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The Clarinet as Described

by Lorents Nicolai Berg (1782)

ALBERT R. RICE

LORENTS NICOLAI BERG (1742/43–1787) published *Den første Prøve for Begyndere udi Instrumental-Kunsten* in 1782 in Kristiansand in southern Norway. Besides being one of the few eighteenth-century books on music printed in that country, his work is both interesting and original in its content concerning instruments. A translation of its title page (fig. 1) follows:

The first lessons for beginners in the art of instruments, or a short and clear explanation of the beginning notes, to facilitate the instruction on several musical instruments, especially for clavier, violin, viola, cello, zither, and several wind instruments. Edited and published by Lorents Nicolai Berg, royal appointed director in Kristiansand and its commercial district. Kristiansand, 1782. Printed by A. Swane; paid for by the publisher.¹

This one-hundred-page treatise is divided into three parts. The first part deals with the string instruments mentioned on the title page, with the greatest amount of space allotted to a discussion of the clavier, which could also be applied to the “organ, harpsichord, spinet, virginal, pandora, piano, and all such instruments” (*Orgeler, Clavi-Cymbler, Spenetter, Symphonier, Pandolong, Fortopiano og alle saadanne Instrumenter*). The second part discusses the transverse flute, oboe, clarinet, cornett, dulcian, horn, and trumpet, with the largest coverage given to the trumpet. The last part is devoted to the basic elements of music and closes with a brief listing and translation of Italian musical terms.

1. Grateful thanks are given to Mrs. Sonni Marschik for translating the Norwegian text in this article.

Den første Prøve
for Begyndere
udi
INSTRUMENTAL-KUNSTEN,
Eller
en kort og tydelig Underretning
om de første Noder at lære,
Et Lættelse ved Informationen paa adskillige
Musicalste Instrumenter,
I sær paa
Claveer, Violin, Alt-Violon, Bas-Violoncel, Citar og en Deel blæsende Instrumenter.
Samlet og udgivet
ved
LORENTS NICOLAJ BERG,
Kongl. Bestalter Instrumentist i Christianssand og dens Handels-Distrikt.

Christianssand, 1782. Trykt hos N. Swane paa Forlæggerens Bekostning.

FIGURE 1. Title page of Berg's *Den første Prøve*. (Courtesy of the University of Oslo.)

Very little is known of Berg's life, but some deductions can be made from the contents of his book. He was born in 1742 or 1743, and he may have attended the grammar school at Odense in Denmark. He may also have served as a municipal musician in Copenhagen for a time and evidently also was a military musician somewhere in the eastern part of Norway. He was probably the first to arrange public concerts in Kristiansand, where he was appointed municipal musician on August 25, 1775. He died there on March 22, 1787, at the age of forty-four.² Berg's book also gives some evidence of his personality.

2. Hans Magne Græsvold, "Lorents Nicolai Berg og hans lærebok 'Den første prøve for begyndere udi instrumental-kunsten,'" *Studia Musicologica Norvegica: Norsk årsskrift for musikkforskning* 2 (1976): 97-121. I wish to thank Professor Hampus Huldt-Nystrøm of the Universitet i Trondheim (Musikkvitenskapelig Institutt) for bringing this article to my attention.

For example, in paragraph 3 on the clarinet, he cautions the beginner not to take the mouthpiece too far into his mouth, "as it might otherwise shriek like a happy goose." In the foreword, Berg confesses to a poor spelling ability, but says that his publisher Swane could not help him, since Swane was also a poor speller. He also complains about having to write in the notes and clefs on the fingering charts and examples for each copy of the book, since Swane did not have the necessary type specimens to print them.³

In the organization of *Den første Prøve*, Berg was undoubtedly influenced by Johan Daniel Berlin's *Musicaliske Elementer*, published at Trondheim in 1744, the first Norwegian instruction book on music.⁴ Berg included chapters on each instrument discussed by Berlin and added an important chapter on the clarinet. By 1782, the clarinet was in use in numerous courts and orchestras throughout Europe, and several tutors for the instrument had already appeared in France and England.⁵ Berg's discussion of the clarinet provides information not found in any other source from the period. His most notable contributions are the recommendation of a "lower-lip" embouchure and the inclusion of a fingering chart for the three-key clarinet. The original text of this chapter follows, along with a translation.

3. Lorents Nicolai Berg, *Den første Prøve*, p. [6]; Charles Kjerulf, "En gammel gemytlig Musikskole," *Nordisk Musik-Tidende* 7 (1886): 164.

4. In his chapter on the dulcian (p. 59), Berg recommends the fingering tables in Berlin's *Musicaliske Elementer*. See Karl Dahlback, "Rokokkomusikk i trøndersk miljø Johan Daniel Berlin (1741–1807) (Et bidrag til Trondheims musikkhistorie 1750–1800)," *Norsk Musikkgranskning Årbok 1954–55* (Oslo: Tanum Forlag, 1956), p. 151.

5. See Thomas E. Warner, *An Annotated Bibliography of Woodwind Instruction Books, 1600–1830* (Detroit: Information Coordinators, 1967), nos. 42, 68, 1 and 146.

Om Clarinetten.

§ I

Der har været et Slags saadanne Rør-Instrumenter til med een Klap i forrige Tider, dem jeg engang paa den latinske Skole i Oddense kom over at see iblandt endeel gamle Instrumenter, som Levninger at ligge efter deres afdøde Formænd. Scharmeynen var og i de Tider liflig m.f. Dette Seculos Clarinetter opkom først med de 2de øverste Klapper; siden fandt man paa den 3die, nemlig den lange H Klap. Denne Klap gjorde Clarinetten meget fuldkommen i dens Ambitus. Endelig har man udfunden nok 2de Klapper paa den Fuldkomnere; Efter hvad Tone den er giort til, som B, C, D, dis &c., kaldes den. Clarinetter de ere høi-lydende Instrumenter; de bliver brugte iblandt andre Instrumenter, især ved den melitaire Feldt-Musiqv. Jeg her selv for nogle Aar siden, før jeg kom til denne forfuskede Musicant-Tieneste, oplært 2de Regiments Hoboistere paa Østlandet her i Norge paa disse og tilhørende blæsende Instrumenter; efter indgaaende Accord og Contract med deres Regiments Cheffer; Thi

On the Clarinet

§ I

At one time a type of reed instrument with one key existed. I saw them once in the grammar school in Odense lying among several old instruments like remains of their dead ancestors. The chalumeau, along with others, was also a lovely sounding instrument back then.⁶ The clarinets from this century first appeared with the two uppermost keys; later a third was developed, which is the long B key. This key made the clarinet very complete in its range. Finally two additional keys were added, creating a more perfect instrument. They are named according to the pitch they have been tuned to, such as B flat, C, D, and E flat, etc. Clarinets are high pitched instruments that are used among other instruments, especially in military music.⁷ Several years ago, before I entered this bungled-up musical service, I trained the second regiment's oboists in the east country here in Norway to play these and other wind instruments upon agreement and contract with the regiment's commanding officers. For in

6. The one-key chalumeau was later described by Joos Verschuere Reynvaan in *Muzijkaal Kunst-Woordenboek* (Amsterdam: Wouter Brave, 1795), pp. 118–19, plate 9; for an illustration, see Adam Carse, *Musical Wind Instruments* (London: Macmillan and Co., 1939), p. 149. A valuable discussion of the chalumeau and its literature is given by Heinz Becker in "Das Chalumeau im 18. Jahrhundert," *Speculum Musicae Artis: Festgabe für Heinrich Husmann zum 60. Geburtstag* (München: Wilhelm Fink, 1970), pp. 23–46.

7. Two-key clarinets in high F were still in use in Paris as late as 1761. See François Alexandre Pierre de Garsault, *Notionnaire, ou mémorial raisonné* (Paris: Guillaume Desprez, 1761), p. 647; and Albert R. Rice, "Garsault on the Clarinet," *Galpin Society Journal* 32 (1979): 99–103.

paa Østlandet findes mange Skjøn-
nere og Libhabere af god Musiqv. (*)

§2

Naar Clarinetten bliver vel tracteret og accompagneret, er det enfrisk og levende Musiqv, behagelig at høre paa et Stykke ifra, og allerhelst paa Vandet om Aftenen, hvorved Walt-hornene er Præses til at udføre Ska-berens skiulte Diensvar: (det gamle behagelige Echo, som boer i de store Bierger og Dale. Clarinetten er et Rør-Instrument, den har 8te huller, som Fingrene bedækker, og 5 dito som er de 5 Klapper underdanig; Disse bliver af Fingrene trykket og aabnet, naar Tonerne det udfordrer. Den lange, som kaldes H Klappen, er med sin Fiær saa indrettet, at den lukker og dækker det underliggende hull til, naar den med Lillefingeren paa den venstre Haand gribes eller trykkes.

§3

Hvorledes disse mange Klapper og Huller bliver grebne, læres af Tabel-
len; men ifald man kan faae mundt-
lig Undervüsning om Tonernes Ta-
gelse, kommer man lættre efter at
lære paa alle saadanne Instrumenter.

(*) At Concerten bestod tilforn, ester Sigende, i nogle gammeldags Marscher, Büser og Skaaler, som; Nu haver vl sviret &c., har man Exempel af §. 10. om Trompeten.

8. Apparently this confused state of music making existed for some time in parts of Norway. In his chapter on the trumpet (p. 68), Berg relates how displeased King Friderich IV was upon hearing a concert with a sloppy orchestra and an inebriated, off-pitch cantor.

9. Several years earlier, Johann Mattheson observed that the chalumeau should never be heard "at a serenade on the water" in *Das Neu-Eröffnete Orchestre* (Ham-
burg: B. Schillers Wittwe, 1713), p. 272.

the east country there are many who appreciate and admire good music.*8

§2

When the clarinet is played correctly and is well accompanied, it creates a fresh and lively sound which is pleas-
ant to listen to from a distance, pref-
erably on the water in the evening.⁹ Hunting horns are very suitable for executing the hidden call of the creator (the old pleasant echo which is found in the huge mountains and valleys). The clarinet is a reed instru-
ment; it has eight holes which the fingers cover, and an additional five covered by keys. These are closed and opened with the fingers as dic-
tated by the notes. The long key, which is called the B key, is arranged in such a way that it closes and covers the underlying opening when it is closed or depressed by the little finger of the left hand.

§3

All these keys and openings can be easily learned from the table. But if you can receive oral instructions in the playing of the notes, it becomes easier to learn to play such instru-
ments. The tables are indispensable.

* It is said that the earlier concerts consisted of old-fashioned marches, songs, and drinking songs like "Now we have been drinking," etc.; an example of this can be found in §10 on the trumpet.

Tabellerne er ellers umistelig, ifald en eller anden Tones Greb forglemmes, da kan man selv finde den igien paa Tabellen, til det Instrument den er oversadt til. Naar man vil faae Clarinetten til at Inde, maa man ikke stikke Mundstykket for langt ind i Munden, at den ikke skal skrige som en glad Gaas, men man lægger Røret paa den underste Læbe, og tvinger det saaledes med Binden, at det giver en angenem Lyd og Tone fra sig, hvortil Tungen, ved at støde Binden ud, skiller Tonerne efter Behag. (See on Flauten §. 3.)

§4

Man bruger G Clavis, som ellers kaldes Tydsk eller Violin-Nøgelen til Fortegnelse paa Systema, hvorefter Noderne kaldes i sin Orden. Clarinetens Ambitus gaaer fra e i 2den Octav paa Claveret til det trestrægede e, og den stemmer i den Tone, hvortil den er inddrejet, Exempel, Er det B, saa kaldes den b Clarinett o.s.v. Følgende Noder tiener til alle Slags Clarinetters Begyndelse.

§5

Hosfølgende Tall-Tabel kommer meget overeens med Flaute- og Hoboe-Grebene i Discant-Octaven, derimod i Secund og Bass-Octaven er den overeenstemmende med Grebene paa Dulcianen. Hvorledes den forklæres, kan Fingre-Figuren, som staaer anført ved §.4. om Dulcianen, give Oplysning om; thi naar en Discipel gjør sig hver Fingers Tegn og Tall bekiendt, tillige med de til hver

In case the fingering of one or more notes has been forgotten, it can be found again in the table that refers to that instrument. If you want the clarinet to sound good, you must not put the mouthpiece too far into your mouth, as it might otherwise shriek like a happy goose. Instead, the reed is placed on the lower lip, and in this manner you force it with the breath to produce a pleasant sound and tone, using the tongue to separate the notes at your discretion. (See on the flute, §3).

§4

The G clef, also called the German or violin clef, is used as the system's key signature, according to which the notes are arranged. The range of the clarinet extends from E in the second octave on the clavier to the third octave E, and it corresponds to the note to which it has been pitched. For instance, if it is B flat, the clarinet is called a B-flat clarinet, etc. The following notes serve as a beginning for all types of clarinets. [See fig. 2.]

§5

The above number-table corresponds quite well with the fingering of the flute and oboe in the discant octave. In the second and bass octave, on the other hand, it corresponds to the fingering on the dulcian.¹⁰ When a student familiarizes himself with the sign and number of each finger plus each finger's corresponding holes and keys on the clarinet, it becomes quite easy and understandable to find the fin-

10. Berg discusses and provides a chart for a four-key dulcian (pp. 56-60).



De første Noder og Tall-Tabellen til Clarinetten.

The chart shows the first notes and fingerings for the clarinet in four registers:

Register	Notes	Fingerings (Circles)	Finger Numbers (1-7)
Bass-Oklav.	e, f, g, a, b, h	○ ○ ○ ○ ○ ○	1 1 1 2 2 3
Secund-Oklav.	c, d, e, f, g, a, b, h	○ ○ ○ ○ ○ ○ ○ ○	1 1 1 2 2 2 3
Discant-Oklav.	c, d, e, f, g, a, b, h	○ ○ ○ ○ ○ ○ ○ ○	1 1 1 2 2 2 3
5te Oklav.	c, d, e	○ ○ ○	2 2 2

Additional rows in the original chart include:
 - A row with 'L' for the left hand.
 - A row with '4' for the fourth finger.
 - A row with '5' for the fifth finger.
 - A row with '6' for the sixth finger.
 - A row with '7' for the seventh finger.

FIGURE 2. Berg, *Den første Prøve*: "The first notes and number-table for the clarinet." (Courtesy of the University of Oslo.)

Finger tilhørende Huller og Klapper paa Clarinetten, bliver det meget æt og begribelig at finde Grebene efter denne nye Opfindelse. Dette er kuns at erindre, at venstre Haands Tommelfinger har at gribe det underliggende Hull og B Klappen som ofteste paa engang; hvor nu O staaer; bemærker det Hullet skal gribes, men staaer der en Stræg —, bemærker det Klappen tillige. Den øverste lille Klappe heeder A, og bemærkes med A i Tabellen, naar den første Finger skal trykke den op. L bemærker den lille Finger paa venstre Haand skal trykke Lang-eller H Klappen, som derved lukker sit Hull. Figuren viiser tydelig alt hvad som til dette og videre Forklaring om Tonerne Tagelser behøves.

§6

At Clarinett-Scalen og Tabellen ikke gaaer alle 12 Toner igiennem i hver Octav, er af følgende Aarsager: 1) At en Begynder ikke skal vildes med det heele Ambitus (See om Flauten §.4.) 2) Der er kuns faae som lægger sig til videre at blæse paa Clarinett af andre Toner, end af C og F Dur, og 3) at denne Tall-Tabel kan tiene til Begyndelsen paa alle Slags Clarinetter.

§7

Naar Noderne og Tonerne Tagelse er vel lært m.m., begynder de et læt og simpel Clarinett-Stykke af C Dur. (See om Flauten §.8 og 9.) Røret maa være vel giort til at give an, som om Hoboen §.3. blev sagt; dernæst er Øvelsen den beste Læremester, som

gering according to this new invention. It should simply be remembered that the left thumb must often cover the underlying hole and the B-flat key simultaneously. A written O indicates that the opening must be covered, but if there is a line —, it indicates that the key must be covered as well. The uppermost small key is A and is noted with an A in the table when it is to be depressed with the first finger. L indicates that the left little finger must press the long or B key, causing the opening to be closed. The table clearly shows all that is necessary for this and any further explanation concerning the playing of the notes.

§6

The clarinet scale and the table do not cover all twelve notes of each octave for the following reasons: 1) the beginner should not be confused with the whole range (see on the flute, §4); 2) only very few continue to play the clarinet in keys other than that of C and F major; and 3) this number-table can serve as a beginning for all types of clarinets.

§7

When the notes and the fingering have been learned well, you start with an easy and simple piece of music written for the clarinet in C major (see on the flute, §8 and 9). The reed must be well made to sound as it was described in the oboe section, §3;¹¹

11. These are not detailed instructions for reed making but only general remarks.

man plejer at sige.

§8

Omensdkjønt saadanne Instrumenter er nok saa vel giort af Kunst-Drejerne, maa man dog meget hielpe dem i Tonernes Reenhed med Vinden og Anfassen; thi ville man lade Tone-Lyden raade sig selv, ville denne Musiqv komme til at klinge, som naar 2de Katter dis harmonerer om en Muus. Af en Begynder kan man ikke vente nogen behagelige reene Toner, derfor er det best, de øver sig fra først, til de faaer Anfass, paa et ikke for godt Instrument.

§9

J hvor mange Klapper der Tid efter anden er opfunden paa Clarinetterne, saa er de dog meget ubeqvemme at komme fort i alle brugelige Toner paa. Jeg holder for, at en speculativ Kunst-Drejer, som ville tæuke sig lidt om, naar han forstod noget grundig i Instrumental-Kunsten, og tillige var en Musicus, kunde opfinde en anden Slags Clarinetter til mageligere Brug for Fingrene i alle brugelige Toner, og uden saa mange Klappers Besætning.

Berg's instructions are written in a careful, concise manner that must have been quite helpful to a beginner on this instrument. Considered in a historical perspective, they are more detailed than instructions found in earlier treatises by Majer (1732, 1741) and Eisel (1738, 1762),¹² but not as extensive as those in the instrumentation

after that, practice is the best teacher, as the saying goes.

§8

However well such instruments might have been made by the artisans, the clarity of tones depends to a large extent on the breath and embouchure. If you were to let the sound of the tone take its own course, the music would sound like two cats fighting over a mouse. You cannot expect pleasant, clear tones from a beginner; that is why it is best that they practice first on an inexpensive instrument.

§9

Regardless of how many keys have been invented on the clarinet from time to time, it is really rather uncomfortable to employ all the useable tones. I maintain that an artisan who would think about it, who has a solid musical background, and is a musician as well, should be able to create another type of clarinet that would be easier to finger in all useable tones and without so many keys.

12. Joseph Friedrich Bernhard Caspar Majer, *Museum Musicum Theoretico Practicum* (Schwäb. Hall: Georg Michael Majer, 1732; facsimile ed., ed. Heinz Becker, Kassel: Bärenreiter, 1954), p. 39; Majer, *Neu-eröffneter theoretisch und praktischer*

manuals of Roeser (1764) and Francoeur (1772).¹³ This chapter is further evidence of the popularity and use of the clarinet beyond the boundaries of Germany and France during the eighteenth century.

It is noteworthy that Berg mentions the chalumeau (*Scharmeyen*) as an earlier type of clarinet at the beginning of his chapter. In the eighteenth century, this instrument was constructed in a consort of four members like the recorder, and it resembled the recorder, except for its two keys and use of a beak mouthpiece with a single reed. The chalumeau was used in operas, oratorios, cantatas, and instrumental works from about 1704 to 1767, mainly in Germany. The books by Walther (1732) and Majer are the only sources prior to Berg's that describe this instrument.¹⁴

Berg's stated preference for the "lower-lip" embouchure in paragraph 3 is the earliest reference to this method of performance,¹⁵ although there is some evidence that it was used on the chalumeau.¹⁶

Musik Saal (Nürnberg: Johann Jacob Gremer, 1741), p. 52. Johann Philipp Eisel, *Musicus Autodidaktos oder der sich selbst informirende Musicus* (Erfurt; Johann Michael Funcken, 1738; reprint ed., Leipzig: Zentralantiquariat der DDR, 1976), pp. 76–78; Eisel, *Der sich selbst informirende Musicus* (Augsburg: Johann Jacob Lotter, 1762), pp. 54–57.

13. Valentin Roeser, *Essai d'instruction a l'usage de ceux qui composent pour la clarinette et le cor* (Paris: Mercier, 1764; reprint ed., Geneva: Minkoff Reprint, 1972), pp. 2–12. For an English translation of the section on the clarinet see Albert R. Rice, "Valentin Roeser's Essay on the Clarinet (1764): Background and Commentary" (M.A. thesis, Claremont Graduate School, 1977), pp. 93–115. [Louis-Joseph] Francoeur, *Diapason général de tous les instruments à vent* (Paris: Des Lauriers, 1772; reprint ed., Geneva: Minkoff Reprint, 1972), pp. 18–35.

14. Johann Gottfried Walther, *Musikalisches Lexicon* (Leipzig: Wolfgang Deer, 1732; facsimile ed., ed. Richard Schaal, Kassel: Bärenreiter, 1953), pp. 153–54; Majer, *Museum Musicum*, p. 32. The lexicons of Zedler (1733) and J.C. and J. D. Stössel (1737, 1749) repeat Walther's information verbatim. Eisel's reference to the "Teutsche Schallmey" as an antiquated instrument (p. 100) probably refers to a small-bore shawm rather than a chalumeau. See Becker, p. 23, and Sibyl Marcuse, *Musical Instruments: A Comprehensive Dictionary* (New York: Doubleday, 1964), p. 144.

15. Cf. Håkon Stødle, "Klarinetten i Norsk Musikk frem til 1830 spesielt med henblikk på bruken av den hos Hans Hagerup Falbe og Waldemar Thrane" (M.A. thesis, University of Oslo, 1970), p. 10. Pamela Weston, in *More Clarinet Virtuosi of the Past* (London: The Author, 1977), pp. 219–20, mentions that Francis C. Schaffer, who lived in Boston from the 1790s through 1820, claimed to have invented "spicatto" for the clarinet, presumably with the use of this embouchure.

16. Cary Karp, "Chalumeaux," *Galpin Society Journal* 31 (May 1978): 145–46.

This embouchure technique was thought to have been introduced by German clarinetists and was mentioned some twenty years after Berg's book by Johann Backofen in his *Anweisung zur Klarinette* (ca. 1802).¹⁷ The first documented statement of preference for this technique in Germany is found in an anonymous article, "Ueber die Klarinette," in the issue of the *Allgemeine Musikalische Zeitung* for March 16, 1808:¹⁸

In order for the clarinet to become a connoisseur's instrument . . . it is first necessary that one ceases to play with the reed on top as the French still do in their methods. Admittedly one may then lose the extreme high register, but on the other hand one gains—may I say—the entire instrument. Even the playing position is more difficult according to the former method and gives to the head a disagreeable angle of inclination. But how is it possible to form a smooth and tender sound if one touches the fibrous reed with his teeth? In this way a harsh sound must unavoidably issue forth.¹⁹

A discussion of the two embouchure techniques is also found in Joseph Fröhlich's *Vollständige theoretisch-praktische Musik-schule* of 1810–1811.²⁰ Fröhlich praised the "upper-lip" embouchure for its ease of shading the tone, but concluded that the new "lower-lip" embouchure allowed for better articulation. Thus, the use of the "lower-lip" embouchure can be attributed to a preference for both the tone and the articulation possible with this method. The introduction of the thumb rest by Iwan Müller in 1812 also seems to have influenced clarinet players to adopt this technique.²¹

In paragraph 9, Berg makes what must be the earliest suggestion to reform the key mechanism of the clarinet. His concern that the key mechanism had become overly complicated was voiced twelve years earlier by F. D. Castillon (fls) in the *Encyclopédie* (1776):

17. Johann Georg Heinrich Backofen, *Anweisung zur Klarinette nebst einer kurzen Abhandlung über das Basset-Horn* (Leipzig: Breitkopf & Härtel, ca. 1802), p. 4; see Eugene Rousseau, "Clarinet Instructional Materials from 1732 to ca. 1825" (Ph.D. diss., State University of Iowa, 1962), p. 127.

18. Col. 385. See Heinz Becker, "Zur Geschichte der Klarinette," *Die Musikforschung* 8 (1955): 285.

19. Translation by Don Halloran.

20. Joseph Fröhlich, *Vollständige theoretisch-praktische Musik-schule* (Bonn: Simrock, 1810–1811). See Rousseau, p. 186.

21. Becker, "Zur Geschichte der Klarinette," p. 285.

At the time of writing there is in Berlin a musician who plays a clarinet with six keys, on which he obtains all the tonalities. It has already been shown that four keys cause difficulties. How much worse it must be with six!²²

This conservative attitude towards the addition of keys is reflected in Berg's own fingering chart for the three-key clarinet, although he specifically mentions the five-key clarinet in his book. His purpose in this, the only known fingering chart for the clarinet with three keys,²³ was evidently to present the student with a minimum amount of difficulty on an inexpensive instrument. Nevertheless, because of its primitive mechanism and poor placement of tone holes, the three-key clarinet was difficult to play in tune in keys other than C and F major. As a result, various attempts were made to improve the instrument by adding keys, leading to Müller's thirteen-key clarinet of 1812.

Berg's chapter on the clarinet describes the instrument from his own special viewpoint at an important stage in its technical and musical history. His comments on the "lower-lip" embouchure and the improvement of the key system foretold later developments that were to make the clarinet one of the most popular woodwind instruments of the nineteenth century.

Carmel Valley, California

22. F. D. Castillon, "Clarinete," *Encyclopédie . . . Supplement* (1776), vol. 19, book 2, pp. 450-51. See Eric Halfpenny, "Castillon on the Clarinet," *Music and Letters* 35 (1954): 335.

23. Cf. Rousseau, p. 6.