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Johann Lucas Schoenlein

1793-1864*

ERWIN H. ACKERKNECHT**

SCHOENLEIN died one hundred years ago, on 24 January 1864. The anniversary offers us a welcome occasion to look at the life and work of the man who was beyond doubt the leading German clinician between 1820 and 1850, just before German medicine assumed the world leadership previously held by France. The generation of the victorious physicians was formed and fashioned in part by him.¹ Wunderlich reports, somewhat sourly, in his *Geschichte der Medizin* that at a given moment the medical chairs at Berlin, Göttingen, Jena, Giessen, Erlangen, Heidelberg, and Zürich were occupied by Schoenlein's pupils.²

An analysis of Schoenlein's life and work might also be a small contribution to the natural history of the "great clinician," an extremely elusive phenomenon for the historian. A. L. Kroeber once compared him to the "great actor," whose greatness cannot be fixed in words but dies with him.

Schoenlein was born on 30 November 1793, the son of a rope-maker at Bamberg, that romantic old Franconian city which still nestles around one of the most beautiful German medieval cathedrals. Bamberg was the setting, and a most appropriate setting, for the hero of the "Tales of Hoffmann," who lived there as an orchestra leader and portrait painter when Schoenlein was a high school student. In 1811 Schoenlein went to nearby Landshut to study medicine but two years later transferred to Würzburg where he obtained his degree in 1816. Both universities, located in the same region, were, like Bamberg, centers of that strange aberration called "romantic medicine," and Schoenlein himself was deeply

* Woodward Lecture, Yale University School of Medicine, 7 April 1964.

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¹ The only existing modern discussion of Schoenlein is the excellent essay by W. Löffler, in *Zürcher Spitalgeschichte*, Zürich, 1951, vol. II, pp. 2-90. The best older monograph is R. Virchow, *Gedächtnisrede auf Joh. Lucas Schoenlein*, Berlin 1865. See also W. Griesinger, *Gedenkrede auf Schoenlein*, in E. Ebstein, *Deutsche Aerztereden*, Berlin, 1926, pp. 35-50; and F. v. Müller, "Joh. Lukas Schoenlein," in *Lebensläufe aus Franken*, Erlangen, 1936, pp. 332-349. A great number of essays on Schoenlein came from the pen of Erich Ebstein, e.g., *Z. klin. Med.*, 1910, 71, 481; *Dtsch. med. Wschr.*, 1910, 36, 2053; *Arch. Gesch. Med.*, 1912, 5, 449; *Arch. Gesch. Naturw.*, 1913, 6, 68; *ibid.*, 1916, 9, 209; *Schweiz. med. Wschr.*, 1920, 1, 947.

² Wunderlich, C. A. *Geschichte der Medizin*, Stuttgart, 1859, pp. 333-344.

influenced by these speculative tendencies, as is evident from the first sentence of his doctoral dissertation, "On metamorphosis of the brain": "Light is wedded to water and begets with him the organic." It is true that, like his favorite teachers, Tiedemann and Döllinger, he tried to combine speculation with observation, and the latter tendency prevailed more and more in his work.

In 1817 he became Privatdozent at Würzburg, and it is no accident that his first course was on pathological anatomy. In 1819 Schoenlein, who was always fascinated by exotic countries, was preparing for a trip to India when, through the influence of Döllinger, he was suddenly put in charge of internal medicine at Würzburg over the head of the notorious romantic, Ringseis, later the medical leader at Munich, who never forgave him.

In spite of his youth, the 26-year-old professor was at once an extremely successful teacher. (Great teaching ability seems to be one of the outstanding characteristics of the "great clinician.") He developed a "system," of which more later, and his "school" was named the "naturhistorische Schule" to distinguish it from the preceding "naturphilosophische Schule" of Schelling and Marcus. Grateful Würzburg made Schoenlein an honorary citizen, only to deprive him of this title when, six years later, he became politically *persona non grata*. Schoenlein returned his diploma with the label "worthless papers." (He was known all his life for a certain roughness.)

Among his Würzburg students were the following, all of whom became famous later on: Marcus Jr., the elder Vogt, Fuchs, Eisenmann, Pfeufer, Jahn, Volz, Haeser, Mohr, Siebert, Cannstatt, Sichel, Jos. Heine, Th. Schwann, R. Wagner, Demme, Zehnder of Zürich and Dieffenbach of Berlin. The last two mentioned were instrumental in later academic offers to Schoenlein. Some of them who did not fully participate in the master's later evolution have been unjustly accused, as often happens with pupils, of "corrupting his thought," whereas they only remained faithful to an earlier version of it.

In the course of the extensive persecutions of intellectual liberals in Metternich's Europe after 1830, Schoenlein fled the city in 1832 in a small boat; his friends were marched through its streets in chains.³ It was his and Zürich's good fortune that the new

³ For political activities of Schoenlein and his medical contemporaries see Ackerknecht, E. H., "Beiträge zur Geschichte der Medizinalreform von 1848," *Sudhoffs Arch. Gesch. Med.*, 1932, 25, 61-183.

university there was looking for a professor of medicine, and in 1833 he became the first professor in the city where other German academic refugees, such as Lorenz Oken and Georg Buchner, likewise found a haven.

Schoenlein felt very happy at Zürich. He was again most successful as a teacher. Medically speaking, he put Zürich "on the map." Among his pupils there were Lebert and Griesinger. Their orientation reflects the fact that he moved farther and farther away from his romantic beginnings. A beautiful new hospital was built for him. But the direct dependence of University affairs on politics, which has so often damaged the Zürich institution, had its deleterious effect also in Schoenlein's case. Politically, it had early become obvious that Schoenlein, who had fled reactionary Bavaria on account of his "radicalism," was to prove, in democratic Zürich, far closer to the conservatives than to the radicals who had called him there. In the late thirties it looked as if the University might be closed again for political reasons. Schoenlein was also deeply offended by the refusal of the Protestant people of Zürich to make him a citizen because of his Catholicism.⁴ Thus the man who in 1835 had jokingly turned down an offer from the Belgian king, in 1840 accepted an offer to go to Berlin as professor, personal physician to the king, and councillor for medical affairs in the ministry of education.

Once more Schoenlein triumphed; his Berlin period was a complete success. He and the equally famous physiologist, Johannes Mueller, with their pupils, made Berlin the most attractive medical school in Europe. The best known of his clinical pupils in Berlin were Traube and Jos. Meyer. He early realized the necessity of teaming up with laboratory men and he worked with such excellent young chemists as Simon and Heinz, and such promising young microscopists as Gueterbock, Remak, and Virchow. His position as personal physician to the king became most delicate as the brain disease of Frederic William IV progressed, but Schoenlein retained his integrity and ruled as to the incompetence of the monarch in 1858. He retired in 1859. His wife had died in 1846. The death of his only son on an expedition to Africa in 1856 had been a heavy blow from which he never fully recovered. A goiter incapacitated him more and more. With his two daughters he re-

⁴ Gagliardi, E., Nabholz, and Strohl, J. *Die Universität Zürich 1833-1933*, Zürich, 1938, pp. 274-282, 444-446.

turned to his home town, Bamberg, where in the midst of his magnificent collection of books he died on 24 January 1864.

Schoenlein was not given to writing. He has left us under his name only his thesis and two very short notes in Mueller's *Archiv*. But published lecture notes from Würzburg, Zürich, and Berlin,⁵ whether they are poor, and disowned by Schoenlein like those from Würzburg, or rather good like those from Berlin, allow us to form a picture of his opinions. One wonders, at this point, why Schoenlein could never be persuaded to bring out an official version of his teachings. It might be suggested that the contradictory character of some of his ideas, and their continuous evolution, may have given him the feeling that it was not yet time to shape them to a definite form—until it was too late.

His programmatic "Antrittsvorlesung" (Introductory Lecture) at Würzburg⁶ organizes in a very modern vein the work of the student on the wards, but contains such old romantic notions as the macrocosm-microcosm analogy, or the definition of disease as an "opaqueness of the idea of life"; later Würzburg lecture notes provide another but hardly more enlightening definition, "tension between the egotistic and the planetary principle."⁷

These lectures present the sum total of pathology according to a "natural system." Three classes, the "morphes," the "haematoses," and the "neuroses," are subdivided into families and then into groups. The first class is formed by seven families (dystrophies, hypertrophies, atrophies, etc.); the second contains no fewer than eighteen families, among them the phlogoses, typhuses, hemorrhages, impetigines, scrofulas, phthises (Schoenlein was a "dualist" in the tuberculosis discussion; this might have influenced Virchow and others⁸), colliquations, dyschymoses, etc. The third class is composed of four families (neuralgias, syphilis, including gonorrhoea, etc.)

This "natural history" approach of Schoenlein is undoubtedly an advance compared to the "nature philosophy" of Schelling and Marcus. But it cannot be denied, either, that it is more or less eighteenth century nosology—at best nosology in the vein of Pinel,

⁵ *Allgemeine Pathologie und Therapie nach J. L. Schönleins Vorlesungen von einem seiner Zuhörer*. 4 vols. Herisau, 1834; *Dr. J. L. Schönleins Krankheitsfamilie der Typhen von einem seiner Zuhörer*, Zurich, 1840; *Schönleins klinische Vorträge in dem Charité Krankenhaus zu Berlin*. L. Gueterbock, Ed. Berlin, 1842.

⁶ In Ebstein, *Aerzterden* (note 1), pp. 6-13.

⁷ *Allg. Path.* (note 5), vol. I, p. 1.

⁸ Ackerknecht, E. H., *Rudolf Virchow*. Madison, Wis., 1953, pp. 78-79.



Fig. 1. Schoenlein in his Zürich period. Pastel. Artist unknown. This portrait, which has unfortunately disappeared, used to hang in the Department of Medicine, of which Schoenlein was the first Director, in the Kantonsspital.

Zur Pathogenie der Impetigines.

Von

Prof. SCHOENLEIN in Zürich.

(Auszug aus einer brieflichen Mittheilung an den Herausgeber.)

(Hierzu Taf. III. Fig. 5.)

Sie kennen ohne Zweifel Bassi's schöne Entdeckung über die wahre Natur der Muscardine. Die Thatsache scheint mir von höchstem Interesse für die Pathogenie, obgleich meines Wissens auch nicht ein Arzt sie bisher seiner Aufmerksamkeit gewürdigt hatte. Ich liess mir deshalb zahlreiche Exemplare von Seidenwürmern, die an der Muscardine litten, von Mailand kommen, und meine damit angestellten Versuche haben nicht bloss Bassi's und Andouin's Angaben bestätigt, sondern noch einige andere nicht ganz unwichtige Resultate ergeben. Dadurch wurde ich denn wieder an meine Ansicht von der pflanzlichen Natur mancher Impetigines erinnert, eine Ansicht, die durch Unger's schöne Arbeit über Pflanzen-Exantheme schon früher eine mächtige Unterstützung fand. Da ich gerade glücklicher Weise einige Exemplare von *Porriigo lupinosa* W. im Hospitale hatte, so machte ich mich an die nähere Untersuchung, und gleich die ersten Versuche liessen keinen Zweifel über die Pilz-Natur der sogenannten Pusteln. Anliegend eine mikroskopische Abbildung eines Pustelstückes. Zugleich sende ich einige mit der grössten Leichtigkeit aus der oberen Schichte der Lederhaut am Lebenden ausgeschälte *Porriigo*-Pusteln bei. Ich bin eifrig mit weiteren Untersuchungen über diesen Gegenstand beschäftigt, deren Resultat ich bald zu veröffentlichen gedenke.

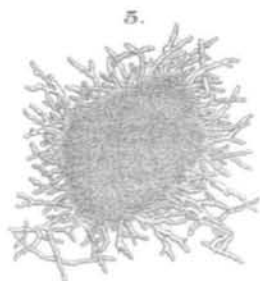


Fig. 2. Facsimile of Schoenlein's original brief contribution on the fungous character (*Pilz-Natur*) of *porriigo lupinosa*, or favus (*Archiv für Anatomie, Physiologie und wissenschaftliche Medicin*, 1839, p. 82). The accompanying figure is from a plate in the back of the volume. This periodical was edited by Johannes Müller. Translation at the bottom of the opposite page.

but with 35 years' retardation. (It is true, Pinel's essential fevers are absent.) Old-fashioned also are, e.g., the insistence on the critical days or the "epidemic constitution" ("the typhus of 1814 was a transformed Russian dysentery"⁹) and the refusal to recognize the causal rôle of the itch mite, not to speak of the belief in maternal impression.¹⁰ On the other hand, a number of conditions, like "carditis rheumatica" (our polyarthritis with endocarditis), are described in a then most advanced fashion, with auscultation, percussion, and autopsy findings. To the rheumatic group belongs also the purpura named after Schoenlein. Interesting are certain social observations, like the connection between poverty and vermes, the sometimes extreme localism, or the denial of the existence of so-called pathognomonic symptoms.¹¹ These lectures are rather disappointing, but hardly more so than the writings of other great clinicians like Boerhaave, Bretonneau, or Semmelweis. Of his Zürich lectures only those on the different forms of typhus—he differentiates between "abdominal typhus" and "petechial typhus"—have been printed.

The Berlin lectures are far more lively, practical, and modern. The romantic vocabulary is gone. They illustrate what Wunderlich meant when he praised Schoenlein for "leading medicine back to the facts." The chapters on typhoid fever, pneumonia, sepsis, tuberculosis, or polyarthritis are still quite readable. Unlike his predecessor, who still spoke Latin, Schoenlein addressed the clinic in German. This was in 1840! Löffler has rightly emphasized the importance of this "linguistic liberation of medicine." The Berlin

⁹ *Allg. Path.*, vol. I, p. 34.

¹⁰ *Ibid.*, p. 89.

¹¹ *Ibid.*, vol. II, p. 248; vol. I, p. 11.

ON THE PATHOGENESIS OF IMPETIGO by Prof. Schoenlein of Zürich. Doubtless you know of Bassi's great discovery of the true nature of muscardine. This seems to me of the greatest interest for pathogenesis, although up to now, so far as I know, not a single doctor has considered it worthy of attention. Therefore I secured from Milan a batch of silkworms that had muscardine and my experiments not only confirmed the reports of Bassi and Audouin, but yielded some other not totally insignificant results. I was then reminded of my theory of the vegetable nature of many an impetigo, a theory which had already derived considerable support from Unger's fine work on plant exanthems. Since I had just then, fortunately, some cases of *Porrigo lupinosa* W. in the hospital, I made a more thorough examination and the very first tests left no doubt as to the fungous character of the so-called pustules. Attached is a drawing of a microscopic section of a pustule. I am also enclosing some of the porrigo pustules which were easily peeled off from the outer layers of skin from a living patient. I am eagerly engaged in further investigations on this subject and hope to publish the results soon.

lectures also contain, as we have shown,¹² Schoenlein's recommendation of digitalis in pneumonia (pp. 95, 116, 138).

In these lectures Schoenlein insists always on autopsy findings, auscultation and percussion. Of course he adopted these innovations from the great French school of Corvisart, Laennec, etc., which he continually quotes and discusses, but he must be praised for the fact that, according to Wunderlich, he was for ten years (actually much longer) the only German clinician to use these techniques.

Schoenlein was primarily a great "transmitter." In this respect—and not only in this respect—he reminds one of Osler, who more than half a century later played a similar role in American medicine. But in one instance he transcended it. With his one half-page paper of 1839 on the fungi causing favus (the organism was later named *Achorion Schoenleinii* by his pupil Robert Remak) he not only opened the field of dermatomycoses, but is one of the first protagonists of the science of parasitic disease, which was to dominate and transform medicine completely during the second half of the nineteenth century. His chemical work, with Simon, on blood chemistry, urea in the tissues of nephritics, etc., is also remarkable, while we would today regard most of his therapeutics as hyperactive. A study of Schoenlein's work reveals how all of his numerous pupils were in one way or another influenced by their now almost forgotten teacher.

Wunderlich, Griesinger, and Virchow have attributed Schoenlein's success primarily to his non-romantic, practical abilities, to the fact that he brought medicine back from excessive speculation to the facts and enriched it by the newest French acquisitions.

Seen from a distance and in the light of psychology, his opposition to romanticism is only part of the story: that he had a system of his own and tended, according to Griesinger, to be dogmatic, was almost equally conducive to success.

There remains in the end a third factor, hard to define, which was perhaps the essential one. Three of his pupils, Virchow, Griesinger and Billroth, utterly different in most ways but equal in talent, have tried to formulate this "essence" of the master's genius. The lyricism of their statements, which follow, is all the more significant as they never were known for their inclination to admire others. Billroth wrote:

¹² Ackerknecht, E. H., "Aspects of the history of therapeutics," *Bull. Hist. Med.*, 1962, 36, 405.

Schoenlein's overpowering strength consisted in his extraordinary encyclopedic knowledge of the sciences, his universal mastery of the physiology of his time. He had all this at his fingertips. The student was always swimming with the large current of the sciences, physiology and practical medicine. No difference appeared between theory and practice. At every moment the student joyfully felt how what he already knew united organically with what he heard at the bedside. . . . Etiology, the grandiose phenomena of the epidemics and social diseases occupied Schoenlein above all; they were to him like great natural events, subjects particularly worthy to be studied. This attraction to the magnificence of natural and social phenomena was almost completely absent in Skoda and Oppolzer. . . . From Skoda and Oppolzer the student obtained real, practical knowledge, which leaves rapidly cooling memories. With Schoenlein one enjoyed in addition the feeling of the boundless nature of research embedded in general knowledge, and here, I believe, rested the main strength of his teaching which was so extremely stimulating and successful.¹³

Virchow says of Schoenlein's teaching in Berlin:¹⁴

Not much system—many facts—that was the general impression. No clinician had ever before at Berlin exerted such an influence. . . . His presence of mind, the order of exposition, the planned division, the completeness of the chapters, the harmony of his treatment were truly admirable. . . .

Griesinger concluded:

Not his system was his most important contribution, not his lecture course either . . . at the bedside the master became most apparent. Nobody who saw him will forget his calm, serious behaviour, his thorough examination, his withholding judgment until he believed he saw through the case, thereafter his firm, shrewd, clear-cut pronouncements. . . . He claimed more than he demonstrated or proved; he appeared more the "magister" than the "minister naturae"; to the student his sentences seemed those of nature herself; at that time I felt he knew everything, he could do everything at the bedside.¹⁵

In short, Schoenlein possessed the same "magnetism" which made a Boerhaave, a Corvisart, a Bretonneau, an Osler such great teachers and clinicians, a quality we are still very far from really understanding. Is it primarily the rare talent of these people to see what is essential and an ability to teach others to see it? Is it their unusually broad outlook, their artistic gift of presenting their ideas harmoniously? Is it their firmness of character?

It should not be overlooked that Schoenlein was favored by circumstances. In order to develop, a great clinician needs a great hospital. The Juliusspital at Würzburg was one of the few such

¹³ Billroth, Theodor, *Ueber das Lehren und Lernen der medizinischen Wissenschaften*. Wien, 1876., pp. 336-338.

¹⁴ Virchow, (note 1), p. 31.

¹⁵ Griesinger, (note 1), p. 41.

hospitals existing in Germany at that time, and it was his good fortune to be put in charge of it before he was thirty.

The great clinicians of the preceding generation (J. P. Frank 1745-1825, Authenrieth 1772-1835, Hufeland 1762-1836) were rather old when he appeared on the scene. None of the leading men of his generation (Krukenberg 1788-1865, K. H. Baumgartner 1798-1886, Chr. Nasse 1778-1851) was equally gifted. The physicians of Germany were tired of the excesses of romanticism or of mere empiricism; they were eagerly looking for leadership to connect them again with the main currents of scientific progress, to open to them new scientific horizons. At this moment Schoenlein appeared, and was able to fulfill these expectations.