

"IGNAZ SEMMELWEIS." (An Oration given by Ferdinand Hueppe, at the Unveiling of his Memorial at the Eighth International Congress of Hygiene and Demography at Budapest, September, 2, 1894.) *Berlin*: August Hirschwald.

*Ignaz Phillip Semmelweis* was born at Ofen (Buda) on July 1, 1818, his father being a well-to-do German merchant of the Roman Catholic persuasion. His mother's maiden name was Theresie Müller. He went to school in Ofen, and to the Gymnasium in Pest. At 19, against his father's wish, who wanted him to take up law, he went to study medicine in Vienna, and he completed his medical curriculum there and partly at Pest. He graduated in 1844. His first inclination was towards internal medicine, under Skoda's influence, but he could not obtain a post as assistant to Skoda. He therefore prepared for midwifery, and became assistant in 1846, in the first obstetric clinic, with Klein.

With a Hamlet-like nature, he did not come to the work which has made his name immortal from a special passion for investigation, nor from the desire to satisfy any exceptional ambition. It required a mighty stimulus, affecting his whole being, to awake him. This stimulus arrived. A terrible mortality had overwhelmed the first midwifery clinic for many years. As he wrestled with these sad conditions he had no rest day or night, and he determined some special points which had partly struck others before him.

The obstetric department of the Vienna General Hospital was founded in 1784, and in thirty-nine years Zeller and Boër had a mortality of 1.25 per cent. from puerperal fever, and only seven times did the mortality exceed 2 per cent. Klein, however, in eleven years, had a mortality of 5.03 per cent. In 1833 the obstetric clinic was divided, and up to 1839 Klein, in the first division, had a mortality of 7.36 per cent., and Bartsch, in the second, 6.62 per cent.—no great difference. In 1839 the first was 5.5 per cent., in 1840 9.5 per cent.;

while the second was 4·5 per cent. and 2·6 per cent. respectively. From 1841 to 1846 the first had a mortality of 9·92 per cent., the second 3·38 per cent. A murderous puerperal epidemic reigned in the first clinic for twenty months—1841-1843—with an average mortality of 16·1 per cent., and maximum monthly rate of 31·3 per cent.

No one would enter this seminarium mortis. Everybody had his theory. Tetanus, or inflammation of the uterine vessels, decomposition, or mounting of the milk to the head, or milk metastasis, were the reasons of some; while others blamed primary inflammation of the uterus or adjacent pelvic organs; and others again the uncleanness of the sewers. “Cosmic-telluric influences,” which meant nothing definite, were convenient terms to hide want of competent ideation. The occasional epidemic occurrence caused the miasmatic contagious view of puerperal fever to be accepted. All these and other theories occasionally rose to the surface and loomed largely in view, but not one of them offered any means of fighting the disease.

Semmelweis could at first only show that the course of puerperal fever was extremely unfavourable at the first clinic, less so at the second clinic, and quite markedly more favourable in the city generally. At both clinics there was overcrowding, bad ventilation and feeding, and insufficient attendance. It was therefore something peculiar to the first clinic. The town cases always did well except when protracted, and the infection often went in runs.

In 1847 Kolletschka, the pathologist, died of pyæmia, caused by pricking his finger while making an autopsy.

“With the lightning thought of true genius, Semmelweis now saw (1847) at one glance the relationship which had so far been sought for in vain. Puerperal fever became to him wound infection, pyæmia of the wounded internal surface of the uterus.

“The wound itself is not the cause, but the soiling of it with cadaverous parts, with septic poison, is the external cause. The physicians and students carry over with their

hands—which are soiled with dissecting and not sufficiently cleaned—the mischief to healthy but wounded women.

"This was for Semmelweis in accordance with the observation that decomposing organic matters can induce decomposition and putrid infection in living organisms. To avoid the infection *en masse*, as caused from the action of dead matters introduced by the finger, one must destroy the dead stuff clinging to the finger, and for this chlorine—and especially in the form of chlorinated lime solution—is a suitable means."

This is the practical contents of his first communication on the subject, which at once made clear the cause of the striking mortality from puerperal fever under Klein.

When Semmelweis's regulations were adopted, the mortality fell to 3.08 per cent. in Klein's clinic. It soon rose again and in 1848 Semmelweis extended his demands to the point that the hands of the examiners, the instruments and the diapers, should in every case be disinfected previously, and that the diseased should be separated from the healthy patients. After carrying out strict and general disinfection, the mortality of the first clinic from puerperal fever sank still more; in 1848 down to 1.27 per cent. in spite of the continued examinations by the students.

As regards the general affairs of Semmelweis at this time, if we remember in racy English that he was "scoring off his chief," any of us who have had a chief will soon have a clearer idea of his troubles than any particulars would give us. Suffice it to say that he lost his post as assistant in the first clinic.

Simpson thought that the matter was settled when he remarked that puerperal fever had long been known to be contagious, and that the English Lying-in Institutions were a model for the Viennese to copy. How very like the British medical man this is! Willis first used the name—puerperal fever—but Denman, in 1682, pointed out that puerperal fever was carried to healthy lying-in women by accoucheurs and midwives. Dr. Hueppe points out, however, that this was

not enough, and even this was not clearly grasped by all. As regards Semmelweis's work, he was particularly struck with the want of knowledge concerning him exhibited by English physicians at the Seventh Congress for Hygiene in London, in 1891, when Hueppe coupled Semmelweis's name with those of Jenner and Lister. The chest note of absolute superiority which Simpson struck was scarcely well grounded when we find that the mortality in the General Lying-in Hospital in London was 12·82 per cent. in 1841, and 26·76 per cent. in 1838.

In France, Cruveilhier, in 1831, regarded lying-in women as wounded, and these wounds as being the source of puerperal infection, but so little did this affect the medical faculty that in 1851, and again in 1858, the Academy of Medicine, led by Dubois, spoke out against Semmelweis, notwithstanding Bretonneau's work on diphtheria, and the mortality at the Pitié in 1847 of 11·11 and in 1844 of 12·50 per cent.

Semmelweis, after many unsuccessful attempts, finally became Professor of Obstetrics in his own native town of Pesth in 1855.

The mortality in his clinic rose from 0·19 to 2·09, and then 4·05 per cent. in successive years. He was enabled to point out the necessity of isolating rooms, and sufficient air space and ventilation.

We cannot quote the whole story, but in 1864 Hirsch, in 1865 Veit, in 1866 Winckel, and in 1872 Fleischer joined on his side.

He did not live to enjoy his triumphs to the full, but only saw the beginning of the swinging round of opinion. In 1865 Semmelweis had to be placed in an asylum in Vienna, and, by the infection of a simple wound, he died on August 13, 1865, of pyæmia, the disease for the recognition and defeat of which he had done more than all the other medical men. A truly tragic fate, which has happened to other investigators in analogous circumstances.

Semmelweis was the *founder of aseptic wound treatment*. The antiseptic treatment founded by Lister in 1867 was

taken up chiefly in Germany. Antiseptic management of labour did not reduce the mortality in clinics to that of private practice, and now, as in surgery, there has been the recoil to aseptic treatment.

This recognises the healthy body as being fundamentally aseptic, and leaves it to the care of its normal powers; while the operator, his hands, his instruments, and his dressings are considered fundamentally septic, and must be accordingly treated before operation.

What are the figures we can quote to show some idea of Semmelweis's gift to the world? According to Böhr, in sixty years 363,627 active women died from puerperal fever, in the same time 360,000 persons died of cholera, and 431,287 persons died of small-pox. Now since these two latter figures include men, children, and old women, we can say that more women died of puerperal fever alone than of cholera and small-pox put together.

Dr. Hueppe closes his masterly oration with the following words:—"So has Semmelweis lived and worked: to the pride of his native town Budapest, to the glory of his Hungarian fatherland, to the fame of his German race, and to the common wealth of mankind."

It has seemed best to us to give somewhat fully the facts as extracted from Dr. Hueppe's oration without much commentary, because he has given the clearest succinct account of Semmelweis with which we are acquainted. It may be pointed out that Dr. Hueppe's opinion of English knowledge of Semmelweis's work is not quite accurate, and that no doubt the same practitioners who asked who Semmelweis was in 1891, would probably have had an equal acquaintance with the names of Schröder or even Virchow.

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