drinking Man's Disease".

temperance propagandists proceeded to use descriptions and catalogues of morbid alcoholic conditions in order to frighten their audiences into taking the pledge. They displayed pictures of the notorious hob-nailed liver and recounted Dr. William Beaumont's observations of alcoholic damage to the stomach in the remarkable medical case of Alexis St. Martin. The chronic and acute diseases associated with habitual drinking and drunkenness, including heart and liver disease, dyspepsia, dropsy, delirium tremens, and alcoholic insanity were listed repeatedly in medical temperance tracts. Advocates invoked statistics on mortality, lunacy, accidents, and lost work production caused by excessive indulgence, with occasional reference, from the domain of social science, to figures on how much crime and poverty alcoholism caused. Life expectancy tables drawn from temperance life insurance associations were likewise frequently cited in order to show that the teetotalling groups enjoyed better health than the drinking ones. Another health issue was the appearance of disease and debility in the offspring of drinkers, or alcoholism as a cause of what would later be termed "racial degeneration".[36] A prize-winning temperance essay by Dr. Ralph Barnes Grindrod in 1839 provided the first comprehensive review of these clinical observations on how individual and national health were adversely affected by high levels of alcohol consumption.[37]

Already during the 1830s and 1840s, a few temperance lecturers had also begun to expound the scientific case for teetotalism, based on studies of the chemical composition of alcoholic beverages and theories about the physiological action of alcohol. Joseph Livesey's popular "Malt Lecture", first given in 1833 in Preston, Lancashire, was the original scientific temperance presentation.[38] In it the teetotal pioneer Livesey purported to expose the meagre nutritional value of beer and other alcoholic beverages. He evaporated all the liquid from a sample of ale in order to demonstrate how little solid matter it really contained and delighted his audiences by setting fire to several dishes of alcoholic beverages in order to demonstrate their poisonous contents. Following Livesey's example, several chemists later gave similar illustrated scientific lectures on alcohol, while a few temperance doctors became well known for the scientific content of their popular lectures.[39] Another early teetotal and prohibitionist leader, Frederic Richard Lees, was called to the temperance platform in 1836, at the age of only 20,

36 William F. Bynum, "Alcoholism and Degeneration in Nineteenth-Century European Medicine and Psychiatry", *British Journal of Addiction*, vol. 79 (1984), pp. 59–70.

37 Ralph Barnes Grindrod, *Bacchus. An Essay on the Nature, Causes, Effects, and Cure of Intemperance* (Hartford: S. Andrus and Sons, 1851).

38 Joseph Livesey, *A Temperance Lecture based on the Teetotal Principle; including an Exposure of the Great Delusion as to the Properties of Malt Liquor* (Preston: privately printed, 1836); Harrison, *Drink and the Victorians*, pp. 120–125.

39 Examples from the *Standard Encyclopedia* include Thomas Allen Smith, Ralph Barnes Grindrod, James B. Kirk, and James Murray Macculloch.

to refute the contention that teetotalism was not medically sound.[40] His success on that occasion led to a 60-year career as a prolific lecturer and writer, specializing in both the scriptural and scientific grounds for abstinence. In 1843, Lees returned to England after earning a German Ph.D. and became the first temperance doctor to make use of the latest theories in physiological chemistry as evidence that alcohol could not act as a food.

The next important medical-scientific temperance writer was the respected physiologist and science popularizer William Benjamin Carpenter, who came from a family of teetotalers and social activists. Although he wrote and lectured for the cause, Carpenter never joined any temperance society in order to "keep himself free from even the appearance of partisanship". Two essays that he published in 1847 and 1850 were among the first and most influential works analyzing the physiological action of alcohol, especially the question of its nutritional value.[41] During the first half of the century, medical temperance writers such as Lees, Carpenter, and the surgeon James Miller proved their point that alcohol was physiologically unnecessary on the basis of two kinds of direct evidence: the experiences of non-alcoholic medical practitioners and the reported experiences of working men, armies, and Arctic explorers as to how alcohol adversely affected strength and normal body temperature.[42] After 1843, they could further argue that the dietetic and medicinal use of alcohol was theoretically unsound, according to Justus von Liebig's new science of physiological chemistry.

Liebig had classified alcohol as a "respiratory food", or a substance that, like sugars and fats, could be oxidized in the body yielding heat or energy. Opponents of teetotalism and defenders of alcoholic therapeutics enlisted Liebig's theory in their defence of the moderate consumption and prescription of alcohol. While sharing the temperance reformers' concerns about the evils of alcohol abuse, they argued nonetheless that alcohol when used responsibly could produce heat and force, replace ordinary foods in the diet, and save tissues from being broken down when other food was not available.[43] At the same time, Liebig's conclusions were appropriated by teetotal doctors as well. Lees, for example, thought that Liebig when "rightly interpreted" was an ally to the temperance crusade.[44] Even though his

40 "Frederic Richard Lees", *Standard Encyclopedia*, vol. 4, pp. 1527–1528; Frederic Richard Lees, *The Selected Works of Dr. Frederic Richard Lees*, 10 vols. (London: National Temperance Publication Depot, 1884–1887).

41 William Benjamin Carpenter, "The Physiological Effects of Alcoholic Drinks", *British and Foreign Medical Review*, vol. 24 (1847), pp. 515–548, and *On the Use and Abuse of Alcoholic Liquors in Health and Disease* (1850; Boston: Crosby and Nichols, 1851), p. xvii. Biographical information from *Standard Encyclopedia*, vol. 2, p. 522, and an introductory memoir in Carpenter, *Nature and Man* (London: Kegan Paul, 1888), pp. 3–152.

42 Carpenter, "Physiological Effects", pp. 525–541.

43 Warner, "Physiological Theory"; George Henry Lewes, "Food and Drink", *Blackwood's Magazine*, vol. 83 (1858), pp. 325–343, 402–415, 515–525.

44 Lees, *Selected Works*, vol. 6, pp. 152–199.

theory awarded alcohol some value as a food, Liebig himself had supposedly asserted that it was neither a safe nor an efficient article of the diet because of its toxic action. Both Carpenter and Miller argued that the combustion of alcohol in the body did more harm than good by using up oxygen that would be better spent warming the body in the normal way or burning off waste materials in the blood, and they criticized the followers of Liebig for focusing exclusively on the mere chemical process of combustion while ignoring the more important deleterious actions of alcohol upon the vital functions.[45]

Carpenter's works on the physical basis of abstinence principles were published in order to satisfy "the public demand for temperance literature of a superior class".[46] Temperance doctors intended their lectures and literature for two distinct audiences: working men who were concerned about their health and beginning to take an interest in science during the early Victorian era, and members of the medical profession or other educated classes who might be persuaded to give up the use of alcohol on rational medical grounds. To a middle-class, educated audience, the rational advocacy and scientific propaganda of respectable medical men would certainly be more palatable than the evangelical or low-brow, reformed-drunkard style of lecturing common to the religious and working-class segments of the temperance movement. The desire to lend the movement a more professional and "scientific" image for the benefit of a more sophisticated audience was similarly reflected in James Miller's use of the term "nephalism" as a scientific-sounding alternative to "teetotalism".[47]

The dissemination of clinical, theoretical, and experimental findings on alcohol was only one technique used by the early teetotal movement to exploit medical-scientific knowledge and authority. Teetotalers also appropriated for their own purposes the opinions of any eminent medical men past or present who had ever publicly condemned the excessive consumption of alcoholic beverages, regardless of whether these men were really supporters of the cause. Such medical anti-alcohol pronouncements were taken to be especially valuable when they were made independently of the temperance cause: many dated from before the 1830s or came from prominent doctors who were not known as teetotalers, such as a statement on the poisonous action of alcohol made by the surgeon Sir Astley Cooper at a temperance meeting in 1831.[48]

The carefully-worded manifestos against alcohol that appeared in 1839 and 1847 amounted to yet another attempt to exploit medical authority.

45 Carpenter, *Use and Abuse of Alcoholic Liquors*, p. 122; Miller, *Alcohol: Its Place and Power*, p. 62.

46 British and Foreign Medico-Chirurgical Review, vol. 4 (1849), p. 250.

47 James Miller, *Nephalism, the True Temperance of Scripture, Science, and Experience* (Glasgow: Houlston, 1861).

48 "Sir Astley Cooper", *Standard Encyclopedia*, vol. 2, p. 715.

These declarations were designed to persuade both the general public and legislators to adopt the temperance platform. The first one was signed by 79 eminent medical men from London and the second by over 2,000 practitioners from throughout Britain and India. Each stated, in short, that the signatories believed that alcohol ought not to be carelessly and excessively prescribed, that the use of alcohol could not improve health in any way, and that heavy drinking caused disease and much human misery. In themselves these were not particularly controversial views, but temperance advocates rather loosely interpreted the declarations as showing that the medical profession as a whole agreed with them in condemning all alcohol use as unsafe.[49]

Of course the very presence of medical men in the anti-alcohol movement also served to further the cause, so that from the start temperance leaders were interested in recruiting more doctors to their forces. They hoped to take advantage of these men's relatively high social status and broad influence. Both ordinary general practitioners and elite medical consultants could encourage people by word and example to abandon erroneous beliefs and practices. Doctors were also specially qualified because of their professional experience: "The practice of abstinence by members of the healing art is more than ordinarily impressive and useful, because they, beyond all others, are supposed to be well acquainted with the nature and properties of alcoholic drinks."[50] Finally, this perception of the special power, prestige, and competence of doctors would help to explain why the teetotal and prohibitionist pioneer Lees was always referred to as "Doctor Lees" even though he never actually practised either medicine or science. He and his teetotal colleagues no doubt believed that this title further validated his medical and scientific pronouncements.

A small number of medical men did indeed make significant contributions to furthering the early temperance cause. They were counted among the original teetotalers, the founders of temperance societies, and the popular speakers on medical and scientific topics. But how did doctors in turn benefit from this social activism? Why did they choose to become abstainers, to speak out in favour of temperance reform, or even to become leaders of teetotal societies? No doubt in many cases religious and humanitarian sentiments were a primary motivation, as they were for all classes of teetotalers. Carpenter, the son of a Unitarian minister, was an active member of his church throughout his life. Other doctors, such as Daniel Richmond, Henry Mudge, and Frederic Lees, wrote on temperance from both the medical and biblical perspectives. Mudge even published a sermon in 1840

49 "Medical Declarations against Alcohol", *Standard Encyclopedia*, vol. 4, pp. 1736–1737.

50 Henry Mudge, "The Medical Profession in Relation to Abstinence from Alcoholic Drinks, and to the Legislative Prohibition of their Common Sale", in *Proceedings of the International Temperance and Prohibition Convention*, pp. 244–248.

entitled "Teetotalism a manifestation of love". Even a largely secular temperance tract as Grindrod's was proclaimed to be written "in a Christian spirit ... with a design to benefit the bodies, circumstances, and souls of men", since in his estimation intemperance was both a "moral and physical scourge", a matter of both "Christian charity and self-preservation".[51]

For most of these teetotalers there is little biographical information available that might explain their involvement in the cause.[52] In the case of John Forbes, his advocacy of a variety of unorthodox medical and scientific theories — including phrenology, mesmerism, homeopathy, and hydropathy, in addition to temperance — would lead one to assume that he was simply a medical nonconformist, like many of Harrison's prohibitionists. Another kind of experimentation with health was vegetarianism, which teetotalers such as Lees also practised. One might further assume that many physicians and surgeons were drawn to the cause because of having seen the disastrous effects of intemperance in their professional work. Curtailing this evil and counteracting misconceptions were just part of their job as health experts. A few individuals may indeed have been moved by such experiences, including J. M. MacCulloch and B. W. Richardson, but in fact many others appear to have converted to teetotalism in their youth, or when they discovered from their own experiences that alcohol was not necessary for maintaining bodily and mental vigour. These men were surely concerned primarily about their own health and considered abstinence simply to be a reasonable course of action: as intellectuals they were attracted to "the pursuit of rationality in diet".[53]

Another of Harrison's conclusions about the motivations of the mid-century prohibitionists probably also applies to the temperance doctors as a group: like other members of the middle and upper classes, they undoubtedly perceived lower-class drunkenness as a threat to social stability and their way of life. Grindrod's biography provides evidence of such concerns. It was said that he took up the temperance cause as a result of his dislike of the behaviour of drunken working men, while he and a few other doctors further expressed in their temperance works anxiety about alcohol as a cause of crime and immorality as well as of ill health. To such men, temperance reform was aimed at inculcating social discipline in the lower classes or producing "self-directed, rational, sober citizens, who, once created, could ensure the effectiveness of laissez faire policies".[54]

The Medical Temperance Movement, 1860–1907

Two events were particularly instrumental in giving rise to the British

51 Grindrod, *Bacchus*, pp. vi–x.

52 Harrison, "The British Prohibitionists".

53 Ibid., pp. 399–400.

54 Ibid., p. 418.

medical temperance movement after 1860. First, a shift in the class composition of the newly-revived temperance movement meant that its leadership and audiences were now more predominantly middle than lower class. This change coincided with the challenge posed by natural scientists to the cultural authority of religion following the appearance of Darwin's theory of evolution and the concomitant tendency of these new intellectual authorities to employ science for political and social ends. Second, in the realm of alcohol studies, 1860 marked the appearance in England of new experimental findings on the physiological and chemical fate of alcohol in the body by the French investigators Lallemand, Perrin, and Duroy.[55] This research sparked renewed interest in the question "Is Alcohol Food or Physic?", as controversy over the medical and dietetic uses of alcohol flared up repeatedly during the 1860s and 1870s in both the medical and the popular press. The public dialogue that took place surrounding this research was a turning point in the history of alcohol science in that it created "a demand for information on the part of the public ... [and] led to the germination of a spirit of research".[56]

Lallemand had found that after a dose of alcohol was ingested most of it was simply excreted from the body unchanged; from this he concluded that alcohol could not act as a food. However, his experimental results remained open to dispute and to conflicting interpretations. At first they seemed to vindicate the temperance cause, and British teetotalers eagerly reported that it had now been proved that alcohol could not be utilized by the body in any way. Other investigators, some connected with the temperance movement, confirmed that finding. For some temperance advocates, however, the conclusion that alcohol simply passed through the body unchanged was disturbing because it implied alcohol did no harm. Consequently, one temperance doctor was eager to dismiss this evidence as a mere "scientific detail" that did not change the obvious "fact" that enough alcohol must remain in the tissues to cause physiological damage.[57]

Defenders of alcohol and of Todd's system of medicine, on the other hand, pointed out that the French investigators had not bothered to quantify their results; it was therefore impossible to conclude whether or how much alcohol had been oxidized and used by the body. Moreover, within a year the French results had been experimentally refuted by Dr. Francis Anstie, editor of the *Practitioner* and a student of Todd, who for his efforts became known as an enemy of the temperance reformation. Anstie found that only a small percentage of consumed alcohol was either eliminated or left in the tissues. Therefore most of it must be broken down in the body. Anstie and

55 Warner, "Physiological Theory", pp. 244–248.

56 John Turner Rae, "The Educational Development of National Sobriety", in T. N. Kelynack, ed., *The Drink Problem of To-day*, 2nd ed. (London: Methuen, 1916), p. 245.

57 Mitchell, *The Drink Question*, p. 108.

many others interpreted this as scientific evidence further supporting the "clinical fact" that alcohol could somehow be nourishing in sickness.[58]

By the 1870s, however, temperance advocates seemed willing to accept Liebig's hypothesis and Anstie's evidence that alcohol was oxidized, because they could focus instead on mounting experimental evidence that this combustion did not provide any useful energy or heat. Much of this experimental work was carried out by the leading British expert in the medical-scientific study of alcohol, the temperance advocate Sir Benjamin Ward Richardson.[59] Richardson was a practising physician, prolific medical researcher, and influential sanitary reformer. He served as the president of the health section of the SSA and surely perceived his temperance work as falling within the sphere of preventive medicine. Yet he only became a teetotaler in the late 1860s, as a direct result of some research he had undertaken into the physiological effects and medicinal efficacy of various chemical substances, including the alcohols. He explained in his temperance writings that he had begun this work with no preconceptions about alcohol; the facts he discovered "forced" him to adopt total abstinence principles as the only logical course of action.

Richardson's years of experimental work led to discoveries about how alcohol affects the circulatory, digestive, and nervous functions. He administered alcohol to animal subjects and then observed the effects produced at various stages of intoxication. He watched his animal subjects gradually lose their muscular co-ordination, exhibit lessened "will and judgment", and finally pass out. He also contributed to the clinical and experimental study of chronic alcoholic disease. This work provided him pathological details with which to shock audiences during his many temperance lectures of the 1870s and 1880s. He liked to display startling pictures of organs that had become engorged with blood owing to the action of alcohol on the vascular system, and he once recounted a particularly irrelevant story of how he found at the site of a train accident the blood-engorged brain of the decapitated drunken victim.[60]

58 Francis Edmund Anstie, *Stimulants and Narcotics, Their Mutual Relations: With Special Researches on the Action of Alcohol, Aether, and Chloroform on the Vital Organism* (London: Macmillan, 1864).

59 Richardson was best known in temperance circles for his "Cantor Lectures" on alcohol delivered before the Edinburgh Society of Arts in 1874–1875, reprinted in *Ten Lectures on Alcohol* (New York: National Temperance Society and Publication House, 1887), pp. 1–190. His alcohol experiments were best known from his *Results of Researches on Alcohol* (London: W. Tweedie, 1877). "Benjamin Ward Richardson", *Standard Encyclopedia*, vol. 5, pp. 2283–2284.

60 Richardson, "Cantor Lectures", p. 90. In a similar fashion, propagandists such as Lees, Carpenter, and Miller all recounted in gruesome detail how Dr. Percy had in 1839 injected various doses of alcohol into the stomachs of dogs and then watched them collapse, whimper for a time, and die painfully in order to prove that alcohol was indeed a poison. Readers were reminded that the kind of torture and suffering inflicted upon these dogs in the name of science was repeated daily by countless drunkards upon their own bodies and minds.

Richardson's investigations also encompassed the food issue. He concluded that alcohol was neither heat- nor force-giving and that there was no evidence that it was fat-forming. Therefore alcohol consumption could have no advantages to counterbalance the physical damage that it manifestly caused. Richardson was the first researcher actually to measure the body temperature of alcoholized animals, discovering that indeed ingested alcohol did not warm the body but in fact dangerously reduced its temperature. To determine whether or not alcohol could be converted into muscular energy, he measured the lifting power of a frog's leg and found that it was enfeebled with alcohol. Nineteenth-century temperance writers eagerly seized on this finding, along with another simple and much-cited study by the army doctor E. A. Parkes showing that drinkers could do less hard muscular work than abstainers, as the best available proof for their belief that alcohol could not be classified as a food or stimulant.[61] None of the investigations into this issue were particularly impressive, yet they were pronounced decisive by temperance reformers who were willing to latch onto any scientific evidence that suited their needs.

Richardson came to be the acknowledged leader of the medical temperance movement for his key role in showing that alcohol use was physiologically unnecessary and unsound; he credited himself with thus having laid the "scientific basis of the temperance reformation". With Richardson as their catalyst, the "medical Cromwells" of the temperance crusade promoted themselves as the only qualified producers and users of medical-scientific knowledge concerning alcohol. They banded together during the last quarter of the century in an attempt to consolidate their position of authority in investigating the alcohol question. In 1869, the National Temperance League (NTL) began campaigning to alert medical professionals to the national drink problem and to their potential role in addressing it. The League held conferences and annual breakfast meetings with the British Medical Association, published a medical temperance journal, organized lectures and distributed tracts, and arranged the 1871 medical declaration against alcohol. In 1876, the NTL spawned the Medical Temperance Association as a "rallying-point for all medical abstainers". The goals of this specialized organization were to provide encouragement to teetotal doctors, to convert more practitioners to the cause, and to convince the profession in general that alcohol ought not be used in sickness or health.[62] The association reached members of the profession by means of joint meetings and a journal that it occasionally sent free to thousands of colleagues.

61 Edmund A. Parkes, *A Manual of Practical Hygiene*, 6th ed. (London: William Wood, 1883), vol. 1, pp. 319–324.

62 John James Ridge, *The Aims and Claims of the British Medical Temperance Association* (London: National Temperance Publication Depot, 1886), p. 3; "Temperance and Physiology", *Medical Temperance Journal*, vol. 1 (1870), pp. 1–3; "Origin and Rules of the British Medical Temperance Association", *Medical Temperance Journal*, vol. 7 (1876), pp. 164–168.

The MTA's leading spokesmen included its founder and secretary John James Ridge, a medical officer of health, long-time teetotaler, and member of religious temperance organizations; Richardson, who served as its president from 1879; James Edmunds, a popular speaker and senior physician to the London Temperance Hospital; and Sir Victor Horsley, who produced one of the last and most highly regarded popular presentations of temperance science, the 1907 text *Alcohol and the Human Body*.[63] Richardson and Ridge in particular championed the view that medical professionals brought special qualities to the temperance cause that set them apart from other advocates and gave them a distinct role to play.

The teetotal movement clearly suffered from a bad reputation because of the kind of men it attracted to its ranks and its tendency to present only "one-sided statements, garbled facts, or lying statistics". The involvement of medical professionals would help to make the cause more respectable and attract a higher-class following. One reporter even admitted that the annual NTL/BMA breakfast was designed in part to "prove to a large body of medical men that teetotalers are not all as repulsive and offensive" as was commonly believed.[64] The rational tone of most medical temperance literature was played up as an alternative to the usual emotional entreaties and oratorical displays of lay temperance reformers: "Though I do not want to appeal to your emotions, or to make a fine speech with fine phrases to catch you through your feelings, I want to catch you, if I can, by your plain reason or common understanding."[65] Teetotal doctors tried to set themselves apart in style and approach from the lay and clerical "enthusiasts" with their biased and exaggerated statements about the evils of alcohol. As "cool-judging philosophers" they spoke in a more objective voice and with the backing of scientific qualifications. They claimed to be simply "men of science" presenting the "hard and dry facts" of the case, not preaching on the evils of intemperance.[66] As the eminent physician Sir Andrew Clark said of his anti-alcohol advocacy: "I do not desire to make out a strong case, I desire to make out a *true* case. I am speaking solemnly and carefully in the presence of truth."[67]

Temperance doctors claimed the "physical basis" of abstinence principles

63 "John James Ridge", *Standard Encyclopedia*, vol. 5, pp. 2286–2287; "James Edmunds", *Standard Encyclopedia*, vol. 3, p. 881; Stephen Paget, *Sir Victor Horsley: A Study of his Life and Work* (London: Constable, 1919), pp. 230–254; Victor Horsley and Mary Sturge, *Alcohol and the Human Body: An Introduction to the Study of the Subject, and a Contribution to National Health* (London: Macmillan, 1907).

64 Frederick Arthur McKenzie, *Sober by Act of Parliament* (London: Swan Sonnenschein, 1896), p. v; *Medical Temperance Journal*, vol. 9 (1878), pp. 15–20.

65 Andrew Clark, *The Action of Alcohol upon Health* (London: Church of England Temperance Society, 1878), p. 10.

66 Carpenter, "Physiological Effects", p. 524; Richardson, *Alcohol in its Effect on Life and Health* (Birmingham: Wilkinson and Smith, 1874), pp. 12–13.

67 Clark, *Action of Alcohol*, p. 9. See also Henry Munroe, *The Physiological Action of Alcohol* (London: F. Pitman, 1865).

as their special territory, distinct from the moral and legal domains, which were already well covered by others. The action of alcohol on the mind and body was "part of that physiology which is the 'proper study' of the profession. The world waits for a clear and authoritative declaration."[68] Physicians could therefore be expected to fill such roles as guiding policy decisions on alcohol, educating the public on temperance and health, and conducting physiological research. On the question of advising the government on alcohol policy, doctors had already proven themselves miserable failures; when called upon to testify before the 1877 Select Committee on Intemperance, the five medical witnesses presented contradictory and unsubstantiated opinions on the benefits and dangers of alcohol consumption. The lack of consensus led the Committee to conclude that there seemed to be no theory "which is as yet so generally accepted by the medical profession as would warrant its being adopted as a basis for legislation".[69]

The medical profession was much more successful in raising public awareness of the drink problem, or in following Richardson's directive that "the primary duty of all who would join in the war of expulsion of the common enemy is to teach, proclaim, demonstrate the same facts as I have today".[70] As early as 1857, at least one physician and scientist associated with the temperance cause had already begun to argue that only scientific education in the physiological facts about alcohol would persuade people to give up its use, whereas moral and legal suasion were both doomed to fail.[71] In 1903, the medical profession as a body threw its support behind a campaign for compulsory scientific temperance instruction in the public elementary schools. The famous 1904 Physical Deterioration Report likewise sanctioned educating parents and children in the science of alcohol, rather than "expatiating on the moral wickedness of drinking", as the best means of combating the problem of alcoholic deterioration. A temperance and hygiene syllabus was indeed introduced into the schools in 1909, the contents of which were heavily based on Richardson's temperance lesson books.[72] The desire of middle-class doctors and other reformers to see

68 Ridge, *Aims and Claims*, p. 3.

69 Final Report of the Select Committee of the House of Lords for Inquiry into Prevalence of Habits of Intemperance and Effects of Recent Legislation, 1878–1879, pp. x, 569–571. The 1896 Peel Commission invited only two medical witnesses. *Minutes of Evidence taken before the Royal Commission on Liquor Licensing Laws* (London: HMSO, 1898), pp. xxxiv, 631–637, 715–724.

70 Richardson, "The Action of Alcohol on the Body", reprinted in *Ten Lectures on Alcohol*, p. 26; *The Temperance Lesson Book. A Series of Short Lessons on Alcohol and Its Action on the Body* (London: National Temperance Publication Depot, 1878).

71 Thomas Laycock, *The Social and Political Relations of Drunkenness*, 2nd ed. (Edinburgh: Myles Macphail, 1857).

72 David Gutzke, "'The Cry of the Children': The Edwardian Medical Campaign Against Maternal Drinking", *British Journal of Addiction*, vol. 79 (1984), pp. 71–84; E. Claude Taylor, "The Teaching of Temperance", in Kelynack, *The Drink Problem*, pp. 211–228; Board of Education, *Syllabus of*

working-class school children taught about temperance and hygiene could also certainly be interpreted as yet another example of science being used as a means of socialization or social control.[73]

One final stated goal of the anti-alcohol doctors of the Medical Temperance Association was the promotion and implementation of research into the physiological side of the alcohol question. Researchers were called upon to provide the material upon which temperance teaching and drink control action would be based — a duty that further set the temperance doctors apart from the movement's mere propagandists. In reality, though, few members of the MTA ever conducted such research, and none was ever sponsored by the organization. The doctors and scientists were nevertheless confident that they might reap certain professional rewards for their work. In fact, after the introduction of the school temperance syllabus, temperance doctors found new opportunities writing textbooks and even working as lecturers in elementary schools and teachers' colleges. They could also hope that there might be funding to be awarded and careers to be made in the alcohol research domain, as much still remained to be learned about the physiology and pathology of alcohol. Most likely, though, it could be expected that the reputation and cultural influence of medical professionals would be enhanced once they had achieved recognition as scientific authorities on the alcohol problem.

> A century devoted to its study would scarcely suffice to bring the flood of light upon it which the whole subject requires. But it will be done, and all the more honour and credit will be due those who began the almost superhuman task of drawing swords against one of the most gigantic prejudices the world has ever cherished.[74]

The Society for the Study of Inebriety, 1907

The alcohol experts of the Medical Temperance Association belonged to the temperance movement, although they tried to distinguish themselves as a special branch. The relationship between medical scientists and temperance reformers was more openly strained within the forum of the Society for the Study of Inebriety. Since its early leaders had been mostly abstaining doctors who also belonged to temperance organizations, the Society's official stance during its first decades under founder and president Norman Kerr was that its medical anti-alcohol efforts were complementary to those

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Lessons on "Temperance" for Scholars Attending Public Elementary Schools (London: HMSO, 1909); *Report of the Inter-Departmental Committee on Physical Deterioration* (London: HMSO, 1904), vol. 1, pp. xxxii, 1.

73 Steven Shapin and Barry Barnes, "Science, Nature and Control: Interpreting Mechanics' Institutes", *Social Studies of Science*, vol. 7 (1977), pp. 31–74.

74 Mitchell, *The Drink Question*, p. 206.

of the temperance movement. By around 1900, however, some members of the Society had begun to present themselves as operating on a separate plane from the mere "moralists and social reformers" of the movement. For some factions within the SSI, this break was meant to be absolute: they opposed the temperance cause entirely and sometimes even mocked the beliefs and practices of their teetotaling colleagues. Among these harsh critics were the two men who served as presidents of the Society between 1900 and 1910, Harry Campbell and Thomas Claye Shaw. Their views, however, were not representative of the majority of the Society's members. Instead, during the first decade or so of the century, temperance doctors still dominated the organization, and their new, slightly sceptical attitude towards the temperance movement was best represented by Theodore Kelynack, the Society's long-time secretary and editor.[75]

Kelynack and his medical colleagues were gently critical of the way in which temperance reformers up to that point had addressed the problem of intemperance. They suggested that "extravagances and fanatic zeal" had distracted workers from the true path of scientific research to successful control of alcohol abuse and the liquor traffic: that of scientific research. "The time is ripe for a thorough revision" of the temperance movement's failed legislative proposals, Kelynack declared in the 1907 collection of essays on the medico-sociological aspects of drink:

> Much if not all of our legislative efforts have been little better than blind experiments, temporary expedients and compromises with selfish individual or vested interests. Throughout there has been a conspicuous lack of any clear recognition of scientific principles which might guide thought and govern action.[76]

Medical-scientific workers, in contrast, would undertake new investigations into the sociological and medical sides of the alcohol question. Their findings would eventually have practical implications for public policy. Temperance reformers had failed to realize that policy decisions must wait until all the scientific data were in; they lacked, as Kelynack put it, "patience, self-restraint, and a thorough scientific appreciation" of the issues.

Science was considered the "directing and controlling power" that would solve the drink problem if it were merely "submitted to the stringent tests of accurate inquiry". In his editorials in the Society's *Journal* and his contributions to the 1907 volume, Kelynack constantly reiterated this new research orientation and the theme of using "strictly scientific methods" as a firm foundation for future rational action. These scientific methods consisted mainly of physiological and pathological experiments, as well as the

75 The quotations cited in this section come from Kelynack's introduction and final chapter on "The Arrest of Alcoholism" in the 1907 volume *The Drink Problem*, pp. 1–20, 261–287.

76 *Ibid.*, p. 20.

collection and interpretation of statistical data on the relation of alcohol to mental disease, public health, infant mortality, crime, and pauperism.

Like the leaders of the MTA, Kelynack found it rhetorically useful to emphasize the value of a science-based approach to the drink problem. It served to distance his Society's supposedly new approach from unsuccessful temperance methods and legislation; it legitimized the need for expert skills and knowledge; and it justified the call for more research. Too little was known about the nature and extent of the drink problem, so that more careful and unprejudiced research was called for before any successful solution could be found. A scientific body such as the SSI, whose job was to investigate and not to lobby or propagandize for any given position, might be able to conduct some of this crucial work if, by chance, it were to receive funding. Over the next few decades members repeatedly urged that the Society acquire means to undertake its own research, but the organization was never taken seriously enough to win any backers. Ironically, the research initiative only got off the ground in the 1940s when the Society grudgingly accepted funding from a group of reforming brewers.[77]

While the Society for the Study of Inebriety did not officially support or propose any drink control measures, it is clear that leading members like Kelynack still believed in legislation to restrict the liquor traffic and therefore continued to speak in favour of such principles as Local Option and Sunday closing. Thus, in the concluding chapter to the 1907 volume, after criticizing the temperance reformers for their inadequate solutions to the drink problem and outlining a supposedly superior scientific approach, Kelynack as the spokesperson for the SSI had nothing new to offer and fell back on supporting total abstinence and licensing legislation. The old wine had simply been poured into new bottles; despite all the rhetoric, the Society had not yet broken away from its temperance origins.

The New Moderationist Paradigm, 1914–1920

A clean break with the ideology of the temperance movement was not made until the First World War, by the Scientific Advisory Committee to the Central Control Board, appointed in 1916 and headed by Lord D'Abernon. This was the first organized group of medical scientists to offer a science-based alternative to the temperance and prohibitionist solutions to the drink problem. The Advisory Committee published in 1918 a report entitled *Alcohol: Its Action on the Human Organism*, which selectively reviewed the existing research on the subject. Most of the evidence led to the conclusion that alcohol consumed in small or moderate quantities had little effect on the capacity to function normally, and that its intoxicating effects could be minimized by following certain rules of thumb. The Committee further

77 Wellcome Institute for the History of Medicine, Contemporary Medical Archives Centre, Archives of the Society for the Study of Addiction to Alcohol and Other Drugs, A4, Minute Book of Council meetings, August 1, 1944, and October 14, 1944.

suggested that more research was still needed and encouraged the government to sponsor this work. Within the next two years, three special reports on alcohol research were thus produced by the Medical Research Council, most notably those by Edward Mellanby and Horace Middleton Vernon.[78]

The scientific findings of the Advisory Committee and MRC were relevant to the question of enacting better drink control measures during and just after the war. Drunkenness at this time was perceived less as a moral problem than as an economic one, in terms of industrial efficiency and national prosperity. At the start of the war, Chancellor of the Exchequer David Lloyd George and the authorities he consulted on the inefficiency of troops and munitions workers placed the greater part of the blame on drinking habits, and apparently the minister initially threatened to impose national prohibition as a solution.[79] Instead, various measures to restrict the drink trade were gradually enacted with minimal resistance, and together they constituted a new departure in drink control. Liquor consumption and arrests from drunkenness dropped sharply when the Ministry of Food reduced the available supply and strength of beer and spirits, the Exchequer sharply increased taxes on all alcohol, and the Central Control Board ordered the state purchase of the liquor trade in selected areas (the Carlisle experiment), and more importantly imposed strict restrictions on the hours of retail sale, so that public houses could open for only five and a half hours per day.

Thus when the scientists of the Advisory Committee and the MRC came to the study of the alcohol problem in the 1910s and 1920s, it was with the express intent of supporting certain proven state alcohol policies. They focused their research on the issue of how alcohol affected muscular and mental activity, hoping to show when, how much, and what kind of alcohol consumption impaired efficiency. Laboratory experimentation on humans was modelled on the alcohol research of the teetotal psychiatrist Emil Kraepelin and often utilized various apparatus derived from his ergograph. Starting around the turn of the century, British, continental, and American researchers had begun investigating the power, precision, and duration of unskilled and skilled activities ranging from lifting weights to typewriting, the facility of mental operations such as memorization and word-association, and the speed of neuro-muscular reactions under the influence of alcohol.[80]

78 Edward Mellanby, *Alcohol — Its Absorption into and Disappearance from the Blood under different Conditions* (London: HMSO, 1919); H. M. Vernon, W. C. Sullivan, M. Greenwood, and N. B. Dreyer, *The Influence of Alcohol on Manual Work and Neuro-muscular Co-ordination* (London: HMSO, 1919); William McDougall and May Smith, *The Effects of Alcohol and some other Drugs during Normal and Fatigued Conditions* (London: HMSO, 1920).

79 Arthur Shadwell, *Drink in 1914–1922: A Lesson in Control* (London: Longmans, Green, 1923).

80 W. H. Rivers, *Influence of Alcohol and Other Drugs on Fatigue* (London: Edward Arnold, 1908); J. S. Billings *et al.*, eds., *Physiological Aspects of the Liquor Problem*, 2 vols. (Boston: Houghton, Mifflin, 1903).

The MRC sponsored further work along these lines by Vernon and William McDougall, while Mellanby and Vernon set out on another tack to define what constituted a "moderate" or physiologically safe dose of alcohol. They wanted to determine how rates of oxidation and blood-alcohol levels correlated with signs of actual intoxication, as well as how these effects were related to such factors as the time interval between drinks, dilution, and whether or not the alcohol was taken with food.

This latter line of research by Mellanby and Vernon provided a clear scientific justification for the continuation and extension of the successful wartime measures. In particular, the closing of pubs at times of the day when people were likely to be drinking on empty stomachs received a scientific imprimatur when it was termed the "physiological regulation of the conditions of drinking". Likewise scientific findings on how intoxication correlated with dilution led one researcher to throw his weight behind a scheme of differential taxation that would encourage people to buy weaker alcoholic beverages.[81] Scientific research was presented as if it were guiding these policy decisions, but in fact these measures had initially been introduced simply out of common sense and desperation. It was obvious that the real advantage of the government's scheme was not its "physiological regulation" of hours, but simply the fact that closing the pubs earlier at night sent drinkers home earlier, making it easier to keep public order and get them to work on time the next morning.[82] Policy-makers could argue, however, that they required further support from science in order to justify extending these measures beyond the crisis of wartime.

The solution to the drink problem was thus held to lie in encouraging moderation, not abstinence. The teetotal and prohibitionist programmes had clearly failed after almost a century of effort, while the wartime measures achieved immediate results. This rejection of the temperance approach was also accompanied by a wave of scientific challenges to previous temperance findings on other aspects of the alcohol question, including the food issue, comparative life expectancies, and the alcoholic causation of cirrhosis and insanity. New research showed that temperance science had been flawed, and opponents therefore asserted that its biased conclusions had led to erroneous suggestions for solving the drink problem. Yet again, the new alcohol literature stressed the supposed objectivity of the latest research and the researchers themselves. As the Advisory Committee explained in 1918, the temperance doctors had been out "less to gain knowledge than to find arms and arguments to support their preconceived opinion".[83] There could be no objective study of alcohol until it was removed from temperance

81 H. M. Vernon, *The Alcohol Problem* (London: Bailliere, Tindall and Cox, 1928); Lord D'Abernon, "Scientific Basis of Drink Control", *British Journal of Inebriety*, vol. 17 (1920), pp. 73–85.

82 Shadwell, *Drink in 1914–1922*, pp. 147–156.

83 *Alcohol: Its Action*, pp. vii–viii.

interests; only a public body such as the MRC could provide an "impartial statement of the case".

The superiority of the new moderationist research over that of the temperance doctors was further evident from the fact that the later group employed rigorous scientific methodology. They performed multiple repetitions of every test, used controls, and even tried to avoid influencing results by disguising the taste of the alcohol ingested by the experimental subjects. The tests were such that results could always be quantified in order to avoid subjective interpretations, while the special laboratory devices allowed precise measurements of various movements. Clearly all of this quantification and mechanization was intended to emulate the methods of the exact sciences. Another tactic for achieving at least the appearance of rigour was to fill the research reports with hundreds of pages of unreadable numerical tables and graphs. Even photos of the apparatus and the lab itself sometimes appeared, as if to prove that this research was "real science" as distinguished from the disreputable temperance science.

Yet despite its more exact methods and elaborate experiments, the moderationist work often did not yield results very much more conclusive than those of the earlier flawed research. The findings, especially on the effects of small doses of alcohol, were often ambiguous and sometimes even open to conflicting interpretations by moderationists and teetotalers. The numerous experimental designs and repetitions to show how alcohol affected speed, strength, and stamina led to no practical conclusions. Moreover, like the much-maligned work of the temperance doctors, British alcohol research after the First World War could still be accused of bias. It was clearly designed to provide a scientific rationale for particular drink control measures, and furthermore was sponsored by the very people who put forward those measures.

Nevertheless, the moderationist faction managed to establish its paradigm in place of temperance as the favoured approach among medical scientists involved in the alcohol debate. Even more, this faction at last fulfilled the cultural expectation that doctors and medical scientists should conclude unequivocally on the drink question, based on their expert knowledge of the health consequences of drinking and the science of alcohol. For the first time, the medical-scientific profession as a whole agreed to speak in a unified voice on the alcohol problem. The consensus can be seen in the publication of a series of original reports and literature reviews favouring the moderationist findings from 1910 to the 1930s.[84] The researchers and defenders of the new paradigm included many important names in medical

84 Ernest H. Starling, R. Hutchison, F. W. Mott, and R. Pearl, *The Action of Alcohol on Man* (London: Longmans, Green, 1923); H. M. Vernon, *The Alcohol Problem; A Review of the Effects of Alcohol on Man* (London: Victor Gollancz, 1931); Haven Emerson, ed., *Alcohol and Man* (New York: MacMillan, 1932).

science, while Vernon and other moderationists took over the leadership of the once staunchly teetotal Society for the Study of Inebriety. Even more remarkably, the temperance movement itself seems to have expressed very little opposition to the new "wet" science. The only medical-scientific temperance works published after 1920 were by the director of the NTL, the doctor and clergyman Courtenay C. Weeks, who singlehandedly fought back against the new paradigm.[85] Other spokesmen for the NTL expressed enthusiasm about the MRC as an unbiased expert investigative body although, at the same time, they tried to appropriate the wartime measures by calling them "temperance measures" and interpreted the moderationist research as showing that even small quantities of alcohol had detrimental effects.[86] The moderationist paradigm also benefited from popular support; after a century of teetotalers and prohibitionists who denounced the demon drink and called for restrictions and restraint, scientists were now saying that alcohol could be safely consumed for its pleasurable effects.

Conclusion: Science and Objectivity

Each group of alcohol experts, from the Medical Research Council to the Society for the Study of Inebriety to the Medical Temperance Association, manipulated medical-scientific knowledge and employed the rhetoric of objectivity in their attempts to gain a position of cultural and scientific authority on the alcohol question. The exact definitions of "objectivity" and "science" used by each group varied, although all of the writers took the temperance movement as their basis for comparison. The science-based approach to the alcohol problem was championed as an alternative to and improvement over the dogmatism of temperance proponents.

By the early twentieth century, organized groups of medical scientists began to struggle against the hegemony of the temperance movement for jurisdiction over both the study of alcohol and the right to formulate alcohol policy. Whereas many medical scientists had originally worked in co-operation with lay temperance reformers, there was now open conflict. Medical-scientific researchers tried to separate themselves as far as possible from the authority of the temperance movement by proposing new solutions, approaches, or knowledge concerning the alcohol problem. They attempted to present themselves as the sole experts who could generate the scientific knowledge that would lead to a solution. Each group claimed to be the most qualified on the grounds that it alone utilized scientific fact and objective research. Thus, even though the relationship between medical science and temperance reform changed over time, the interests, the rhetoric, and the

85 Courtenay Weeks, *The Medical Evidence before the Royal Commission on Licensing, 1930* (London: National Temperance League, 1931).

86 See the discussions in *The Proceedings of the Commonwealth Temperance Convention* (London: National Temperance League, 1924).

strategy employed by all of the medical scientists in the alcohol debate remained much the same.

Only after 1914, with the acceptance of the new moderationist paradigm, was it universally agreed that important questions about alcohol consumption had finally been solved by science and that a firm scientific foundation for drink control had been established. In other words, the group of investigators originally organized by the Advisory Committee and the MRC had waged a successful campaign to legitimize both a science-based attack on the alcohol problem and the expertise of scientists in the alcohol arena. From at least the mid-nineteenth century, science and scientists had been expected to help direct state and individual action, but despite their efforts the temperance workers and SSI alcohol experts had never fully achieved recognition in this role. In contrast, moderationist medical scientists did manage to agree upon their facts and recommendations when consulted by the government, first through the Central Control Board and later through the 1929 Royal Commission on Licensing.[87] Policy-makers finally took their scientific approach seriously. However, few concrete professional opportunities for alcohol scientists actually followed in the wake of this victory. While individuals like Mellanby and Vernon continued their careers in different capacities with the MRC, virtually no government support for alcohol research was forthcoming after 1920.[88]

87 *Report of the Royal Commission on Liquor Licensing Laws* (London: HMSO, 1932), pp. 13–18.

88 Medical Research Council, *Half a Century of Medical Research*, 2 vols. (London: HMSO, 1975).