BACTERIOLOGY AND HOMOEOPATHY

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Hobbes clearly proves that every creature,
Lives in a state of war by nature;
So nat'lists observe, a Flea,
Has smaller flea that on him prey;
And those have smaller still to bite 'em,
And so proceed ad infinitem:

—Jonathan Swift (1667—1745).[1]

INTRODUCTION

Some of the stalwarts of Homoeopathy have held and perpetuated contradictory views regarding the development of modern medical microbiology and its relation to Homoeopathy. The purpose of this study is to explore the facts pertaining to the relation of bacteriology to Homoeopathy.

According to Close, "Hahnemann was the first to perceive and teach the parasitical nature of infectious or contagious diseases[2], . . . and the names bacilli, etc., had not been invented in Hahnemann's time, nor had the microscope, with which Robert Koch was able to verify the truth of Hahnemann's idea, been invented. Hahnemann had no microscope[3], . . .". Sarkar goes even further when he claims: "In fact the idea of 'contagium vivum' originated with Hahnemann and he can be hailed as the Father of Bacteriology."[4]

On the other extreme are Kent's averments: "He who consider disease results to be disease itself, and expects to do away with these as disease, is insane. It is an insanity in medicine, an insanity that has grown out of the milder forms of mental disorder in science, crazy whims. The bacteria are the result of disease . . . the microscopical little fellows are not the disease cause, but what they come after, they are the scavengers . . . they are perfectly harmless in every respect. They are the outcome of disease . . ."[5] He goes on: "They . . . tell you that a bacillus is the cause of tuberculosis. But if the man had not been susceptible to the bacillus he could not have been affected by it. As a matter of fact, the tubercles come first and the bacillus is secondary. It has never been found prior to the tubercles . . . Allopaths are really taking the sequence for the consequences, thus leading to a false theory, the bacteria theory . . . Hahnemann did not adopt any such theory as bacteriology."[6] He further argues that a recently dead body is poisonous and later if the cadaver has remained for some time it is full of bacteria and has no poison. The bacteria are there to remove the poison; the typhoid stool, when it has a very scanty allowance of bacteria, is very poisonous,

but when it is swarming with bacteria it is benign; bacteria are sent to destroy the poison of the disease; man lives longer with the bacteria than he would without them; if we could succeed in destroying the bacteria in the blood of a consumptive, he would die soon.[7]

DEVELOPMENT OF BACTERIOLOGY

The history of bacteriology is too often treated as though it were a drama opening with a prologue in the seventeenth century, followed by a long curtain and a first act dated about 1870. Such a presentation suggests oversimplicity to scientific historians, who have respect for actual facts. It affords an example of the former term the 'episodical' interpretation of history. As a matter of fact, examination of the sources shows that history is usually a matter of evolution rather than of episodes, and the history of bacteriology would seem to be no exception to this rule.[8]

Small creatures, too small to be visible to human eye, have been implicated in the causation of disease from a very early period in the history of medicine. The *Atharva Veda*, probably the oldest existing medical literature, has reference to this view.[9] Swift's rhapsody of 1733 is well-known. Paracelsus (Phillipus Aureolus Theophrastus Bombastus PARACELSUS von Hohenheim, 1493—1541) had ideas about the invisible agents of disease, which at the hands of his student Peter Soernsen or Severinus (1540—1602) were extended to the concept "*pathologica animata*".[10] However, the modern concept of microbiology is considered to date back to Fracastoro Gerolomo of Verona (1478—1552). As early as 1496, Ulsenius had stated that syphilis was due exclusively to contagion. Fracastoro extended these views further. In his *De contagione et contagiosis morbis* (Venice 1546), he writes about the contagion of syphilis. "The disease is spread by particles too small to be seen .. these seeds have the faculty of multiplying and propagating rapidly." He named the responsible agents a "*contagium vivum*". In the same place Fracastoro also speaks of the germs of consumption.[11] Really, then, the idea of a *contagium vivum* did not originate with Hahnemann, as Close and Sarkar would have us believe; Hahnemann was certainly not a pioneer in this field; we cannot claim the fatherhood of bacteriology for him.

The first scientific user of a microscope was *Galileo Galilei* (1564—1642). As early as 1610, he had adapted the telescope to extremely small objects.[12] So we see that the microscope had existed for nearly a century and a half before the birth of Hahnemann, and as we shall presently see, many brilliant workers had used it. Galileo's work on microscopy was extended to the study of eyes and antennae of bees by Francesco Stelluti (1577—1651).[13] His work in turn was succeeded by that of Father Athanasius Kircher (1620—1680). In 1658 he gave a creditable theory of micro-organisms in *Scrutinium Physico Medicum Pestis*. In 1971, using simple lenses of low magnification, he observed what he called "peculiar worms" in the blood of persons suffering from the plague. He was thus the first

person to suggest, on experimental grounds, that disease might be caused by living organisms.[14] Once again we find the stands of Close and Sarkar faltering. It was by actual experimental observation, though uncontrolled, long before Hahnemann, and not by his "logic" etc., that micro-organisms came to be implicated in the causation of disease. It is interesting to note that, as early as 1666, Robert Hooke (1635—1703) had published *Micrographia* in which he described cells and named them so.[15]

Antoni van Leeuwenhoek (1672—1723) by his ingenuity and sagacity constructed a microscope that had extra-ordinarily good resolving power and a magnification of 40 to 300 diameters. He described spermatozoa and protozoa and demonstrated microorganisms on the teeth (17 September 1683). These minute bodies Leeuwenhoek named "animalcules". His contemporary Diacento Cestoni (1637—1718) of Leghorn described acarus as the aetiological agent in scabies. This discovery constitutes the first proof of an organism being the cause of a definite disease. It was soon forgotten, resurrected by Wichmann in 1780, forgotten again, eventually to be established with experimental as well as clinical proofs by Renucci.[16] Not only was the microscope available in Hahnemann's time, but an achromatic microscope also existed at that time. Paris, where he passed his last years of life, was the international centre for the manufacture of microscopes.[17]

Leeuwenhoek's brilliant work was taken further nearly a century later by Plenciz of Vienna. He concluded, as a result of his experiments, that each disease had its own specific agent, which multiplied in the body. We shall presently see that Hahnemann concurred with these views. Plenciz also worked out, in 1762 (i.e. during the first decade of Hahnemann's life), a well-rounded germ theory of diseases. He examined the minute animals found in decomposing organic material and named these "infusoria" Even Linnaeus listed these in his classification,[18] and Christian Ehrenberg's classification had appeared during Hahnemann's life time.[19]

HAHNEMANN'S VIEWS AND RELATION OF BACTERIOLOGY TO HOMOEOPATHY

Hahnemann kept pace with the scientific developments of his day and he associated himself with his contemporaries. In his translation of Monro's *Materia Medica* (1791) he wrote with regard to the itch: "I . . . agree with those who attribute the disease to a living cause". In the *Anzeiger* (1792) he wrote: "... It has its origin in small living insects or mites which take up their abode in our bodies . . . the cause of itch given above is the only true one, the only one that is founded upon experience."[20] In 1795 he wrote: "Is not the eruption-contagion (of Crusta lactea) perhaps due to small animalculae or miasms as an underlying cause?"[21] Thus we find Hahnemann subscribing to the view that living beings can cause specific diseases. In his *Heilkunde der Erfahrung* (1805) [should it be translated "Medicine of Experience" or "Experimental/Practical Therapeutics"?] Hahnemann states that some diseases (the miasmatic maladies) arise from a contagion principle

that always remains the same. These diseases always retain the same character and follow the same course.[22] These views expressed by Hahnemann are very close to those of Plenciz regarding specificity of cause to disease. It is implied that disease matter is a living substance.

His views about the contagious principle, the miasm, become explicit in his *Chronic Diseases:* "... have these various, acute ... miasms the peculiar characteristic that ... like parasites (they) grow up (within the body of the host) ... On the other hand, are not the chronic miasms disease parasites, *which continue to* live as long as the man seized by them is alive ... and ... which do not die off of themselves."[23] Further on in the same work he mentions about the "germs of internal itch, or psora,"[24] and again "... this miasm like a parasite seeks to inroot its hostile life in the human organism and to continue it there."[25] Hahnemann's views about microorganisms become still more clear in his famous essay on Asiatic Cholera (1831): "... the cholera miasm finds a favourable element for its multiplication, and grows into an enormously increased brood of those excessively minute, invisible creatures of which the contagious matter of cholera most probably consists, and ... *the invisible cloud ... is composed of probably millions* of those miasmatic animated beings ..."[26]

Kent's statement that Hahnemann did not adopt any such theory as bacteriology, then holds no grounds. It requires hardly any judgment to ascertain whether Hahnemann was for or against bacteriology. It appears quite likely that Kent did not study Hahnemann's works thoroughly, otherwise he could not have misrepresented Hahnemann so badly.

More flaws in Kent's arguments become evident when we study developments in bacteriology that took place after Hahnemann's death and before Kent delivered his lectures on *philosophy of Homoeopathy, and finally the* developments that contradict Kent's predictions.

About 1837 Cagniard de la Tour and Schwann independently showed that fermentation in beer was due to the growth of living yeast cells. Justus Liebig, who was one of the discoverers of chloroform in 1831, held that the yeast cells were simply the by-products of fermentation, which according to him was purely a chemical process and a ferment for the process was obtained from the dead protein already present in the reacting system.[27] Unfortunately Kent argued in the same way about bacteria years later without realizing that such assumptions had been falsified primarily because these presumed spontaneous generation.

About the middle of eighteenth century there had been a considerable controversy over the issue of spontaneous generation. It had long been *proved that there was no such thing* as the spontaneous generation of large animals. Van Helmont's recipe for producing rats—cook up a pot containing bran and rags—would hardly have been taken seriously. The origin of the mysterious, swarming microscopic life was another matter. Strangely enough it always appeared in putrefying material. After Leeuwenhoek had

described animalcules, their presence in various situations was confirmed without difficulty.[28] Were these generated spontaneously? To test it Needham, about 1750, heated meat-broth and left it sealed for some time. On subsequent examination Needbam found that the broth was swarming with animalcules; to him it was a proof of spontaneous generation. Spallanzani showed that if the flasks containing meat-broth were heated sufficiently and sealed properly, on storage, no animalcules would be found on subsequent examination. Needham argued that prolonged heating had destroyed a hypothetical and mysterious "vegetative force". To him this vegetative force was essential for growth of animalcules. One should recall that such mysterious concepts were rife in those days. There was the calorique, the imponderable heatfluid, the ether in which the light waves were supposed to travel and the vital force that was supposed to keep organisms alive. Spallanzani then showed, experimentally, that no such force was necessary for the growth of animalcules, as these could grow in broth that had been heated for prolonged periods of time and at a very high temperature.[29] Spontaneous generation, then, was not possible.

But if the yeast was not the product of fermentation, could it be the cause? The question was taken up by Louis Pasteur, who proved, by experiments, that no proteins were involved in fermentation and that fermentation could not take place in absence of yeast.[30]

It had long been suspected that fermentation was closely related to the process of infection; the likelihood that the latter was also dne to microorganisms became all the more clear when it was shown that fermentation was due to microorganisms. About that time Joseph Lister showed that if surgical wounds are meticulonsly kept sterile, tbey do not develop infection and heal by first intention.[31] In 1865, Pasteur showed that by avoiding infection with mieroorganisms, it was possible to raise a bealthy stock of silk-worms in farms surrounded by infeeted farms.[32] Earlier, in 1846, Ignaz Philippe Semmelweiss had reduced mortality due to puerperal sepsis from 12.24% to 1.27% by introducing aseptic procedures in maternity wards. Unfortnnately he was ridiculed and vilified.[33]

Koch's famous postulates (1882) on the relationship of an organism to the disease it causes were an elaboration of Jakob Henley's suggestions of 1840.[34] They are (a) that the organism should always be associated with the disease it is supposed to canse, (b) that the organism should be isolated in pure culture, and (c) that the cultured organism should reprodnce the disease in susceptible animals.[35] To refute the claims of bacteriology, Kent should have demonstrated flaws in these postulates and devised or at least suggested means to verify his own statements, rather than deriding and ostracizing bacteriology.

Immunology was at an empirical stage between 1720 and 1880. In that year Pasteur noted, by accident, that inoculation with stale cultures of a micro-organism immunized the animal so inoculated against future inocula-

tion or infection by the same microorganism, even if the second infection be virulent to healthy but not inoculated animals.[36] Even to the non-homoeopath Shryock, this incident was reminiscent of Hahnemann's doctrine that like cures like.[37] It is surprising that for Kent, it had a negative appeal. It is clear from this that immunity and susceptibility are relative, and that sub-clinical infection itself increases immunity. Happily such an observation is in line with the observations of Hahnemann. He noted on many occasions that gradual approaches to the sick by the attendants or physicians made them immune to the disease from which the patient was suffering.[38]

Ilya Metehnikoff noted in 1883 that amoebae could engulf solid particles, and later that leucocytes engulfed and destroyed pathogenic microbes in a similar manner. Further studies revealed that leucocytes were more effective after the host had been immunized against the given disease than they were before. Then Pfeiffer observed that bacteria placed in immune serum lost vitality and died. In 1888 Roux and Yersin showed that the broth used to culture diphtheria bacilli possessed poisonous qualities. Kitasato noted similar qualities in culture media that had once contained tetanus bacilli.[39] Do not these experiments show, to those who like to see things as they are and not as they ought to be, that microbes produce poison and they do not destroy it?

Kent's contention that a sick person lives longer with bacteria than he would without them, is also wrong. Ever since Sir Alexander Fleming discovered penicillin in 1929,[40] more and more substances, the antibiotics, have been used to destroy bacteria in the body. It is true that antibiotics have some undesirable effects and that they have their limitations, yet no patient suffering from an infectious disease has died simply because the bacteria in his body, which according to Kent have a benevolent role to play, have been wiped out.

We have inherited from our forefathers the keen longing for a unified, all-embracing knowledge (Schrodinger). Unification between Homoeopathy and bacteriology has been effected by some workers. Emil von Behring, a Berlin homoeopath, succeeded in saving thousands of babies suffering from diphtheria by injecting them with attenuated bacterial toxin.[41] About this world-famous discovery he wrote: "... by what technical term could we more appropriately speak of this influence excited by similar virus (i.e. toxin) than by Hahnemann's word Homoeopathy? ... it must be traced ... to a principle which cannot be better characterized than by Hahnemann's word Homoeopathy."[42] Paterson, in 1936, showed that non-lactose-fermenters could be isolated from 25% of stool specimens examined, and that many chronic symptoms were related to the presence of these non-lactose-fermenters. It was further shown that vaccines of these non-lactose-fermenters, in homoeopathic doses, given by mouth, could eliminate the chronic symptoms.[43] The same is true of microdoses of other vaccines like pneumococcein, influenzin, streptococcin etc. etc.[44]

Not only has the homoeopathic viewpoint helped scientists to exploit bacteriology for the benefit of ailing humanity, but Homoeopathy's claims have also been substantiated by bacteriological techniques. J. Paterson and W. Boyd, in 1931, demonstrated an alteration in the Schick Test from positive to negative in 60% of cases following administration by mouth of a 30c potency of toxoid or 201c potency of Diphtherinum. This alteration occurred only in 5% of cases not so treated.[45] It has been shown that Arsenicum album in homoeopathic doses is almost a general stimulus to phagocytosis, that Veratrum viride in homoeopathic doses raises the opsonic index to the pneumococcus, Phosphorus that to tubercle bacillus, and Hepar sulph. that to staphylococcus aureus, and that Baptisia increases the agglutinating power to B. typhosus.[46] These observations indicate that bacteriological techniques can be utilized to verify some of the basic tenets of Homoeopathy.

The relation of bacteriology to Homoeopathy can be best summed up in the words of George Bernard Shaw:

"It would be difficult to cite any proposition less obnoxious to science than that advanced by Hahnemann: to wit, that drugs which in large doses produce certain symptoms, counteract them in very small doses, just as in more modern practice it is found that a sufficient small inoculation with typhoid rallies our powers to resist the disease instead of prostrating us with it."[47]

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