

The Influence of Hipólito Unanue on Peruvian Medical Science, 1789-1820: A Reappraisal

JOHN E. WOODHAM*

SHORTLY before General José San Martín thrust independence upon Peru, the leading doctors of Lima were congratulating themselves for having just effected a revolution of their own in Peruvian medical science. Their boundless optimism rested mainly on the remarkable achievements of Hipólito Unanue during the years from 1789 to 1813. Unanue shocked Peruvian medicine out of its routine existence and gave it new, exciting goals, many of which were realized through his persistent and extraordinary labor. By publicizing developments in nearly all fields of contemporary science, he gave his colleagues more assurance about their capacity in an age of great change. His own wide-ranging essays in the *Mercurio Peruano* (1791-1794) and his ambitious *Observations on the Climate of Lima* (1806, and revised 1815) set an example for them and won among foreigners a reputation respectable enough to help Peruvians forget their previous lack of accomplishment. His teaching attracted enough students to give the impression that, for the first time, medicine might begin to compete with law and theology for professional popularity. Finally, Unanue freely designed and brought into operation a reformed college of medicine that seemed to guarantee a brilliant future.

But instead of progressing in the orderly fashion that Unanue had indicated and reaching the rarefied heights that his students expected, Peruvian medical science fell into a decline for some thirty years. Because the falling off came so soon after Unanue's retirement in 1813, and because the previous gains had owed so much to his work, anyone studying the progress of medicine in Lima and its subsequent stagnation must understand the complex career of Hipólito Unanue.

At first glance that career presents a paradox, for letters, not medicine, brought Unanue's rapid advancement to the rank of savant.

* The author is Assistant Professor of History at the University of Oregon.

In 1789 he won the chair of anatomy in the University of San Marcos, some three years after taking the degrees of licentiate and doctor in medicine, and almost immediately he began to press for a reform of medical studies.¹ But his early reputation derived from impressive contributions to the famous journal *Mercurio Peruano*.² Its 382 issues bore the mark of his editing, and nine of its eleven volumes contained major articles from his hand. His labors on the periodical ran parallel to his teaching and overshadowed it at the start of his career.

Literary recognition pleased Unanue, for he never considered himself exclusively a physician and, indeed, rarely spoke of himself as such, usually preferring the label "philosopher," or more modestly, "writer." In an age when philosophers abounded and savants moved more easily from one subject or discipline to another, Unanue's inclination does not seem so brash or his eclecticism so unusual. Of course, his intellectual roaming developed in part from necessity. A founder of the Economic Society of Lima, he had been instrumental in choosing a broad and appealing format for its journal. As the person chiefly responsible for its contents and, increasingly, the workhorse of the group, Unanue had to be versatile in his writing, for few other members met their obligations as faithfully as he.

Thus, on reading the issues of the *Mercurio*, one finds Unanue treating other topics much more often than those relating to his profession. Of some fifty-five pieces (articles and notes), only eight dealt precisely with medicine—only one-fourth of the four hundred pages that he wrote. His essays on related fields such as botany, ocean tides, tobacco, and coca, would increase that proportion, but one could not spread the category of medicine to cover his writings on the history of the interior missions, the customs of the natives, the geography of Peru, or his notes on commerce. Nearly all of these, plus long sections of the articles on natural history—even one of the

¹Luis Antonio Eguiguren, *Diccionario histórico-cronológico de la Real y Pontificia Universidad de San Marcos y sus colegios. Crónica é investigación* (3 vols., Lima, 1940-1951), III, 183-184, 273. This and two other works by Peruvian scholars contain many valuable documents, or portions of them, that are no longer available in the original: Hermilio Valdizán, *La Facultad de Medicina de Lima* (3 vols., Lima, 1927-1929); Juan B. Lastres, *Historia de la medicina peruana* (3 vols., Lima, 1951).

²The Biblioteca Nacional del Perú published a facsimile edition of the *Mercurio* in the years 1964-1966, and made the complete set easily available to scholars. My reference to eleven volumes and 382 issues concerns those published by the Economic Society (Sociedad de Amantes del País) between 1791 and 1794, and does not include a special volume brought out by Diego Cisneros in 1795. (*Mercurio Peruano* cited hereafter as *MP*.)

pieces on medicine—can be classified as historical rather than scientific. Unanue had access to the viceregal archives and to several libraries, and he made fair use of them.³

A love of learning and a catholic taste gave Unanue some attributes of a good historian and combined with his sense of style to make him an engaging essayist. While a versatile and effective reporter and popularizer of science, he was in no sense an accomplished scientist, not even by eighteenth-century standards. To be sure, his dissertation on coca and his history of botany in Peru revealed a familiarity with Linnaeus' system for classifying plants, and his notes on ocean tides and other references showed a good grasp of Isaac Newton's laws of motion.⁴ This list could be extended for other purposes—to demonstrate that Peru was not void of current ideas, for instance—but in Unanue's case, the piling up of examples seems pointless. The articles in the *Mercurio* showed his general understanding of contemporary science, but none of them proved his competence in any of its branches.

The "Dissertation on Coca" (1794) illustrates this point very well, for it is representative of his method and also one of his best pieces. He begins by tracing the cultivation and usage of coca among the Peruvians, dredging Garcilaso's *Royal Commentaries* and Father Acosta's history for material, but admitting his debt to them. Then he inserts a botanical description of the plant made by his tutor Dr. Gabriel Moreno, but based on the researches of the Ruiz-Pavón expedition, which Unanue acknowledges, also, crediting the drawing of the plant to one of its members, Francisco Pulgar. Unanue continues with a discussion of the commerce in coca, and traces royal legislation on the subject, particularly attempts to prohibit it. He uses the same argument against prohibition that most disinterested Peruvians have forwarded until quite recently—that

³The articles on medicine are easily located in *MP*, I, III, IV, VII, VIII, IX and XI. Unanue mentions his use of the archives in "Introducción á la descripción científica de las plantas del Perú," *MP*, II (June 2, 1791), 85. He had access to a large collection of books owned by Agustín de Landaburu, whom he served as tutor and then as administrator. Unanue eventually inherited most of the estate, including the library, apparently. "Descripción de los bienes . . ." and "Memoria á la cual arreglar . . .," Archivo Nacional del Perú, Sección Notarial y Judicial, Papers of the Notary Gerónimo Villafuerte (1832-1836), X, fols. 390-399.

⁴"Disertación sobre el aspecto, cultivo y virtudes de la famosa planta del Perú nombrada coca," *MP*, XI (July 27-August 17, 1794), 234-236; *MP*, II, 68-86; *MP*, II (June 12, 1791), 108-111. The lengthy Ruiz-Pavón expedition gave another spur to the interest in botany. See the excellent study by Arthur R. Steele, *Flowers for the King* (Durham, 1964).

perhaps only the ever-present wad of coca enables the Indian to survive under his strenuous work and poor diet. Unfortunately, Unanue mistakenly regards coca as an excellent nutrient aside from its medicinal value and scolds Peruvians for not recognizing its value as an export crop.⁵

Up to this point Unanue's lengthy dissertation depends so strictly upon the works of others that no one could be sure that he had ever seen a coca plant. But in the last third of the article, he draws on his own experience to write four pages and then returns to citing authorities for the last twelve. To his credit, he tried chewing coca leaves, although without adding lime to his chew, for he dismissed this habit as a "natural instinct" of the Indians to counteract the acidity of some foods, much as "a chicken pecks at a limestone foundation after eating grain." In excluding lime, Unanue failed to get a full-strength dosage, for it apparently releases more of the cocaine from the leaf. He noted that coca tasted oily and bitter, turned the saliva green, had an astringent effect on the lining of the mouth, and gave a sensation of heat. Whether he swallowed the juice is not clear. While he devoted most of his medical observations to the effect on the stomach, he may have merely deduced those points. Several times Unanue or one of his associates also made an "analysis" by soaking leaves in hot water, drawing off an extract and then steaming (but not distilling) it until he produced a gummy substance that was less bitter than the leaf.⁶ This was the sum of his "experience."

With no more first-hand knowledge than that of tasting and boiling the coca leaf, the Peruvian savant now recommended that "precious plant" with great assurance. It alone combined, he said, all the virtues of different vegetable tonics. The aroma "stimulated and vigorized" the body. Its bitters gave "tone" to the stomach and nervous system, caused the blood to run faster, and increased "secretions and excretions," which in Unanue's practice were all indications of a state of health. Finally, the "sugary and oily mucilage" of coca supplied the "animal food" that repaired the body.⁷

None of Unanue's limited experience with coca yielded these

⁵ *MP*, XI, 205-214, 229-236, 245.

⁶ *Ibid.*, 237-240.

⁷ *Ibid.*, 240-243. Unanue was neither the first nor the last person to misjudge the qualities of coca. See the authoritative study and excellent annotated bibliography in UNESCO, "Report of the Commission of Enquiry on the Coca Leaf, May, 1950," United Nations, 5th Year, 12th Session, *Official Records* (Spec. Supp. No. 1).

observations, despite his saying so. They were simply extensions of theories that he had borrowed from others, especially Hermann Boerhaave on physiology and William Cullen on digestion.⁸ It now appears that Unanue possessed more talent for reconciling diverse opinions than for basing scientific inquiries on close and extensive observations, let alone experiments. Cullen would have demanded, at the least, a test to determine whether extract of coca would curdle milk before discoursing on its acidity, and any informed chemist would have distilled the mixture. But none of Unanue's associates, not even his fellow physicians, questioned his findings—at least not in public—and their failure to do so indicates something about the intellectual disposition of late colonial Peruvians.

There is good reason to inquire how Unanue came in the 1790s to assume the leadership of the medical profession when his writings did not mark him as a commanding authority in the field. Apparently, his contributions to the *Mercurio* provided the springboard for a successful career in medicine even without demonstrating his capacity in it. If so, how does one account for the almost immediate acceptance of the young professor as a reformer of medical education and—within a short time—even as the planner of a new medical college? The fact that Unanue's literary career outshone his professional activities did not result from any failure to publicize his work as professor of anatomy, for he fully reported on his teaching in the pages of the *Mercurio*.

In these articles he wrote eloquently about the need for reform but vaguely about what was required or about how he intended to accomplish it. Even when he called for a new college, he was specific only when he dealt with anatomy, his own chair. Perhaps he felt that most of his audience needed no details, understanding full well what he alluded to. According to all accounts, by 1789 formal medical training in the university had earned a reputation for shod-

⁸ Hermann Boerhaave (1668-1738) won great fame for his teaching of medicine, botany, and chemistry in the University of Leiden. In the first half of the eighteenth century, he seems to have been the best-known physician in the world. His influence persisted throughout the century in many countries, and especially in the Spanish kingdoms, where reformers began replacing older texts with his *Aphorisms* and *Institutiones medicae*, supplemented with the commentaries of his pupil Gerhard van Swieten. William Cullen (1710-1790), the outstanding British clinician, taught at the Universities of Glasgow and Edinburgh. On both men, see Lester S. King, *The Medical World of the Eighteenth Century* (Chicago, 1958). Unanue read Cullen closely and often quoted him. I do not know whether Cullen ever mentioned coca specifically, but Boerhaave referred to it as a "veritable nutritive," whose juices yielded "vital strength." Quoted in W. G. Mortimer, *Peru: History of Coca* (New York, 1901), 292.

diness, and aspiring physicians had to apprentice themselves to a skilled practitioner whom they regarded as "modern." Unanue himself owed his education not to the regular faculty but to Gabriel Moreno, a professor of mathematics who also practiced medicine.⁹ While each of the chairs had changed hands in the five years preceding Unanue's entry into the faculty, no improvements were noticeable. Beside his plodding colleagues, then, Unanue seemed to move with both force and speed. His action gave encouragement to doctors and students who were receiving an inferior and heavily theoretical training or no training at all.

The attention paid to the opening of the Anatomical Amphitheater in 1792 indicates the pitiful state of medical training, as well as a love of ceremony. It was nothing more than a room in the Hospital of San Andrés, which the Spanish government had ordered constructed back in 1758.¹⁰ "Lazy professors of anatomy" caused the delay, Unanue said, by doing nothing more than "piling up reports" on the facility. Unanue worked three years for its establishment, pumping one viceroy for building funds and awaiting the coming of the next, Francisco Gil, to obtain a salary for himself and an assistant. Finally all the dignitaries of the realm turned out for the dedication on November 21, 1792. At the formal opening no one mentioned that the amphitheater had no operating budget and neither furnishings nor surgical instruments.¹¹

In 1792 Dr. Unanue seemed confident about the prospect for reform and had yet to learn how slowly a willing but penurious government might move. His early assurance was understandable, for his own concerns and those of the Crown dovetailed neatly. Since 1771 the government had been promoting a substantial reform of the university, including the faculty of medicine.¹² Practically all the changes that Unanue suggested had their origin in projects that innovative Spaniards, especially the ministers of Charles III, had been

⁹ Unanue paid tribute to his teacher on many occasions, but the dedication in *The Climate of Lima* is the most moving of these. Gregorio Paredes, another of Moreno's students, published a biographical essay in *Almanaque Peruano* (Lima, 1810), n. p.

¹⁰ *Memorias de los virreyes que han gobernado el Perú* (6 vols., Lima, 1859), VI, 97; "Oración inaugural para la abertura del Anfiteatro Anatómico," *MP*, VII (February 3-17, 1793), 126.

¹¹ Unanue, "Informe . . . sobre varios establecimientos literarios . . ." [October 15, 1794], in Guillermo del Río (ed.), *Monumentos literarios del Perú* (Lima, 1812), 11-12.

¹² Daniel Valcárcel (ed.), *Reforma de San Marcos en la época de Amat* (Lima, 1955), 16, 38-40.

urging for some time. The king's ministers had advocated improvements in agriculture and industry, an increase in population, and a greater diffusion of learning with a heavier emphasis on science. Even in the 1790s the Crown still adhered to those policies, though with varying degrees of enthusiasm.

The fact that Peruvians responded rather late allowed Unanue to offer his plans with some confidence and yet with a note of urgency. At the dedication of the amphitheater, he advanced the fitting argument that modern training in medicine would yield more and better doctors who could displace the quacks, check the decline in population with effective treatment of disease, and thus enlarge the labor supply, with obvious benefits for the economy.¹³ The government naturally lent him what support it could give, and the viceroys' ability to shift unclaimed surpluses from royal and municipal budgets proved essential. Their juggling of funds and their intervention with the city council in fact provided almost all the money for the construction and operation of the amphitheater and later the college.

But the shortage of money limited the Crown's assistance, even to a "loyal and deserving subject" like Unanue. Three weeks after the theater opened Viceroy Gil turned over enough money to purchase a "handsome wooden table." Apparently he got the funds from the municipality, but he was unable to allocate enough for instruments and operating costs until mid-1793.¹⁴ In view of these and other difficulties, Unanue began petitioning the crown for more support, for the direct funding of a medical college, and for a promotion. As the years passed, his requests became more anxious, but until 1810 the response of the Spanish councils remained similar to the first answer, which he received in 1795. No better post was open at the moment and the costs of war prohibited any new projects.¹⁵ The young Unanue seems to have arrived as a reformer, for the Crown accorded him the honor of delivering the same refusal that it customarily gave to older, more deserving men.

Circumstances such as these are likely to cause resignation or even bitterness in an ambitious man, and a little of this is noticeable in several of Unanue's statements after 1800. In 1793 and 1794, however, he showed pride in the amphitheater and confidence in the possibilities that it offered. The younger doctors, mostly hospital physi-

¹³ *MP*, VII, 87-97, 108, 126-127.

¹⁴ *Memorias de los virreyes*, VI, 98.

¹⁵ Letter no. 123 of the Viceroy Marqués de Osorno, July 23, 1800, Archivo General de Indias, Seville, Lima 719, mentions the oficio of 1795 (cited hereafter as AGI).

cians, and the medical students caught some of his enthusiasm and joined with him to end the practice of teaching merely theoretical anatomy and to place his institution and himself unmistakably in the forefront of the progressive medical faction.

Part of Unanue's attraction sprang from his reputation as a bold and questing savant, which he brought over from his association with the *Mercurio*. The whirl of professional activities that he initiated in June 1793 and helped sustain for two years also drew disciples to him. Still another force, though less measurable, was Unanue's genial manner, for he extended his diplomacy to include most members of the medical profession. In fact, he seems to have shunned only the three professors who outranked him and some of the surgeons. He granted his colleagues, most of them undistinguished, the same tactful respect that eminent members of the Economic Society accorded one another, even though some of the doctors proved more careless than he in drawing far-reaching conclusions from patently insufficient data. It appears that he refrained from harsh criticism of their shortcomings and preferred to emphasize their strong qualities. This consideration won the enduring affection and deference of the younger physicians. Out of perhaps two dozen close associates, only one broke away momentarily to dispute him, and then over a purely administrative matter.

The reputation of Unanue as a skeptical and innovative professor rested largely on his willingness to range beyond the ordinary limits of the course on anatomy—even beyond the broader functions stipulated in the revised statutes of 1771. The crown had then directed medical faculties throughout the empire to emphasize practical instruction, requiring the professor of anatomy to supervise his students "at least twelve times a year" in demonstrations performed on human cadavers. But when the amphitheater became usable in June 1793, Peruvian students watched dissections once or twice a week, and the frequent use continued for about two years. For the regular lectures the statutes specified a 1748 edition of Lorenz Heister's text, which Unanue supplemented with more recent works by William Cullen and John Pringle.¹⁶ In two of the sessions at the hospital he seemed to be trying to test their theories on the causes of dysentery. By asking whether "fixed air" (carbon dioxide) might

¹⁶ Valcárcel, *Reforma de San Marcos*, 38-40. Heister (1683-1758) was a German anatomist, and the text was his *Compendium anatomicum*. On Cullen, see note 8. John Pringle (1707-1782), a progressive British physician, published excellent papers on putrefaction and antiseptics as well as *Observations on the Diseases of the Army*. See King, *The Medical World*, 133-138.

be useful in the treatment of that disease, he went even further afield. He lightly suggested that the surgeons resolve this question if they could and invited José Pastor Larrinaga to try it. Perhaps it was a taunt and nothing more, for Unanue knew that Larrinaga traded in the occult.¹⁷

Dr. J. M. Valdés, an established physician, took the challenge seriously and turned out a heavy and pretentious "dissertation" on the medical value of fixed air. His study is worth examining because it offers another example of the reception of eighteenth-century science in Peru. Also it suggests the talents of the men who associated with Unanue. Like many others of them, Valdés seemed to be haunted by the dream of making a great discovery by synthesizing. In this case Valdés got his answer by blending theories on the composition of the air, on putrefaction, and on general causes of disease. More precisely, he drew from Antoine Lavoisier and other chemists facts on the nature of carbon dioxide and its manufacture, from J. B. Van Helmont the idea that "flesh owes its firmness and consistency to the portion of fixed air that it contains," and from David Macbride [*sic*] the conclusion that putrefaction could be stopped by restoring that gas. If exposure of a decaying piece of meat to carbon dioxide made it fresh again and drinking carbonated water soothed the stomach, Valdés reasoned that a good enema of fixed air could reverse a case of "putrid dysentery." He judged the remedy quite effective, if properly applied, for the gas would prevent "corruption" where emetics and purgatives had failed to expel the "morbific matter," and give additional time for the use of other medicines.¹⁸

Some limitations of Peruvian science are evident in Valdés' work as in Unanue's, but Valdés' weaknesses are more glaring. It troubled Valdés not at all to hitch Lavoisier and Van Helmont to the same

¹⁷ "Indagaciones sobre la disentería y el vicho, y observación primera hecha en el Real Anfiteatro," *MP*, VIII (June 23, 1793), 128-131; "Indagaciones . . . , observación segunda . . . ," *MP*, IX (September 19, 1793), 44-45. As editor of the journal, Unanue accepted several fanciful pieces from Larrinaga, who wrote under the anagram "Ganarrilla." See his dissertations on changing of sex and unnatural births in *MP*, V (May 31, 1792), 66-84, and *ibid.* (August 9, 1792), 240-243. Unanue made no comment on them at the time, unless he wrote the anonymous letter accusing Larrinaga of making a show of familiarity with current medical authorities without actually understanding them. *MP*, VII (February 24-March 3, 1793), 138-155.

¹⁸ Valdés, *MP*, IX (October 10, 13, 1793), 88-102. Herbert Butterfield discusses Van Helmont and Lavoisier in *The Origins of Modern Science* (rev. ed., New York, 1965), chapter 11. David Macbride [*sic*] did offer, in *Experimental Essays*, the theory that Valdés attributed to him. See J. R. Partington, *A History of Chemistry* (4 vols., London, 1962), III, 143.

wagon, even though they pulled in different directions. Lavoisier's analysis of the air completely overturned Van Helmont's theories of irreducible elements, but that raised no doubts about Van Helmont in Valdés' mind. In fact, the new chemistry merely showed Valdés how to make or where to find carbon dioxide, while an older or less reputable science gave him the basis for his main thesis, that fixed air stops decay. It seems, then, that Valdés had some acquaintance with contemporary science, if only by hearsay, but completely missed the spirit of the age. Otherwise, he would have fumigated a piece of tainted meat to see what happened.

If Valdés is typical, Peruvian physicians sorely needed to check theory with observation and experiment and to make a closer reading of the main sources. Hipólito Unanue's own method fell short of perfection, but it still surpassed that of his colleagues and enabled him to make genuine improvements and introduce further concentration in the profession.

After teaching his course for a year in the Royal Amphitheater, Unanue found a way to promote clinical observations among practicing physicians and to bring them into closer association with his own students. On July 18, 1794, he announced his plan for a series of "clinical lectures on medicine and surgery," to start the following week. The idea was simple yet arresting. Each Thursday afternoon at four o'clock a physician or, on alternate weeks, a surgeon would lecture in the amphitheater on subjects chosen and prepared in advance, keeping to specific diseases or conditions such as smallpox, inflammation, or fever. The speaker might draw exemplary medical cases from books, from his own practice, or from those submitted by students, but apparently he did not roll the patient out and make him a specimen, as did clinical lecturers in European university hospitals. If he dealt with a disease whose treatment required surgery, he then performed a demonstration on a cadaver.¹⁹

Unanue conceived of the lectures as a means of teaching diagnosis and treatment, of encouraging a freer exchange of ideas within the profession, and of placing more dependence on observation, "which ought to be the basis of all medical discourse." He wanted no dogmatism in these meetings, and he asked that no one advocate his favorite medical system, but instead try to keep an open mind and be guided by experience. He required each speaker to discuss common symptoms, likely causes, and the probable course of the illness,

¹⁹ "Establecimiento de unas conferencias clínicas de Medicina y Cirugía," *MP*, XI (July 24, 1794), 200-203.

and then to recommend the best remedies, touching on their classification, composition, dosage, and efficacy. Finally, Unanue set aside a portion of each meeting for discussion. Observing an order of seniority, auditors could direct questions to the speaker, point out errors in his lecture, or even debate with him. Unless he judged their remarks either a digression or a point of "metaphysical subtlety," he was bound to answer them.²⁰

The younger physicians of Lima responded eagerly to the plan, apparently attracted by Unanue's undogmatic approach and his impatience with traditional academic procedure, for to them "metaphysical subtlety" was synonymous with "stale scholasticism." By July 24, seven persons had already agreed to give lectures, following Unanue, who opened the series by discussing "Fevers in General": J. M. Valdés on "inflammation," Dr. José Dávalos on "smallpox," José Puente on "suppuration," Dr. Baltasar Villalobos on "phrenitis," J. M. Dávila on "gangrene," Dr. Luis Bueno on "dysentery," and José Vergara on "angina" (sore throat).²¹

Something more than a simple interest in professional activity lurks here, for several of the participants had had difficulty advancing their careers. Two of the four mulattoes bore grudges against the University of San Marcos, which had made life troublesome for them. Valdés had gotten around the loosely-enforced prohibition of colored persons studying in the school, but suffered the humiliation of being barred from receiving the degrees that would certify his accomplishment. Until 1807 he held nothing more than a "special license" to practice medicine.²² Dávalos went abroad to take a doctor's degree in the University of Montpellier, but failed to win a professorship in Lima until Unanue founded the new medical college. Puente and Dávila, also mulattoes, belonged to the surgeon's guild. Like Dr. Villalobos, the creoles Bueno and Vergara probably held posts in the hospitals of Lima.²³ Although none of these men was an academic, all cooperated with Unanue in reforming medical education. Add only the names of several students trained in the amphitheater and one has a virtually complete roster of the group that established and staffed the college of medicine.

One can further measure the reception of the lectures and Unanue's innovative work in the amphitheater by noting how long

²⁰ *Ibid.*, 201-204.

²¹ *Ibid.*, 204.

²² Carlos Enrique Paz Soldán, "José Manuel Valdés," *Anales de la Sociedad Peruana de Historia de Medicina*, II (1940), 5-6 of appendix.

²³ Lastres, *Historia*, II, 265-266, 297n, 324.

the series lasted and how many students it attracted to the institution. The weekly lectures continued, apparently without interruption, for thirteen months, which is all the more remarkable when one recalls that the professors received no stipend.²⁴ After the clinical lectures ended in August 1795, the Royal Amphitheater still remained the main center of professional activity. Perhaps a dozen students studied with Unanue while he was professor of anatomy, but their small number takes on more significance when it is remembered that the cloister of the University traditionally contained only three or four physicians and no more than twelve in 1793, and that the population of Lima was less than 60,000. Nine bachelor in medicine degrees were awarded between the founding of the theater in 1792 and the creation of the medical college in 1809. Of these only two went to candidates not directed by Unanue, and even these two worked with his old tutor Gabriel Moreno and not with the regular medical faculty. The boards of examiners consistently described the students as "thoroughly trained."²⁵

By the end of the 1790s, Hipólito Unanue had gotten not a bit closer to his goal of establishing a new college of medicine, and he seemed resigned to the prospect of a long tenure in the chair of anatomy. An entrenched and complacent faculty of medicine still stood in the way of the basic reforms ordered long ago by the Crown. Drs. Juan de Aguirre (*prima* professor of medicine and *protomédico* from 1784), Francisco Rúa (in the vespers chair from 1785), and Marcelino Alzamora (in that of method from about the year 1787) won their positions ahead of Unanue, lived long lives, and thus effectively stopped him by holding until 1807 the very chairs controlling the possibility of reform.²⁶ Until these men moved, the founding of a renovated medical school was utterly impossible, for each one chose not to cooperate with Unanue. In the same manner,

²⁴ Valdizán, *La Facultad de Medicina*, II, 20n.

²⁵ *Ibid.*, I, 169; Eguiguren, *Diccionario*, III, 708-709; José Toribio Medina, *La imprenta en Lima* (4 vols., Santiago de Chile, 1905-1907), III, 236, 245, 278, 281-285, 289, 290, 315, 323, 350, 354.

²⁶ Eguiguren, *Diccionario*, III, 144, 163-164, 174. "Prima" (teaching in the morning) denoted the chair of the major professor, who also served as chief medical examiner (*protomédico*). "Vespers" or "Vísperas" (afternoon) was the second or subordinate chair. The professor of method dealt with the treatment of disease. See Chapter 9 and the glossary in John Tate Lanning, *The University in the Kingdom of Guatemala* (Ithaca, 1955); and George M. Addy, "Alcalá before Reform—the Decadence of a Spanish University," *HAHR*, XLVIII (November 1968), 581-583.

they took no part in the activity surrounding the several scientific expeditions which stirred Lima in that era.²⁷

The viceroys agreed with Unanue when he accused the professors of occupying their chairs "only in name" and considering their jobs as mere "prizes in their literary careers."²⁸ The government was also aware that the doctors ignored royal orders that repeatedly called for the introduction of modern science and an emphasis on practical instruction in the universities. But the Spanish regime was virtually powerless against them, for it had committed itself as firmly to the autonomy of the university as to reform. Thus the Crown wisely backed Unanue, but with equal prudense it chose not to interfere often with university administration, and certainly not to remove the three professors of medicine who had won their chairs by perfectly legal and traditional means. Herein lay one of several dilemmas that hampered the modernizing of medical education in Peru. Other significant factors would soon appear, such as the continuing difficulty of financing improvements, further limitations of Unanue's science, and the shortsightedness of his followers.

Having reached a dead end after about ten years in the chair of anatomy, Unanue turned back to serious writing as naturally as one shifts weight from one foot to another. He threw himself into his *Observations on the Climate of Lima*, beginning about 1799 and completing it by July 1805.²⁹ The book afforded him an opportunity to develop several aspects of science which his articles in the *Mercurio* had avoided altogether or treated very generally; and his fuller work shows greater intellectual maturity as well. In it he still displayed his talent for keeping abreast of developments in a great many fields. Since the earlier period, he had read, for example, Thomas Jefferson's *Notes on the State of Virginia* (1784), Erasmus Darwin's *Zoonomia; or the Laws of Organic Life* (1801), Alexander Wilson's *Observations Relative to the Influence of Climate on Vegetable and Animal Bodies* (1780), Benjamin Moseley's *Treatise on Tropical Diseases* (1792), and a sizable stack of recent books on other subjects.

²⁷ Aguirre dropped in to hear Unanue announce the series of clinical lectures on July 18, 1794, but seems to have taken no part in them. *MP*, XI, 199. Steele's book on the Ruiz-Pavón expedition offers the same contrast. Aguirre was totally uncooperative, and Rúa's participation amounted to nothing more than offering a manuscript to one of the botanists. Drs. Unanue, Moreno, and Cosme Bueno, on the other hand, remained genuinely interested in the work of the expedition. Steele, *Flowers*, 65, 139, 273-274.

²⁸ José F. Abascal (1806-1816), *Memoria de Gobierno*, edited by Vicente Rodríguez Casado and J. A. Calderón Quijano (2 vols., Seville, 1944), I, 41, 47.

²⁹ Unanue, *Observaciones sobre el clima de Lima y sus influencias en los seres organizados, en especial el hombre* (Lima, 1806), 52-55.

This partial list suggests that the eclectic Unanue had yielded to the necessity of concentrated reading on the main subject of his book. The book itself reveals a mature writer not nearly so deferential to authorities as before, but submitting his sources to the test of reason and first-hand experience. That method enabled him to set forth systematically the physical aspects of Lima's climate, but it did not always lead to correct answers. He saw no reason to reject the reigning theory on the cause of earthquakes—that "electric sparks" exploded vapors trapped in underground caverns—and yet his own observation of nature and of his patients brought him to set aside Wilson's notions about the power of moonlight in accelerating both putrefaction and vegetable growth and in causing attacks of asthma. In this case, it made no difference that Wilson was a pupil of the celebrated William Cullen.³⁰

Eighteenth-century writers, both whimsical and grave, tended to give full play to the influence of climate, and Unanue was no different, although for him it was no trifling matter. He believed that climate was truly the primary causative force in disease and, accordingly, devoted the last half of his book (some ninety-five pages) to that subject. Unanue saw a few illnesses springing from immoderate living and abuse of the body, but he thought that most serious diseases had their origin in weather changes, especially drops in temperature, however subtle. The cold closed the pores of the skin, checked the sweating of "transpirable humors," and trapped "noxious gases" within the body, producing disease. The generally warm and humid climate of Lima would not have been so fearsome had nature not given residents of the tropics a more delicate and porous skin, sensitive to the slightest cooling.³¹ Unanue duly cautioned them of damp and variable weather, indicated common diseases and their seasons, and listed some sensible rules for maintaining health.

This final section of *The Climate of Lima* did not impress anyone for its originality, but it soon gained wide acceptance in Lima as a near-perfect medical system. Something of its success may be due to Unanue's diplomacy in citing the sounder writings of his colleagues (Drs. Moreno, Valdés, Dávalos, and Villalobos) and ignoring their more fatuous pieces.³² Even more important were the symmetry and

³⁰ *Ibid.*, 26-28, 47-52.

³¹ Unanue, *Observaciones*, 106-113.

³² For example, in the second edition of his book Unanue cited Valdés' "excellent thesis" on the use of balsam of copaibo but never mentioned his dissertation on the medical value of "fixed air." *Obras científicas y literarias* (3 vols., Barcelona, 1914), I, 94.

eloquence of his style, and the fact that Unanue seemed to have confirmed his theories with modern methods. The idea that climate influenced disease was at least as old as Hippocrates, and Drs. Dávalos and Valdés had preceded Unanue in insisting that the climate of Lima dictated special rules in medicine. But old as the basic assumption was, Unanue supported it with respectable and current authority, gave it full expression—to be sure, in language that one critic found too “poetic”—with a logical proposition and well-developed corollaries, and checked it himself.³³ In fact, for six years he had collated weather changes and incidence of disease, employing both meteorological and clinical observations, and had discovered enough repetition to clinch the argument. Erroneous assumptions and misinterpreted information rendered the system faulty, but for a long time no one realized this, not even Alexander von Humboldt who considered the book “an excellent physiological treatise.”³⁴

Having attracted his colleagues with the simplicity and apparent logic of his theories, Unanue also counseled them on the best method for arriving at sound judgments on medicine. No longer was he the cautious teacher of the 1790s, recommending that all systems be held in abeyance and theories made to conform with experience. Now Unanue declared for a very traditional and limited procedure: “I consider more useful the [study of] epidemics described . . . by Hippocrates, Sydenham, and Balonius than the application of the laws of mechanics, chemical analysis, spasms, and stimuli in order to explain the phenomena of the living body.”³⁵ His rejection of chemistry is the more telling in that modern medicine eventually shrugged off the doctrines of the “mechanists” and the “vitalists,” as well as Unanue’s own system. His inclination never dulled his own appreciation of contemporary science; if he accepted Edward Jenner’s small-pox vaccine, he applauded with equal eagerness Humboldt’s discovery that the atmosphere of Lima contained as much “vital air” (oxygen) as that of Europe.³⁶ But in rejecting chemistry, Unanue relegated to

³³ With obvious pride, Unanue discussed the notices that his book had received in a preface to the second edition (Madrid, 1815). It is unfortunate that the editor of Unanue’s collected works, Eugenio Larrabure y Unanue, chose to strike the brief criticism of a Spanish reviewer when Unanue himself did not hesitate to include it. For the unexpurgated text, see the original or the edition by Carlos Enrique Paz Soldán (Lima, 1940), 3-5.

³⁴ Alexander von Humboldt, *Essai politique sur le royaume de la Nouvelle-Espagne* (2 vols., Paris, 1811), I, 68.

³⁵ Unanue, *Observaciones*, 105.

³⁶ *Ibid.*, 11-13; Humboldt, *Essai*, I, 68-69. As early as 1802, Unanue had attempted to use Jenner’s vaccine, but the fluid proved to be inert and thus the

an inferior position a discipline in which genuine experimentation was possible.

The would-be founder of the medical college and the future authority on Peruvian medicine also downgraded surgery. In the days before anesthesia suffering and the grim prospect of death caused many persons to forego surgery whenever they could, but Dr. Unanue's prejudice against surgeons was not born out of a concern for the patient. His own art of healing made use of emetics, purgatives, and diaphoretics to "expel the morbid matter" and hardly required surgical techniques. Furthermore, he regarded the local surgeons as quacks. His opinion of them seemed to develop from his disdain for José Pastor Larrinaga, the mulatto surgeon whom he had taunted in the amphitheater many years earlier.

Unanue's suspicion of surgeons dated from April 6, 1804, when Larrinaga became the publicist for a local midwife who claimed that a Negro woman had just given birth to a "squab pigeon." The surgeon determined through dissection that the object was indeed a bird but erred in thinking such a birth possible. Before the medical tribunal, Unanue and his colleagues easily proved it impossible, but also insisted that the pigeon's carcass was a fetus or "just a piece of meat." Larrinaga thus had some reason for wondering aloud whether the distinguished professor of anatomy could recognize a bird when he saw one.³⁷ But neither he nor the leading doctors of Lima realized that someone had merely applied the pigeon carcass to stop a hemorrhage, probably before the midwife arrived. This device for stopping bleeding was an ancient custom that had survived in Peruvian folk medicine.³⁸ The dispute tells more of professional issues than of science, to be sure, but it does raise doubts about the teaching of anatomy in Lima. It also offers some idea of how fine a line still separated trained doctors from medicasters.

At this stage in his career, Unanue seemed inclined to disparage two disciplines that were becoming more and more essential to progressive medicine. Yet when he came at last to establish the college of medicine he demonstrated once again the fairness that had marked his previous reforms in education. Dr. Juan Aguirre, the protomédi-

vaccination did not "take." Lima physicians made successful vaccinations from October 1805. Unanue published a set of rules for administering the vaccine, based on his own experience, in the 1815 edition of his book. *Obras*, I, 106-107.

³⁷ José Pastor Larrinaga, *Cartas históricas á un amigo ó apología del pichón palomino que parió una muger . . .* (Lima, 1812), *passim*.

³⁸ George M. Foster, "Relationships between Spanish and Spanish-American Folk Medicine," *Journal of American Folklore*, LXVI (July-September 1953), 206.

co, died on November 13, 1807, vacating an office that he had held for twenty-three years and opening the way for change.³⁹ With deliberate speed Viceroy José Abascal appointed Unanue to that position and asked him to draw up plans for the new school and then to serve as its director. Even though Unanue had lowered his estimate of surgery after the Larrinaga case and had expressed in his book some doubts about the value of chemistry, he still suggested a broad curriculum that included those fields plus sixteen more: arithmetic, geometry, mechanics, optics, astronomy, experimental physics, mineralogy, botany, anatomy, zoology, pathology, psychology, clinical medicine, obstetrics, pharmacy, and "topographical medicine." Instead of slighting any field, Unanue devised a curriculum that was more elaborate and ambitious than any of those proposed by the Spanish government.⁴⁰ The ultimate test of his seriousness—that is, the administration of so large a college—never presented itself, for no money could be found to endow so many chairs.

Abascal made it possible to establish the school, but even his efforts failed to supply what Unanue requested. Over the next three years, following the advice of Unanue and the city council, the viceroy collected some eighty thousand pesos by sponsoring extra bull-fights and cock-fights, and by soliciting donations from intendants, bishops, and corporations within the realm. That sum covered the costs of constructing a two-story building, improving the botanical garden, and furnishing a printing press and "various instruments." Out of his own pocket Unanue paid for a dining hall, a natural history room, and a library. Each man collected several thousand pesos for student scholarships, and together they devised an elaborate but sensible plan whereby towns could receive trained doctors by financing their education in the college. Abascal may even have tapped income from vacant chaplainships and Indian tribute for this purpose.⁴¹

³⁹ Eguiguren, *Diccionario*, III, 870.

⁴⁰ *Obras*, II, 460; Abascal, *Memoria*, I, 42-43. The viceroy's appointment of Unanue as protomédico and, later, as *prima* professor of medicine brought a strong protest from Dr. Dávalos, who accused Abascal of violating the statutes of the university in bypassing the trial-lecture, the traditional method of filling vacancies. The Council of the Regency ruled that the viceroy possessed the authority to raise Unanue to the first chair, especially since he had requested a general reform of medical studies. Josef de Limonta to Abascal, March 2, 1812, AGI, Lima 1028.

⁴¹ Abascal to the Council of the Regency, January 13, 1810, AGI, Lima 798; Limonta to Abascal, March 2, 1812, Lima 1028; Abascal, *Memoria*, I, 39-41; Abascal, "Oficio . . . sobre la erección y establecimiento de un colegio de medicina," 1808, Biblioteca Nacional de Perú, Sala de Investigaciones, D9708 (cited hereafter as BNP, SI).

Paying for buildings proved much easier than funding salaries for the faculty, as the Crown forbade new demands on the royal exchequer, whether long- or short-term. When the college opened in August 1811, it had only ten chairs, all but one of which had merely been shifted from the university. The city council agreed to continue supporting the Royal Amphitheater, at a slightly increased rate, and also to endow the professorships of anatomy, materia medica, and clinical medicine (the new chair). The university permitted the transfer of two chairs of mathematics, two of medicine, and that of moral philosophy, whose holder doubled as rector. In a move that was too symbolic not to have been deliberate, the viceroy obtained the suppression of two inactive chairs of Aristotelian philosophy to provide professorships in chemistry and experimental physics.⁴² At its fullest the faculty contained about half the number of teachers that Unanue had requested, but even so, the process of shifting chairs to the college afforded some opportunity for revitalizing those courses.

In 1813, two years after San Fernando College began functioning, Hipólito Unanue ended his teaching career with mixed feelings about his accomplishment.⁴³ He showed pride in the faculty, in the recently published texts used, and in the number of students whom the college attracted. Nearly all of the professors at the time of his retirement were former students or associates in the amphitheater: Miguel Tafur (medicine); José Vergara and Félix Devotti (clinical studies); Francisco Romero and J. G. Paredes (mathematics and geometry); J. M. Dávalos (materia medica); and José Pezet (anatomy). In 1815 Joaquín de Larriva took over the chair of psychology, and Laureano de Lara began teaching a course in experimental physics

⁴² Valdizán, *La Facultad de Medicina*, III, 95-102.

⁴³ Pleading "ill health," Unanue requested and received a leave of absence in 1813 that apparently extended to 1816, for during most of that period Unanue was in Spain representing the province of Arequipa as deputy to the Cortes and then afterward as *procurador*. After his return, he may have resumed teaching, but I doubt it very much. Between 1813 and 1825, Miguel Tafur assumed part of Unanue's work as acting protomédico, and he and Félix Devotti seem to have alternated in the first chair. From 1816 to 1820, Unanue probably lived on his hacienda in the valley of Cañete, and from 1821 to 1825 he served as Minister of Finance in the governments of San Martín and Bolívar. As further evidence that he had retired, Unanue's name does not appear in the existing records of either the college or the *protomedicato* after May 12, 1815. "Expediente de las visitas de boticas . . . , 1813," BNP, SI, D11370; Expedientes 24-31, Archivo Nacional del Perú, Sección Histórica, Real Tribunal del Protomedicato, Años 1815-1832, only leg.; Eguiguren, *Diccionario*, III, 946, 1024, 1025, 1116-1118. Medina, *La imprenta*, IV, 91-251, *passim*.

two years later.⁴⁴ Unanue's choice of texts gave the curriculum a fairly up-to-date stamp, for he recommended the works of Hermann Boerhaave and the "authors of the Leyden school" for medicine, those of Antoine de Fourcroy and Mathurin J. Brisson in chemistry and physics, and the works of Linnaeus for botany, Benito Bails in mathematics, and Andrés del Río for natural history.⁴⁵ By 1820 the college had enrolled at least sixty students—perhaps more—and granted no fewer than fifteen degrees of bachelor in medicine, and one licentiate. During roughly the same period the protomedicato licensed ten physicians, forty-four surgeons, and twenty pharmacists, many of whom were graduates of the college. It would be impossible to find in the colonial era another period in which so many well-trained Peruvians entered the medical profession.⁴⁶

But even during its best years the college fell short of Unanue's goals and exhibited other flaws that he did not recognize. In 1813 he complained that inadequate instruments and laboratories were preventing the school from becoming, in his opinion, the best one in the Spanish world.⁴⁷ By the year of his retirement, only one new course (clinical medicine) had been added, and he probably realized that the fields of psychology, experimental physics, chemistry, botany, and natural history would never receive the attention that he had promised to give them. In fact, Peruvian medical students were not offered such a broad range of courses until about 1869, nearly sixty years later.⁴⁸ Unanue's plan to emphasize practical instruction by placing the school within a hospital had failed at the outset, and he had settled for a working agreement with San Andrés and Santa Ana hospitals, adjacent to the college. In 1813 balky superintendents again tried to exclude medical students from their hospitals, forcing one of the rare professors of surgery to advertise that his students would perform operations, free of charge, in order to practice "knowledge already attained."⁴⁹

The sporadic teaching of "auxiliary" courses owed something to

⁴⁴ Eguiguren, *Diccionario*, III, 874-876, 890, 891, 939, 981, 994, 1005, 1037.

⁴⁵ The texts, not specified by title, were perhaps these: Boerhaave, *Aphorismi* (1709); Fourcroy, *Leçons d'histoire naturelle et de chimie* (1781); Brisson, *Dictionnaire raisonné de physique* (1781), Linnaeus, *Parte práctica de botánica* (1784); Bails, *Principios de matemáticas* (1776); Del Río, *Elementos de oricognotia* (2nd ed., 1832).

⁴⁶ The figures in this estimate are based on Eguiguren, *Diccionario*, III, 897, 898, 944, 945; Medina, *La imprenta*, III, 397-421, and IV, 25-271, *passim*.

⁴⁷ *Verdadero Peruano*, I (January 28, 1813), 211.

⁴⁸ *Anales Universitarios del Perú*, IV (1870), 60-61.

⁴⁹ *Verdadero Peruano*, I, 211.

a severe shortage of funds that became even more noticeable under the republican government. But the lack of emphasis on surgery and chemistry suggested a scarcity of qualified teachers and perhaps Unanue's low regard for surgeons. His statutes for the "San Fernando College of Medicine and Surgery" failed to require supervised operations for students of surgery, and the Spanish Medical Directorate—which reviewed the plans between 1810 and 1813—forced him to include that provision.⁵⁰ Viceroy Abascal had had to insist that Unanue place Dr. Pedro Belomo, a Spanish naval surgeon, on the faculty, but when he declined to serve, Unanue seemed in no hurry to find another surgeon. Years later Dr. J. M. Valdés criticized the lax and irregular teaching of surgery, a chronic shortage of money, and frequent closure by the government. He regarded these as the main reasons for the decadence of the college, which he directed during the last nine years of its existence.⁵¹ His remarks sound vaguely reminiscent of the charges made by Unanue's old enemy, José Pastor Larrinaga, who had accused both the master and his students of ignorance in anatomy and surgery. Heretofore, Unanue's motive has seemed clear—he had attempted to dissociate the profession (and hence the college) from the charlatanry that he observed among the surgeons of Lima. In the end, he and his colleagues may merely have substituted one variety of quackery for another.

Perhaps no one can ever prove that Unanue's major work, *Observations on the Climate of Lima*, served to undo much of the progress which he had made in freeing the profession from dogma and slavish dependence on authority. Still, that is exactly the idea suggested by the conduct of those who continued his work and by the remarks of two competent observers. Incomplete evidence suggests that Unanue's closest associates paid more attention to his conclusions about the causes of disease than to his method for arriving at those conclusions. In the midst of the terrible epidemic of 1818, Drs. Valdés, Dávalos, and Tafur sprang to the defense of Unanue's medical system and reaffirmed their belief that variations in the weather had brought on the disease (probably influenza).⁵² Only one Lima physician disagreed. Dr. José Gordillo thought that "miasma from

⁵⁰ Valdizán, *La Facultad de medicina*, III, 123-126; AGI, Lima 798 and 1028 contain papers concerning the review, but the Directorate's recommendations for changes in the statutes—as well as the statutes themselves—are missing.

⁵¹ Paz Soldán, "Valdés," 22-24 of appendix.

⁵² *Gaceta del Gobierno* (March 7, 10, 1818), 130-140; (September 26, 1818), 495, 496.

ships" in Callao harbor might have started the epidemic, for he had noticed that it spread from the west,⁵³ but otherwise the opinion was uniform. A few months later Dr. José Pezet confidently predicted that Peruvian physicians would soon offer European doctors some observations "that might perfect their medical systems."⁵⁴ He considered Unanue's book the first installment in the repayment of a long-standing debt to foreign philosophers.

Not many reputable European practitioners visited Lima and saw their future benefactors at work, but two doctors who did become acquainted with them hardly thought the gift worth taking. Dr. Joaquín Solano, a Spanish naval surgeon on duty in Lima, first observed the stubborn conformity of Peruvian physicians during the summer and fall of 1818, when the epidemic was ravaging the coastal towns. His main point of contention with them lay in their refusal to prescribe tartar emetic (whose use in treating the disease Solano felt to be almost universally accepted), because the peculiar climate of Lima—in their opinion—altered the nature of the malady and hence required another specific. He simply could not see how all of the leading doctors of Lima could reject a widely-approved remedy on such narrow grounds. Solano suspected that there was but one explanation. "The learned physicians of Lima . . .," he said, "built their knowledge on the foundations [offered] in a single dissertation, good or bad for its [own] purpose." It is inconceivable that Solano was thinking of any other work than the *Climate of Lima*, or that he meant to point to someone other than Unanue when he spoke of "that famous author" who "gave particular rules in Lima, different from those which everyone recognized in Europe, Asia, Africa, and the rest of America."⁵⁵

The second critic of Peruvian medicine, like Solano a foreigner, raised an objection because a "hackneyed caveat" hindered him in establishing a successful practice in Lima. Dr. Archibald Smith, a British physician, worked at that goal for ten years (1826-1836) before returning to London to publish a whimsical account of his experiences. Smith had never met Solano, it seems, but he arrived at a similar appraisal of the medical arts in Lima: "It is affirmed by native doctors, but not always acceded to by the vulgar, that there is something occult in the climate of Lima, which only a Limenian or Creole physician can sufficiently comprehend. Hence the prejudiced

⁵³ *Ibid* (March 14, 1818), 145-146.

⁵⁴ Quoted in Lastres, *Historia*, III, 106.

⁵⁵ *Gaceta del Gobierno* (April 8, 1818), 184-189.

objection, '*No conoce nuestro clima*,'—that is, he knows not our climate,—is sanctioned by high professional authority. . . .'⁵⁶ Unlike the Spaniard Solano, Smith never connected the tradition with Unanue, whose work he knew and borrowed and whom he praised highly. Apparently unaware that the subject of his praise had also produced many objects of his satire, Smith treated the habits of the doctors of Lima with subtle but devastating humor. Although all of those he listed smacked of hokum, two preoccupations seemed especially troublesome, and these bear the imprint of Unanue. One was the Peruvians' reluctance to accept the idea that "the laws of physiology, . . . like those of gravitation, are the same in Peru as in other parts of the world." The other was their predilection for poking around in the excrement of the patient and their talk of "the malignant, adust, crude, and corrosive, etc. state of humours . . .," that characterized the "Boerhaavian school."⁵⁷

Whether the Peruvian practice ought to be labelled "Boerhaavian" or "Limenian," the influence of Unanue shines through, and thus he bears some ultimate responsibility for encouraging the parochial attitude that arrested the progress of the profession. It is indeed curious that his influence should be thus, for he directed most of his labor toward promoting the cosmopolitan ideal and raising Peruvian society to a high degree of culture and respectability. If the questing and undogmatic spirit of Unanue's youth gave way to a greater assurance in his mature years, it did so only after he had learned to depend on reason, experience, observation, and wide reading, which he believed would lead to correct answers. He developed in his book some faulty theories either because he started with wrong assumptions or because he used the newer methods inexpertly. Had one of his students, or preferably several of them, matched him in comprehension or improved on his methods, they might well have advanced beyond the point that they reached under Unanue's guidance. But his colleagues were even less liberated from dependence on authority than he was, and when they had helped him to throw out ancient authorities, they simply installed him in the ancients' place. It is not clear if Unanue ever realized that with one hand he had torn down what his other hand had raised.

⁵⁶ Archibald Smith, *Peru As It Is* (2 vols., London, 1839), I, 47.

⁵⁷ *Ibid.*, 50, 55, 56. On Smith's use of Unanue's book, cf. Smith, *Peru*, II, 239, and Unanue, *Obras*, I, 55.