Summary  Carl von Rokitansky was the author of a treatise that came out between 1842 and 1846 with the title Handbuch der Pathologischen Anatomie. A historical milestone in pathological anatomy, Rokitansky’s work represented the first attempt to systematically classify pathological specimens. Its publication inevitably made a great impact on Vienna, at that time the major European medical centre. The Italian translation of Rokitansky’s masterpiece, Trattato Completo di Anatomia Patologica, published in Venice in 1852, was carried out by Ricchetti and Fano: the former a philologist and the latter a Triestine physician who, in 1873, had worked at Simon Pertot’s side, the first prosector to be assumed in Trieste. From the start, the two translators not only made no secret of the linguistic obstacles they came up against, but also how unconvinging Rokitansky’s doctrines were; a scepticism emerged from their words that inevitably contributed to the realization of a translation difficult to read. Undoubtedly, Rokitansky elaborated a theory of disease containing a certain degree of unclarity and in this respect it is interesting to emphasize that even the English translation, Manual of Pathologic Anatomy (1849-1854), demonstrated similar conceptual problems. A convinced supporter of gross pathology, Rokitansky put forth a theory of disease, the so-called Krasenlehre, resting upon humoral doctrines. This new knowledge inevitably exerted a great influence over Viennese, as well as German, medicine. Rokitansky’s humoral pathology survived until the 1850s, when it was attacked by young Virchow, the future, universally recognized, father of cellular pathology, who definitively extinguished speculative humoral pathology.

Key words  Handbooks • History of medicine • Pathological anatomy • Rokitansky • Translation

Parole chiave  Manuali • Storia della medicina • Anatomia Patologica • Rokitansky • Traduzione

“Rokitansky firmly established the New Vienna School, which stressed pathological study and correlation of clinical symptoms and signs with structural abnormalities observed at autopsy” [1]

A natural starting point for a history of pathological anatomy in the nineteenth century is the work of Carl von Rokitansky, which has been the subject of several medical publications. Rokitansky’s work represents a notable step along a path that led to a crucial body of knowledge in pathology. Carl von Rokitansky (1804-1878) was one of the greatest descriptive pathologists of the nineteenth century, if not of all times (Fig. 1). He was born in Bohemia but educated in Prague and Vienna. He qualified as a medical doctor on 6 March 1828 with a 52-page dissertation entitled De varioloide vaccinica, an accurate, meticulous, as well as critical work. On 1 November 1827, one year before graduating, he took up the unsalaried post of Sekundararzt (assistant prosector) in the dissection lab of the Allgemeines Krankenhaus (General Hospital), and three years later be-
came a paid assistant dissector. In 1844 he was given the chair of pathological anatomy, at the Vienna Medical School. Elected dean of the medical faculty for four terms, he then became the first freely elected rector of Vienna University (1852-1853).

In the 1830s, the Second Vienna Medical School was established, primarily through the personal efforts of this eminent pathologist, who played a major part in the development of pathological anatomy with his new approach to pathology bringing a breath of life to Vienna. Being the only prosector, he was given the unique opportunity of performing an extraordinary number of dissections, namely of all the patients dying in the hospital, and Rokitansky’s autopsy-room soon became the centre of Viennese medicine.

He was given credit for having brought pathologic anatomy in German-speaking countries to new life, and pathology as a separate specialty was established to his merit. The extraordinary high number of necropsies he performed acquires significance only if linked to his remarkable and innate spirit of observation, sharpness of sight and manual skill. When facing unexpected morbid appearances, in the course of his excellent dissections, he was overcome by a sudden transport, a real fire, and, with brightened eyes, he would seize his scalpel in order to grasp the intimate anatomical substrate [2].

He was passionate about his work and his life was spent on the practice of autopsies giving a great impulse to the long tradition of Viennese autopsy-performing pathology: he is alleged to have performed more than 64,000 dissections and 25,000 forensic autopsies throughout his brilliant career. He performed annually over 1500 autopsies and, between 1827 and 1866, he is said to have signed more than 3000 records.

Working initially in a primitive wooden shed, he was later given a proper working room within the newly opened Institute of Pathological Anatomy (1862). A splendid collection of gross pathological specimens, certainly the most interesting and extensive in the world, contained in 1843 about 5384 preparations, some dry, and other preserved in alcohol [3].

He was a convinced supporter of the macroscopic method: according to him pathological anatomy should be based on observable organic change. Although the contributions of the Viennese pathologist were extraordinarily important to pathological anatomy, even in his own days Rokitansky was something of an anachronism, with his pure naked-eye anatomy hardly ever involving experimental evidence on the one hand or the findings of the microscope on the other. However, observing macroscopic changes in tissues and organs, Rokitansky took giant steps towards elucidating pathological anatomy; beyond this, it should be stressed that Rokitansky formulated his doctrines before organic chemistry and biochemistry came into being.

Rokitansky’s polyhedric spirit was a perfect combination of both the concrete experience and practical knowledge of a scientist, and the sensibility of a philosopher.

Today, the major source of information about the pathologist is a precious autobiographical work written in 1876 by Rokitansky, not long before his death; unfortunately, it remained unfinished since a sudden death took him by surprise as he was writing the last chapter. With this autobiography he never meant to realize a thorough and perfect literary work; on the other hand, as he made clear in the introduction, it had to be the mere summary of the most significant events in the life of a by now old man [4].

A remarkable thirst for culture seemed to distinguish this eminent pathologist since his early childhood, when he started perceiving the absolute necessity of widening his body of knowledge, thus the dissection of any kind of animal organism he came upon became his prior interest. Rokitansky’s need to shed light on everything falling into his hands, and the profound discontent nourished towards a poor educational system, made him become a self-taught person, rejecting each form of traditional learning based on mechanical memorizing of prescribed textbooks. As a matter of fact, medical teaching was theoretically based and hardly ever provided for practical training; it soon became clear that an overthrow of the system was requested, demanding, above all, freedom of teaching and learning. Convinced supporter of liberalism, two key words seemed
to distinguish Rokitansky’s philosophy: liberty and progress. According to him, personal freedom stood for freedom of expression and the root of progress was to be found in individualism.

Rokitansky’s inclination towards philosophy and his interest in Kant dated back to his student days in Prague: there, he met Bernard Bolzano (1781-1848), a forceful teacher of philosophy, profoundly estimated by the future anatomist: den einzig wahrhaft großen Mann an den österreichischen Fakultäten [5].

This period was to remain forever impressed on Rokitansky’s mind. Moreover, it is interesting to note that he dedicated many pages of his biographical work to the intense description of the riots taking place in Prague in the years 1822-1824, which reached their climax with Bolzano’s trial. Celebrated philosopher and mathematician, Bolzano declined to his students a theology based on rational principles and young Rokitansky did not remain untouched by his professor’s highly persuasive sermons. Later, Bolzano was vehemently criticized and, at last, removed from office. It was during this period that Rokitansky’s way of thinking underwent a sudden change, bringing out both his melancholic and pessimistic natures. But his looking on the dark side had much deeper roots.

Certainly, it cannot be said that Rokitansky had an iron constitution. On the contrary, as a patient of pathology [6], the one thing certain is that he had to pay dearly for his health. Both physical and moral sufferings seemed to be constantly present in his life, and represented a real existential uneasiness that often put his work and affective life to a severe test. It goes without saying that the unhealthy and miserable conditions of the morgue were certainly no remedy for his chronic rheumatism. As far as physical pain is concerned, it should not be ignored that he contracted a considerable number of diseases throughout his life, a fact that inevitably tested him even psychologically. He died in Vienna on 23 July 1878.

“Arrogesi a ciò d’aver incontrato ad ogni passo dottrine nuove, od almeno tali che dalle nostre non poco si scostano, […] per evitare le troppo frequenti ripetizioni, ed altri ostacoli non lievi, che per brevità passiamo in silenzio; […] si scorderà che, per quanto manchevole in fatto di lingua sia riuscita questa nostra traduzione, non per tanto ci costò tempo e fatica non poca” [7]

The previous paragraph (Fig. 2) is found in a brief introduction to the Italian translation of Rokitansky’s Handbuch der Pathologischen Anatomie (1842-1846). “First of all, we perceive that the author used a rather tortuous language in his treatise, even with a certain degree of opacity in places, to have encountered long and hampered sentences, to have encountered a number of new terms that the author employed in order to describe the results of his macroscopic investigations and his peculiar ideas, to have encountered, finally, many sentences used with another or different meaning, which are no longer common in everyday language. In addition, we noticed that each passage presented new doctrines, or at least doctrines that seem to be quite distant from ours, scientific terms employed at times in the German and at times in the Latin language, so as to avoid the use of too many frequent repetitions, and other significant obstacles that, to speak shortly, we prefer not to mention…”

Fig. 2 The two translators point out how difficult it had been to translate Rokitansky’s Handbuch der Pathologischen Anatomie (1842-1846). “First of all, we perceive that the author used a rather tortuous language in his treatise, even with a certain degree of opacity in places, to have encountered long and hampered sentences, to have encountered a number of new terms that the author employed in order to describe the results of his macroscopic investigations and his peculiar ideas, to have encountered, finally, many sentences used with another or different meaning, which are no longer common in everyday language. In addition, we noticed that each passage presented new doctrines, or at least doctrines that seem to be quite distant from ours, scientific terms employed at times in the German and at times in the Latin language, so as to avoid the use of too many frequent repetitions, and other significant obstacles that, to speak shortly, we prefer not to mention…”

General Hospital: he was assistant during post-mortem examinations. Pertot (1845-1907), the first pathologic anatomist to be assumed in Trieste, was appointed prosecutor at the Civico Ospedale in July 1872. At that time, a prosecutorial establishment was established, together with a laboratory for histologic and chemical analysis [8].

From the start, it is clear that Rokitansky’s theories did not convince the two translators at all: the result was a text diffi-
cult to read, to a great extent due to the adoption of a misleading translation approach, but also several other factors may have contributed to the realization of the target text (Fig. 4).

Rokitansky’s masterpiece in three volumes, *Handbuch der Pathologischen Anatomie*, published in Vienna by Braumüller & Seidel between 1842 and 1846 (Fig. 5), is regarded as one of the most important anatomical treatises, the first attempt to classify pathological findings. Volumes two and three covered descriptions of the diseased organs: they are to be considered the foundation of pathology as a separate discipline and received an instant high acclaim. The first volume, on the contrary, appeared last, and dealt with the general principles of pathological anatomy including the Krasenlehre.

As a writer, Rokitansky was much and justly admired; his language, ever forcible and explicit, expressed with extreme clearness the enthusiasm he felt for his autopsy findings. Nevertheless, an extremely tortuous writing, typical of nineteenth century scientific German language, emerges from his meticulous descriptions of morbid appearances. It is therefore not surprising to realize that even the Italian translation is pervaded by similar devious reasonings, though it should not be ignored that, from the standpoint of terminology, often the German source text was both mistranslated and rendered with visible inaccuracies. A confusion in the use of scientific terms is likely to have derived partly from the translators’ scepticism towards Rokitansky’s ideas, as they clearly stated in the introduction to their work. It is however true that often the two translators did not even succeed in interpreting Rokitansky’s tortuous syntax, probably because they did not possess an adequate specialized knowledge.

There is no doubt that scientific language has at times experienced periods of great stability, resisting changes in principles and methods, and periods in which the rejection of a given system of thoughts affected, as a consequence, even scientific literature. Rokitansky’s work and the related translation certainly belong to the latter period described, that saw the predominance of less homogeneous texts. The results were formal changes consisting mainly of sudden substitutions, thus developing into a pure terminologic chaos. One should not forget that at that time no anatomical nomenclature had been yet introduced: as a matter of fact, the first nomenclature was to be established only in the late nineteenth century.

Rokitansky dedicated his Handbuch to Count Kolowrat von Liebestinsky, then Home Secretary of the Austro-Hungarian Empire. This earned him the gold medal *literis et artibus*, a dedication which was most precious to his heart for a number of reasons: he profoundly estimated this celebrated figure, they both were convinced supporters of liberalism, and last but not least, they both were of Bohemian origin. Now, Rokitansky’s gesture deserves our attention since the two Italian translators chose to completely omit that meaningful dedication: the sole motivation

---

**Fig. 3** Front page of the Italian translation of Rokitansky’s *Handbuch der Pathologischen Anatomie*

**Fig. 4** Quotation from the Italian translation of Rokitansky’s *Handbuch der Pathologischen Anatomie*. “No mention to this work’s merits will be given. However, a warning is needed: if the principles or, better, the dogmas put forth in the treatise derive from the Author being a convinced supporter of humoral pathology, a number of contemporary doctors would consider those deductions as hazardous, or even premature, for this reason they could not be seen as the unquestioned foundation of new doctrines. But if an error has to be found in the previously mentioned doctrines, it would be wise to praise the efforts of such a genius trying to systematically classify a great deal of disease external appearances together with the various local processes under a few general principles and, starting from the analysis of a number of pathological findings, he looked for new, simple, and constant laws. And if one feels to disagree with those laws, Rokitansky’s work certainly contains other valuable and unquestionable merits”
we can honestly ascribe to their translation choice is that Count Kolowrat, in March 1848, after having been in office for a very short period of time, left the scene. The translation presents another significant omission, that of the preface to the *Handbuch*, two pages written by Rokitansky outlining his views on pathological anatomy and humoral pathology.

Looking upon the strictly linguistic approach to the text, the considerably wide usage of technical terms characterizing Rokitansky’s highly formalized scientific language was clearly substituted with words coming from everyday language, thus avoiding the search for a correspondent term. A similar translation choice would be generally ascribed to the translator’s inability to find an equivalent and appropriate term in the target language: at the same time, this method may help in giving the text a certain degree of clearness. A great deal of incongruities and incoherences, at times real errors, emerges, above all, at a lexical level. Ambiguity arises, for instance, when the German term *Exsudat* is at times translated with *cangiamento* and at times with *stravenamento*. Similar translation solutions sound strange to the translator’s ear, since the Italian language has always had a perfectly equivalent term of Latin origin, *essudato*, as demonstrated by numerous autopsy records consulted, signed by Simon Pertot in 1873, and still owned by the Triestine Institute of Pathological Anatomy.

We do not know anything about the Italian philologist’s literary activity; as far as the physician is concerned, this is likely to have been his only translation experience, but it is certain that both of them have never been the authors of celebrated scientific works. Nevertheless, it is interesting to know that the translation of German medical handbooks exerted a strong interest on a great number of Italian clinicians: this phenomenon especially concerned Venice, at that time intimately linked to Austro-Hungarian, as well as to German culture.

Between 1849 and 1854, several hands carried out the English translation, *A Manual of Pathological Anatomy*. Interestingly, Swaine, translator of volume one, chose to omit the first fourteen pages of Rokitansky’s introduction, finding them “too filled with speculative reasoning upon the relation between power and matter for English taste” [9].

Indeed, it is significant to note that in the introductory comments to the first edition of the *Handbuch*, Rokitansky presented a philosophy of pathology which was based on the belief that structural alterations, i.e. lesions, are the most important objects of pathological examination, and that although so-called dynamic forces may exist, they can only be known through the study of the material substrate of disease [10]. In addition, all disease processes occur in material substances, and the latter alone can give us satisfactory information about the forces involved. Rokitansky’s words were by no means clear, nevertheless they expressed his thoughts on the future of pathology, thus admitting the necessity of
establishing not only a link between pathological anatomy and clinical medicine, but also with physical and chemical studies.


It was the experience acquired in the autopsy room that made Rokitansky realize that a great number of deaths occurred without macroscopically visible organ lesions. This led him to elaborate an unprecedented theory of disease: the so-called Krasenlehre. According to this theory, blood, a fluid embracing all organs, was responsible for giving rise to a disease process, which could be seen as the result of an improper balance of the protein components of the blood plasma: fibrin and albumin.

He had a peculiar interest in humoral doctrines and, drawing inspiration from hippocratic humoralism, put forth a hematohumoral theory of disease. This new humoral pathology was to play a central part in the struggle to overcome the traditional approach of the first Vienna Medical School, successfully led by Rokitansky’s predecessor, Wagner (1800-1832). Rokitansky’s idea of health was undoubtedly quite distant from the medical concepts of the nineteenth century, and his attempts to explain pathology by means of a not yet developed organic chemistry appeared too advanced to be understood. Nevertheless, his intuitions gave a remarkable contribution to pathologic anatomy since he described many facts of pathology which laid the foundation for the rapid development of pathology in the nineteenth and twentieth centuries.

Rokitansky was a genial and witty man, and his humoral pathology made a great impact on contemporary medical practice. He was undoubtedly influenced by the French School, but was not satisfied with their accurate descriptions of autopsy specimens. His aim was to consider those pathological findings as the subject of a thorough investigation: starting from the observation of a particular specimen, he thought he could extend the results of the same examination to the entire organism, a method that soon proved to be inadequate and inevitably attacked. The desire to give medicine a scientific basis found rich nourishment in Rokitansky, but the results of speculative investigation, mainly based on observation and deduction, could not be of much help to him.

Rokitansky had been trained within a different tradition, that of the prosector: a new specialist totally devoted to the performance of autopsies. He started a profitable collaboration between pathological anatomy and clinical medicine: the pathologist performed the autopsies and the clinician discussed with the pathologist the findings gathered at the bedside [10].

Together with Joseph Skoda (1805-1881) (Fig. 6), he placed Vienna in the forefront of the advance of medical knowledge and the New School of Medicine centred around the remarkable pathological studies of Rokitansky coupled with the clinical research of Skoda.

Indeed, Rokitansky’s contribution to pathological anatomy was extraordinary, but his reputation suffered because he was the author of the Krasenlehre, regarded by many of his contemporaries as the most recent manifestation of humoral pathology. The Viennese anatomist never stated the origin of this concept of disease, nevertheless the idea was clearly influenced by hippocratic medicine, dominated by the belief that illness reflected an imbalance in the four humors, i.e. the body fluids. By enunciating the Krasenlehre, Rokitansky was perfectly aware of suppling medicine with fragmentary cues that he was not able to prove.

Rokitansky’s excellence was seen in his descriptions of pathological changes; he replaced the previous symptomatic pictures of disease by creating an anatomical pathology and anatomical types of diseases. However, he was not so successful in establishing his doctrine of crasis based upon humoral pathology and just here Rudolf Virchow’s fruitful activity began.

The German pathologist, then 25 years of age, at the beginning of his long career in medicine, sharply criticized Rokitansky’s ideas and accused him of having violated the canons of sound scientific method by putting for-
ward a theory based on limited scientific theorizing. Rokitansky never offered resistance, faced the objection, and withdrew the theory from the subsequent edition of the work that came out in 1855 in a shortened version, with a different title, *Lehrbuch der Pathologischen Anatomie* (Figs. 7, 8) [11], and accompanied by a number of histologic pictures (Fig. 9).

The fame of Vienna lasted through to the 1850s, when the focus of medical activity in Europe was shifted to Berlin, where Virchow’s pathology based strictly upon natural science definitively extinguished hippocratic speculative humoral pathology.

---

**Vorrede**

zur dritten Auflage.

Seit der Veröffentlichung meines Handbuchs in zwei Auflagen ist die pathologische Anatomie mit so vielen und so einflussreichen Thatsachen bereichert worden, dass das vorliegende Lehrbuch seinem Inhalte nach wesentlich verschieden von jenem geworden ist. Darum trägt ferner bei, dass ich mich bemühte, streng an dem Faktischen zu halten und das Buch zu einem Leitfaden bei meinen Vortrugen über pathologische Anatomie und beim Selbststudium derselben einzurichten. Es erscheint deshalb dasjenige, was sich aus den Faktis an Schlussfolgerung und Ansicht ergibt, blosse seinen Grundzügen nach angedeutet. Hierin wird nun übrigens leicht herausfinden, woran ich noch zur Zeit halte und was ich aufgegeben habe.

In Bezug auf die Anordnung habe ich den alten Plan beibehalten, weil ich mich von dessen Nutzen für den Elementar-Unterricht, zumal sofern er an die klinische Beobachtung anknüpft, vielleicht überzeugt habe. — Es geschieht nämlich dadurch, dass nach ihm vom Äusseren auf das Innere gegangen wird, der Bedeutung dieses Letzteren und der Einsicht in Dasselbe nicht nur kein Eintrag, sondern man gelangt an seiner Hand auf einem die klinische Erforschung nachschmeckende Wege der Analyse zu der Auffassung eines Ganzen, dessen Bild sich desto inniger einprägt, je sorgfältiger man auf jenem Wege seine Bestandtheile erhoben hat. Wenngleich ihm gemäss z. B. die Anomalien der Textur den Anomalien des Volums, der Gestaltung u. s. w. koordinirt erscheinen, so wird man doch auf jedem Schritte gewahr, das diese Letzteren einzeln und als Complexe endlich in den ersteren ihre wesentliche Begründung finden, das von diesem am geeigneten Orte insbesondere ausdrücklich ange deuteten Standpunkt aus allerdings ihre Berechtigung eine untergeordnete ist.

Ich habe mich nach längerer Erwägung für die Beibehaltung von Holzschnitten entschieden und mich in Anbe tracht der durch sie gebotenen Bündigkeit des Textes bemüht, sie sammelt ihren Erklärungen so hinzustellen, dass sie nicht allein den Text veranschaulichen, sondern denselben auch erweitern. Sie haben übrigens das Erscheinen des Buches summarisch verzögert.

Wien im Februar 1855.

**Der Verfasser.**
Acknowledgements

The authors acknowledge Mrs. Georgina Masi who provided language review.

References