INDEX.

Note. The figures refer to the numbered sections excepting when the word Page is prefixed.

Abuse of the harmonics. 787. of the tongue in articulation. 741-2.

Accelerando. 797*. Accent. 803-4. and emphasis compared. 811.

Accents of compound times. 807. of simple common time. 805. of simple triple time. 806. often misunderstood. 809.

of triplets. 808.

Acoustics. 1.

Agricola, Martin. 597. on the Swiss flute. 400. fgr. 39 and 40.

Air-column, see Column of air. vibrations of, in tubes. 66-171. Air-reed, the. 84-113. Chap. XVIII.

and the column of air, reciprocal action of, 112.

effect of change in its direction. 109-111.

effects of variation in its force and direction. 106-111.

experiment showing the effect of interference in its action. 107.

Airy on sound-production in the flute. 99.

Alts, music by. Page 518.

Andersen, music by. Page 519.

Antinote. 42.

Appendix (A) to Part III. Original compositions for the flute. Page 518.

Appendix (B) to Part III. Arrangements for the flute. Page 528.

Arbeau, Thoinot, his "Orchesographie." 401.

his description of the sile. 401.

Aristotle. 178.

Aristoxenus on flutes, etc. 306.

on musical intervals. 278, 280.

Arm, the left, its position. 718.

the right, its position. 719.

Arrangements for the flute. Appendix (B) to Part III. Page 528.

Articulation. 817-824.

Articulation, use and abuse of the tongue in, 737-744.

Arise. 453.

notice of, 860.

Atys. 861.

Authorizes for pressing the thumb to the side of the flute. 715.

for turning the mouth-hole inwards. 715.

Authors quoted, list of. Page xxix.


Sebastian. 281. Page 582.

his flute-music. Page 519.


Barret, Mons. 271.

Barrett, Mr. W. L., his modification of the "1867 flute." 685.

Bartholinus, De tibiis veterum. 304-5.

Bass flutes." 441, 443-4, 450, 513-516, 687.

Baye. 560.

music by. 872.

notice of, 871.

Beats. 795.

De Morgan on. 197.

Mr Ellis's treatise on. 198.

Sauveur the first to investigate. 195.

the only satisfactory tests of intonation. 198.

Beds of the keys. 383-7.

Beethoven and Kuhlau. 886.

arrangements from. Pages 528-9.

his flute-music. Page 519.

Behr, his flute-music. Page 520.

Belcke, music by. 914.

notice of, 915.

Benda, Karl. Page 568.

Benedit. 925.

anecdote of, 935.

Berbiguier. 715, 741, 902.

an advocate for a powerful tone. 553.

music by. 879.
Berghuis, notice of, 878.
Bergon, his Sonata for flute and piano. Page 520.
Bentall, 149, 150, 242.
— his experiment with a string. 52.
— on composite sounds. 185, 188.
— on vibrations of columns of air.
116, 118-120, 122-3, 130-4.
Beuker, J. 441.
Bideau, Page 581.
Biglioni, a flute by, 433-3.
Biot, his remarks on equal temperament.
257.
— on the tube of a wind-instrument. 242.
Birnbaum, 896.
Bishop, 310.
— his songs with flute obligato. Page 520.
Blackley, Mr. D. J., his account of
Pratten’s flute. 672.
— his accurate tuning. 290.
Blaser, his objections to equal tempera-
tment. 289.
Blavet, 413, 418.
— music by. 541.
— notice of. 840.
Bocha, 565, 599.
— body, position of the. 710, 711.
Boehm, 250, 343, 378, 390, 391, 396,
467, 587, 591, 579-631, 633, 661,
667, 666-7, 844, 687.
— Gordon and, 599-631.
— his adoption of the cylindrical body.
341.
— his arrangement of the finger-
holes discarded by Rudall and
Rose. 668, 674.
— his defective mechanism. 594.
— his defective tuning. 349, 355
594, 634.
— his early career. 579.
— his error regarding the bore.
358.
— his flute described by Schaabnüt.
596-7.
— his flute mentioned in the
“Harmonicon.” 595.
— his new head-joint. 341.
— his “patent flute.” 528-590, fig.
55.
— his plan of working.
600-603.
— later flute by. fig. 56, 591-8.
— letters by. 621, 637, 677, Page 619.
— music by. 912.
— notice of. 911.
— “Boehm-flute,” fingering of the.
587-9, see also Gordon.

Boile, F., a flute by. 444-459.
Boile or Boyce, the inventor of metal
plugs for keys. 354.
Bonanni, Filippo, 49, 422.
Bore, of the flute, dimensions of the.
347.
— his various forms. 338-347.
— the cylindrical, 338, 398-404.
— the cylindrical, with parabolic
beats. 340, 655-6.
— the improved conical bore. 666-7.
— shakers of his flute of 1867. 790.
Carter, Mr. H. W., his songs with
flute obligato. Page 520.
Castrucci, Page 544.
Catalani, Madame. Page 587.
Cau, Salomon de, 162.
— on various wind-instruments. 402.
Cavalié-Coll, 348.
— on sound-production in the flute.
93.
— in the flute-tube caused by
blowing. 249.
Chadlin. 151, 194.
— an advocate for equal tempera-
tment. 281.
— his remarks on composite sounds. 189.
— his remarks on pitch. 20.
— the Pythagorean scale. 52.
— on sound-production in the flute.
90.
— on the influence of partials. 217.
— on the tube of a wind-instrument.
242.
— on torsional vibrations. 34.
Chopin, arrangements from Pages 528-9.
Christian, 840.
Choquet, 441, 450, 499.
Chronological list of books and papers
quoted. Page xix.
Clang-tint, see Timbre.
Clarianet, the. 85, 168, 252-3.
Clarke, Hamilton, his flute-music.
Page 520.
Clementi and Co., “flute d’amour” by.
328.
Cromwell, see pianoforte.
Crook, miss, 528.
— material and construction of.
379-380.
— position of. 331-2.
— use of. 328-332.
— Correzz. 579.
— Cremona’s music. Page 538.
— Cremona’s organ. 64.
Crewe, Wm., his attempt to remodel the
flute. 588.
— his metal flutes. 320.
— the first to apply the principle of
the piston to brass instruments.
146.
“Closed” system of keys. 304.
Clutch, the. 634-5, 638, 653-6, 681.
— his improved flute. Fig. 59, 681.
Coché, Victor, 390, 399, 399, 771, 775.
— his madera key. 335, 612.
— his “Examen critique.” 609-625.
— his notice of. 924.
— his notes on the claims of Gordon
and Boehm. 615-625.
Coché and Boehm, their alterations in
the new flute. 632-4, 655-6.
Coraux, wood. 313, 315.
— Column of air, influence of the
diameter of the. 154-6.
— its extension beyond the tube.
133-4, 137.
Columns of air, preliminary remarks
on. 67-71.
— on overtones. 132-9.
— vibrations of, 66-71.
— Speck, the minter of.
133.
— of the Pythagorean scale.
52.
— with the ratio 801. 81.
— Composite sounds, Bermoni on, 186, 188.
— Chadlin on. 189.
— La Grange on, 187.
— Composite vibrations rendered visible
by König. 191.
— by Melde. 190.
— Cork or stopper, the. 328.
— material and construction of.
379-380.
— position of. 331-2.
— use of. 328-332.
— Cremona’s music. Page 538.
— Cremona’s organ. 64.
— Crescenzi-and-ring-key, Pottgiesser’s.
544.
— Crescenzi-keys, Gordon’s. 569-570.
— Cross-Fingering, see Fingering.
“Crutch,” Boehm’s. 369, fig. 30.
— Cuzzoni. Page 544.
— d and d’ holes and keys, the super-
numerary. 636-7, 653, 654, 681-8, 797-9, 795.
— D’Alemberri, his investigations.
51.
Duscher, 560.
Delezenne on the Comma 80 : 81, 258.
— on sound-vibration. 14.
Deluse, bass flute by, 450.
— instruction book by, 560.
— notice of, 845.
Demoseman, 891, 892.
Demeurs, notice of, 912.
De Morgan, Campbell, on flute-playing.
— 691.
— Prof, on beats. 197.
Denner, Johann Cz., 339.
— Dueners, notice of, the 833.
Des Cartes, 59, 354.
— on composite sounds. 178.
— on harmonics of strings. 51.
— on the sounds of lute-strings. 17.
Descoteaux, 420.
Devienne, Méthode by, 480, 715, 741.
— music by, 829.
— notice of, 854.
Diagrams, list of, Page xvii.
Diderot. 443, 449.
Donkin, on longitudinal vibrations. 32.
— on music and noise. 12.
Duppler, Franz, his flute-music.
— 560.
Dorsiaux. 560.
Dorus, Mons., 317, 441.
— his 8 key. 635, fig. 58.
— notice of, 920.
Dorh, music by, 847.
— notice of, 846.
Double-tonguing. 818-822, 824.
— combinations of, with slurring.
824.
— method of practising. 821-4.
— with dor, to-temps, too-coco, etc.
820.
— with too-de. 819.
Dressler. 715.
— music by, 881.
— notice of, 880.
Drouet. 317, 318, 715, 741, 818, 890, 894.
— a flute by, 531.
— his double-tonguing. 818, 900, 951.
— music by, 901.
— notice of, 900.
— on the use of the harmonics. 192.
Dulon, music by, 869.
Dussieux, his flute music. Page 528.
Ear, fibres of the, 61.
Ebonie. 312-1, 329.
Finger-holes, graduated, Clinton's, 676.
Finger-holes, graduated, Clinton's, 676.
— "large," 345, 680.
— "medium," 686.
— the positions of the, 348-356.
— Schaffthall on, 349.
— re-arrangement of the, 520.
— rules for adapting their positions to alteration of pitch. 352-3.
— table of their true distances. 351.
— their true positions. 350-6.
Fingering, 260, 278, Chap. XIII, 579.
and machinay. Chap. xii, 8368.
— cross, 373-7.
— general remarks on, 781-2.
— Gordon's, advocated. 682.
— Hotterterre's, 417-419.
— of the eight-keyed flute, 554-
— 558, 784-9.
— of the flute of 1867, 789.
— of the flute of Gordon, see Gordon.
— old, efforts to combine it with the new system of holes. 652, 657, 659, 671, 679, 678.
— in the Encyclopédie, 449.
— Fingerings for the pseudo old-finger-
— ing flutes. 296.
— Fingers, action of the, 720.
— constant employment of the, 378.
— position of the, 718, 719.
Flageolet. 88.
— Flooten. 398, 408.
— Florio, P. G. 454, 477.
— music by, 853.
— notice of, 852.
— and Tacet, their employment of the "extra keys." 477.
— Florio, G. 853.
— Flûte à bec. 88.
— Flûte à cinq pieds. 441.
— Flute, by Byclignon. 430-3.
—and by B. Boile. 524-5.
—and by Koch, extending to 6. 559.
—and by Montzani. 500-2.
—and by Potter. 578.
—and by T. Lot. 446-8.
— Capeller's new, 521-4.
— Cartes of 1805. 661-4.
—and of 1807. 684.
— composers, professors and makers in 1826. 748.
— Flûte d'amour. 310, 323.
— dame. 88.
— in 917.
— Flute, eight-keyed, by Drouet. 531.
— Flute, eight-keyed, figure and expla-
— nation of the, 555.
— fingering of the, 554-8.
— fingering, see Fingering.
— intonation. 249, 348-356, 438.
— Petersen's, 541.
— Potgiesser's first, 489-498.
—and second, 542-6.
— preservation of a, 704-6.
— Rockstro's model, see Rockstro.
— the cylinder, 653-6, figs. 61, 3, 4, 5, 6, 7.
—and the new improvements in, 638-9.
—and the primitive, 406-410.
—and the selection of, 702-3.
—and the transverse, at the Paris Opera.
 —420.
—and the transverse, Hawkins on, 420.
—and the transverse, not known to the ancients. 201-6.
—and Ward's patent, 571, 640-2.
—and Weber's account of a, 521-2.
—and the flute, a century and a half of the early life of, Chap. XIII. §307.
— description of, 87.
—and early writers on, 397-405.
—and elegant appearance of, 700.
—and extension of its compass to 6. 559.
—and facility for articulation on, 697.
—and history of, Chapters x, XIII, XIV, XV.
—and in concert with other instru-
— ments. 695.
—and in 1826-7. 548-533.
—and its capabilities for execution. 696.
—and its capabilities for expression. 694.
—and its position. 717.
—and latest development of, Chap.
— XV, §561.
—and latest improvement in, 653, 688, 796.
—and of 1805-6. 2 of 1806. 7 See Carter, Mr. R., of Quaun. 434-8.
—and portability of, 699.
—and retrospective of improvements in, 561-5.
—and superiority of the tone of, 693.
—and supporting, 368.
—and the covered holes of, 655-6.
—and theory of sound-production in, 89.
INDEX.

Flute, the, tone of, 735, 761, 769, 775.
- - tuning of, see tuning.

Flute intonation, 762.

Flutes, bass, 441, 443, 450, 687.
- - Clinton's, 657, 676, 678.
- - different sizes of, 310.
- - for one-handed persons, 538.-9.
- - glass, 499.
- - length of, see 457-458.
- - materials used for the construction of, 311-312.
- - metal, by Miller, 517.
- - of the Ancients, the, Chap. x., §301.
- - of various materials, management of, 775-77.
- - Siccama's patent, 456-452.
- - the large-holed, of Nicholson, 536-541.
- - the, of Tromlitz, 471-4.
- - walking-stick, 536.

Flute-player, elegant position of the, 698.

Flute-players, lady, see Lady-flute-players.

- - Pynson's denunciation of, 417.
- - statues of, 305.

Flute-playing, a healthy occupation, 691.
- - in England in 1826, 548.
- - in 1776, 494.
- - the chief points of excellence in, 701.

Foot, the musical, 812.

Forde, his arrangements of songs, Page 530.

Forzando, 829.

Fourier's theorem, 207.

Frederick II. of Prussia, Page 545, 9.

Friesch, music by, 922.
- - notice of, 921.

Frolich, 560.

Fuerstenau, 318, 476, 721, 833, 911.
- - music by, 895.
- - notice of, 896.

G hole, the open, of Pottgisser, 493.
- - of Tromlitz, 484.
- - key, the closed, 451.
- - Boehm on, 636-7.
- - of Dorus, 635.
- - used by Coche, 633.
- - the duplicate, 673.
- - the open, adapted by Boehm, 378, 591-2, 637.
- - the open, of Nolan, 509-511.
- - used by Mr. Carre, 636.

G# keys, comparison of the open and the insidioen, 636-7.

Gabriel, music by, 897.
- - notice of, 896.

Galileo, 18, 58.
- - his error concerning Tacet, 840.
- - his opinion of Michel, 873.
- - his opinion of Tauberti, 841.
- - his remarks on Ribbeck, 466.
- - Gerock and Wolf, 592-4, 597, 598, 607.
- - Godfrey, 301, 639, 653, 656, 929.
- - Gordon, Captain, 891, 911, 923.
- - account of, 596.
- - and Boehm, 595-631.
- - description of a flute by, 596-571.
- - description of a flute said to have been made for him, 576-8.
- - examples to illustrate the extra fingerings of his system, 703.
- - fingerings of his flute, 572-5, 91-5.
- - his early efforts to improve the flute, 566-8.
- - shaking of the flute of, 795.

Grace, 827.

Gras, Madame Dorus, 317.

Grave harmonics, 192.

Gray, notes, the author's hypothesis. 16.

Grenadille, 315.

Grenser, Heinrich, 524, 842, 906.

Grenser, Karl, his criticism of Pottgisser's flute, 546.

Grosch or gotha, 86.

Guilou, at the Conservatoire, 890.
- - music by, 895.
- - of columns of air, 132.
- - Gunn, his "Art of playing the German Flute," 479.
- - notice of, 867.

Halberstadt, his flute music, Page 522.

Hanel and Buoncini, Page 544.
- - his flute-music, Page 522.
- - his Oboe-concerto, Page 528.

Hankins, G. T., note to §691.

Harmonics of a string, table of, 46.
- - of columns of air in open cylindrical tubes, 133-7.
- - of columns of air in stopped cylindrical tubes, 138-9.
- - of strings, 44-54.
- - of various sonorous bodies, 55.
- - table of the higher, 233.

Harmonst, his Concerto, Page 523.

Hauss, Page 549.

Hautboy, the, 81, 233.

Hawkins, Sir J., 421, Page 538.
- - his account of an engraving of a transverse pipe, 305.
- - on flute-playing, 420, 464.
- - on the "pitch-fork," 35.
- - his flute-music. Page 523.
- - his Sonatas arranged, Page 528.
- - his Trios arranged, Page 539.

Head, position of the, 710-711.

Head-joint, the metal-lined, 318.

- - the "parabolic," 453.
- - with the excavation, 467, 613, 688.

Helmholz, 234, 235, 236.

- - his contradiction of Savart, 15.
- - on quality of tone, 265, 207-8.
- - on simple and compound sound, 172.
- - on sound-production in the flute, 264-5.
- - on the influence of partials, 220-5.
- - on the tube of a wind-instrument, 242.

Herschel on sound-production in the flute, Page 533.

- - on sound-vibration, 13.
- - on the tube of a wind-instrument, 242.

Hugo, 524.

Huntington's note, 18.

Huyghens, music by, 524.

Hymen, 84, 86.

Hire, Philippe de la, his investigations, 51.

Hoffmann, Gerhard, 439.


Holpkins, William, his improvements in Savart's apparatus, 126, 218.

Hotteterre et Romain, 339, 413, 416, 420-1, 440, 451, 722, 739, 818, 832-3, 906,
- - his conoidial flute, 339, 416.
- - fingering, 417-419.
- - his treatise, 416.
- - music by, 832.
- - notice of, 831.
- - on position, 722.

Hotteterres, the, 416, 831.

Hugon, 745.


- - illustrations, list of, Page xvii.

- - Improvements, retrospective of, 561.

Inspiration, rules for, 815.

Institute of France, report of, 612-614.

Instruction-books, list of, 460.

Intervals, analysis of, 254-5.

Inversion of, 254-5.

- - of the equally tempered and the theoretical scales compared, 274-5.

- - synthesis of, 254-5.

- - table of ratios of the theoretical, 255.

- - of the theoretical scale, 255.

- - of the theoretical scale, 255.

- - total of the flute intonation, 255.

- - of the musical, 326.

- - of the "long," 499.

- - for the, page of, 551, 526.

- - for the, Capellier's, 551, 526.

- - for &, 473.

- - for a, 365-6, 632, 634, 786-7, 792.

- - for the "long," 473.

- - for the "short," 451-3.

- - for the open, See &.

- - Nolan's ring, 909-11.

- - Pottgisser's ring-and-crescent, 544.


- - working between knobs, 381.

- - keys and their symbol, 386-2.

- - application of, 412.

- - beds for the pads of, 385-7.

- - cleaning the, 707.

- - closed, 382.

- - cups of, 385-7, 824, 30 and 31.

- - flaps of, 382.

- - for & and &, 433, 454.

- - leathers of, 383.

- - levers and connections of, 395.
INDEX.

Lambert, on the tube of the trumpet. 242.
Lavois, Mos., his work. 415, 470.
Le Fevre, Legato playing. 779.
Letter from Berton to Coche. 611.
Bach on the 88 key. 637.
Boehm on Coche. 621-3.
Boehm to L. Lot. 677.
Gordon to Boehm. 631.
Gordon to Mercier. 624.
Mdme. Gordon to V. Coche.
628-629.
Tromlitz on his flutes. 471.
C. M. von Weber on Capeller's flute. 521.
Letters from Boehm on his flutes.
Note to 911.
Frederick II. to his sister.
Pages 546-7.
Levers of keys. 395.
Lichtenhahn's dictionary. 560.
Liebeskind, G. G., Page 547.
notice of, 845.
J. H., 503, 645.
Lindner. Page 547.
Lindsay. 715.
Lip, placing the flute to the. 723-5.
Lips, management of. 726-734.
Littleton, Mr. Alfred. 397.
Littell's Albums. Pages 528-9.
Loeillet. 420.
music by. 835.
notice of, 824.
Logarithms, employment of, in musical calculations. 252.
of ratio. 253, 257, 259.
of the theoretical, Pythagorean, meantone and equal temperament scales. 276.
of the various diatonic semitones. 276.
Loop. 42.
his flute by. 446-8.
Lower-attendant sounds. 192.
partly obliterated by ventholes. 193.
their influence on quality. 328.
Lucinianus, (Nachtigall). 397.
his perversions of Virdung. 399.
fig. 58.
Masson, his flute-music. 539.
MacGregor, his "Bass flute." 513-16.
Machault, Guillaume de, the flute mentioned by. 397.
Machinery of the flute. 379.
L. 834.
M. 840.
Marsh, Dr. Nardossus, his essay. 1.
Masonic, and sympathetic vibrations. 50.
quote from, Page 128.
Materials used for the construction of flutes. 611-12.
Box-wood. 312.
Cocus-wood, South American. 315.
Cuban. 315.
Jamaican. 315.
Ebonite. 315.
Ebony. 314.
Glass, etc. 319.
Ivory. 317.
Mezali. 320.
Various woods. 316.
Mazelin, Muelle. 923.
Meastone, see temperament.
Mechanism, cleaning the. 707.
repairing the. 708.
Mechewon-Stretlins, Grand Duke of.
of. Page 568.
Meld, his device to show composite vibrations. 190.
his experiment with a string. 34-4.
Mendelssohn. Pages 598-9, 626.
Mersenne. 154, 312, 316, 342, 406-8,
414, 700.
his account of a German flute. 404, fig. 42.
his cylindrical flute. 338, 404.
on composite sounds. 179, 180.
on equal temperament. 280.
on the combinations of organs.
271.
on the harmonics of strings. 51.
on sympathetic vibrations. 59.
Metal-flutes, their management. 777.
Metronome, use of. 802.
Michel, Francois Louis, 560, 873.
Michel, George, notice of. 873.
Miller, George, his metal-flutes. 330.
L. 517.
Minasi, his flute-quartet. Page 524.
Mollique, his flute-music. 54.
Monochord, the. 250, 456.
Montaussof, his "huitvole explosif.
304.
a flute by. 500-502.
and till, their flutes. 526.
his patents of 1813. 525.
his music. 866.
notice of. 865.
Monzani, W., 865.
Moré, 925.
Motteux. 834.
Mouth-hole, the, fig. 61.. 333-7.
authorities for turning it inwards. 712.
Mouth-piece, Townley's. 507.
Wheatstone's. 534.
Mozart, his flute-music. Page 524.
his Sonatas arranged. Page 529.
his Symphonies arranged. Page 529.
his Trios arranged. Page 529.
Mueker, A. E., 560.
Mueller, Johannes, his suggestion as
to grave notes. 15.
on the influence of partials. 219.
on the tube of a wind-instrument. 342.
Music and Noise, comparison of. 10.
Donkin's observing on.
Music, original, for the flute. 832,
835, 839, 841, 843, 847, 849, 851,
853, 855, 857, 859, 862, 844, 869,
872, 875, 879, 881, 883, 885, 887,
889, 893, 895, 897, 899, 901, 903,
905, 908, 910, 912, 914, 916, 918,
920, 924, 926, 928, 931, 934, 935.
Appendix (A) to Part III. Page 518.
the study of. 689.
Musical instruments, range of. 25.
Nachtigall, see Lucinius.
Notes. 86.
Negative reflection. 121.
Neuff. Pages 547, 567.
Nicholson, C., 346, 427, 560, 560,
560, 715, 810, 829, 825, 930.
his flutes. 356-560.
music by. 910.
notice of. 909.
Node. 42.
Nodos, not points of absolute rest. 125.
Varying positions of. 157-164.
Non au, the Rev. F., 563.
his open A key. 509-511.
his patent. 568.
Nonon. 559, 890.
Note-holes. 144-8.
duplicate. 372.
Nett sensibile. 705-8, 704-1.
Oberlender, his "flute d'amour,"
Oberthure. 174.
Octaves, how to play. 780.
Ohm, Dr. G. S., on quality of tone. 203.
Old fingering, see Fingering.
INDEX.

"Old-finger-flutes," fingerings suitable for, 786.
"Open" system of keys, 394.
— its progress in England, 645-5.
Organ-pipes, 88.
Overtones, or Oscillations, 174.
Pada of keys, 385-7, 516.
Palissandre, 316.
Pandean-pipes, 85.
Paper-ciders, 60.
Parado, 919.
Paradis des Italiens et des Francais, 420, 838.
Partials, 174-191.
— Chladni's law of, 177.
— Des Cartes on, 178.
— experiment to prove the existence of, 176.
— known to aristotle, 178.
— Mesersenne's remarks on, 179.
— Perrault on, 174, 181-5.
— redundancy of, 234.
— their influence known from early times, 208.
— their influence on quality of tone, 208-238.
— their influence on quality of tone not discovered by Helmholz, 234.
— the term first applied by Perrault.

Pascal, his Sonata for flute and piano. Page 325.

Perforated keys, uses of, 704.
Perforations, lateral, in musical tubes, 143-153. See Finger-holes.
Period. 872.
Perrault, 560.
— his "Etat du Bruit," 12.
— his use of the term partials, 174.
— on partials, 181-5, 212.
— on the tube of the trumpet. 242.
Petersen, 454, 455.
— his flute, 541.
— music by, 564.
— notice of, 863.
Phase, difference of, 221.
Philbert, or Philibert, 472, 470.
— notice of, 830.
Phrasing, 812, 813.
Piccolo, the, 310.
Pigot and Noble, 60.
Pillsar, early, 381, fig. 27.
— for the support of keys, 381.
— modern, 381, fig. 28.
Pillaut, Mone, his measurements of bass-flutes, 441, 445, 450.
Pin-and-socket-joint, 322.
— Monzani's patent for the, 324.
— of silver and cork, 324, 327, fig. 10.
Pipe, see Vibrations of columns of air. Page 541.
Piston, the principle of, applied to brass instruments, 146.
Pitch, musical, 19-21; Chap. IX, § 291.
— effects of variation of temperature on, 292.
— erroneous notions with regard to the rise of, 297, 299.
— history of, by Mr. A. J. Ellis, 297.
— measurement of, 293.
— Mr. Ellis's methods of measuring, 293-6.
— objections to lowering the English standard of, 320.
— tables of, 298.
Pitch of the flute, contrivances to alter the, 326.
παλαθανός, 304.
Plot, Dr., his investigations, 51.
— his observations on strings, 43.
Poni, flute. 268, 267.
— on beats, 197.
Poss, general remarks on, 721-2.
— of the flute, 717.
— of the flute-player, 698, 710, 718, 710, 721-2.
— of the left arm, hand and fingers, 718.
— of the right arm, hand and fingers, 719.
Positive and negative reflection, 121.
Possin, 870.
— Richard, his patents, 384, 455, 473.
— Potter, W. H., 384.
Poulsen, 518, 519.
— his slizing keys, 504.
— copy of his engraving, 496, fig. 47.
— his adoption of Capeller's dokey, 544.
— his first effort to improve the flute, 489-498.
— his second effort, 542-6.
— his ring-and-crescent-key, 544.
Pruttinger, Michael, 397.
— his account of the Querflöte and the Schwebertöpfchen, 405, fig. 41.
Pratt, Madame, 937.
Pratten, R. S., 652.
— his approval of the writer's tuning, 671-2.
— his "perfected flute," 671-2.
— music by, 936.
— notice of, 915-937.
Production of sound in the flute, 735-6.
— of the above do, 735-61.
— of the notes c, d, e, d', e', 735.
— of the notes d, d', e', 735.
— of the notes e, c e', 735-76.
— of the notes f, e', 752-757.
Proctor, Thomas, his flute maker, 336.
Prunum, his denunciation of flute players, 471.
Ptolemy, his completion of the scale, 252.
Pythagoras, the inventor of temperament, 266-9.
— his discovery of musical ratios, 250.
— his invention of the monochord, 250.
— his re-establishment of the, 250.
Quality of simple sound. 201.
— Chladni on, 202.
— Helmholz's opinions on, contradicted by Seebeck, 206.
Quality of tone. Chap. VI, § 199.
— constituents of, 200.
— of constituting of analytically and synthetically considered, 200-202.
— Dr. C. O. Olyon on, 205.
— general view of, 199.
— Helmholz on, 205.
— modern theory of, 204.
— not independent of pitch, 204.
— not independent of pitch, 207.
— occult causes of variety in, 240.
— of a flute, 424-9.
— of a flute, 425-7.
— of fingerings of his flute with two keys, 435-7.
— his essay, 445.
— his flute with two keys, 434-8.
— music by, 839.
— notice of, 830.
— on the selection of wood for the flute, 316.
— on the early transverse flute, 413.
Rabelais, the German flute mentioned by, 998.
Raff album, Page 529.
Raguenet, the Abbé François, 420.
Rallentando, 797.
Rameau, a supporter of equal temperament, 281.
— his opinions on simple and compound sounds, 172.
— on the influence of partials, 314.
— Range of musical instruments, 25.
Ratios, calculation of, 255.
— of the theoretical scale, 255.
Raut, music by, 848.
— notice of, 849.
Rayleigh, Lord, 105, 140, 340.
— on simple sound, 173.
— on the tuning-fork, 39.
— on velocity of sound, 9.
Reading at sight, 828.
Rebome, his flute for the right hand, 519.
Reed, the air, 84, 106, 107, 109.
— the beating, 80.
— the double, 81.
— the free, 79.
Reeds, 78-83.
Reicha, his music, Page 525.
— instructor of Walckers, 902.
Reichert, his music, Page 525.
— notice of, 922.
Reissiger, his music, Page 525.
— his Trios arranged. Page 530.
Remusat, notice of, Page 589.
Rönchén, 72-77.
— Wheatstone's experiment with, 74.
Respiration, 814-816.
— examples of good, 816.
— Retrospect of improvements, 561.
Rivas, music by, 920.
— notice of, 919.
Ribick, 453, 474-5, 842, 845, 868.
— his attempts to improve the bore, 339.
— his "Bemerkungen," 456-470.
— closed d' key, 55.
Riccati, 67, 128, 129.
— on the tube of a wind-instrument, 247.
Richardson, 652, 709, 819, 909, 921, 925.
— music by, 931.
— notice of, 910.
Ring-flute, see Key, Potgiesser's, 444, fig. 30.
Ring-key, employed by Boehm, 385, 591, 593.
— Gordon's, 568, 606-7.
INDEX.

Ring-key, Nolan’s, 509-511.
Roberts, the Hon. Francis, his investigations. 51.
— on the trumpet and the trumpet-marine. 115.
Rockstro, R. S., his &Ulever. 670.
— his first scheme for the improvement of the flute. 668-9, 670, 672.
— his &U lever. 670, 673, 683, 792-3, 792.
— his improvements in the “cylinder” flute. 673-4, 679-683.
— his latest improvement. 563, 688, 796.
— his “model flute.” 679-683, fig. 64.
— fingerings of, see Gordon.
— his tuning adopted by Rudall and Rose. 669, 674, 682.

Roeber, 560.
— his improved conoidal bore. 665-7.
— his improved tuning slide. 327.
— his partnership with Rudall. 533, 877.
— his skill as a maker of flutes. 533.

Rousseau, J. J., 1, 56, 65, 234.
Rudall, George, Pages 287, 631.
— notice of, 877.
Rudall and Rose, 318, 342, 535, 549, 552, 634, 646, 911.
— tuning of an eight-keyed flute by. 540.
Rudall, Carte and Co. 310, 321, 925.
Rudall, Rose, Carte and Co. 673-4, 925.
Rudolphus, his defective translation of Spohr’s violin school. 284.
Saint-Saëns, arrangements from, Page 529.
— his Romance for flute and piano. Page 526.
Salinas, the inventor of meantone temperament. 269.
Sand-figures, Childin’s, 56.
Saut, notice of, 870.
Sauveur, his investigations of string-vibration. 51.
— his son, 293.
— on the influence of partials. 213.
— the first to investigate beats. 195.
Savart, 157.
— his experiments on longitudinal vibrations. 31.
— his grave note. 15.
— his proof of Bernouilli’s theory. 126.
Saynor. 729, 909, 925.
Scenachus, his engravings. 305.
Scale, and temperament. Chap. VIII. §240.
Scale, the, in equal temperament, calculations for, 272.
— compared with the theoretical scale. 272-4.
— logarithms of ratio of, 276.
— vibration numbers of, 273.
Scale, the “just,” see Scale, the theoretical.
— the “meantone,” intervals of, 270.
— logarithms of ratio of, 276.
— the Pythagorean, errors of, 268.
— intervals of, 267.
— logarithms of ratio of, 276.
— the theoretical. 252.
— calculation of the vibration numbers of, 263.
— discrepancies of, 264.
— intervals of, 216-262.
— its inherent defects. 265.
— logarithms of ratio of, 276.
— table of intervals and vibration numbers of, 264.
— the causes of its imperfections described by Mr. Ellis. 265.
Sclafani. 703. Page 543.
Schäfknitz. 349, 590, 652, 617, 911.
— on the claims of Gordon and Boehm. 631, 911.
Scheibler, his tonometer. 295.
Schickard, 560.
Schicama, the, 256.
Schlegel, 560.
Schnellei on sound-production in the flute. 100-4.
Schneller, J. C. F., his flute with two keys. 523.
Schroeder, 926, 913, 975.
— notice of, 876.
Schwagel, as shown by Virdung. 399, fig. 37.
Schweny, as shown by Luscinius. 399, fig. 38.
Schwerner, see Agricola.
Scott, his patent, 512.
Section, the musical. 812.
Selandze, 559.
Sennock on the tube of a wind-instrument. 242.
— on simple tones. 206.
Semitones, the, in equal temperament, ratio of, 272, 276.
Semitone, the, in mean-tone temperament. 269, 270, 276.
— in Pythagorean temperament. 267, 270, 276.
— the diatonic, 262.
— the major chromatic, 261.
— the minor chromatic, 260.
Semitones, altered, 767-8.
Sensitive notes. 676-8.
Servius Hononatus. 304.
Shake, the, 827.
Shakes of the eight-keyed flute. 784.
— of the flute of 1867. 790.
— of the modified flute of Gordon. 795.
— of the “Rockstro-model” flute. 798.
Shore, John, 35.
Siccamo. 671.
— his diatonic flute. 647-652.
— his patent flutes. 646-652.
Sight-reading. 828.
Signs, explanations of. Page viii.
Simple tones, Helmholtz on. 222.
— remarks on. 207.
Siren, the, 294.
Smith, Mr. Hermann, 157, 162.
— on sound-production in the flute. 100-4.
— Dr. Robert’s investigations. 15.
— his opinions on equal temperament. 282.
— on beats. 197.
Socrates, Xenophon on the teaching of. 307.
Sola, music by, 889.
— notice of, 888.
— “Solo on the flute, how to play a,” 909.
Sonorous bodies, harmonics of, 55.
Sorge, 55.
Sound, appreciated by deaf persons. 24.
— deepest audible, 15.
— produced by distance, 20.
— Helmholtz’s opinion on Savart’s device. 15.
— intensity of, 8.
— in tubes, varying positions of the origin of, 160.
— musical, 18.
— Galileo’s experiment. 18.
— Savart’s experiments on, 18.
— natural propagation of, 2.
— of the flute, how to produce the.
Sound, simple, quality of, 201-7.
— simplicity and complexity of, 172.
— transmission of, 3.
— velocity of, 7.
Sound-boards. 466.
Sound-production in the flute and its congenera. 84-112.
Sounds, fundamental. 44.
— grave, rendered appreciable by their union with higher ones. 17.
— Mueller on. 15.
— Savart on, 15.
— lower-attendant, 192.
— of the lute, Des Cartes on the. 17.
Sound-Vibration. 2.
— Delezene’s remarks on. 14.
— Herschel’s remarks on. 13.
Sound-wave, experiment to illustrate the. 6.
— the exterior and interior. 142.
— length of the. 132.
— motion of the. 4.
— notice of, 915.
— Spencer, George, his collection of flute-works. Page xix.
— his “medium holes.” 686.
— his suggested improvement of the “1861 flute.” 684.
Sporh, 510.
— an advocate for equal temperament. 284.
— arrangements from, Pages 530, 620.
— his music. Page 546.
Springs, best form of flat, 389, fig. 33.
— double, 389, fig. 32.
— needle, 389, fig. 34, 513.
Stael, Madame de, 874, 888.
Strings, harmonics of. 44-8.
— Rousseau’s remarks on the harmonics of. 44.
— segments of. 44.
— vibrations of. 41-3.
Style. 829.
— rules for the avoidance of bad, 829.
Sympathetic vibrations. 58.
— Synthesis of intervals. 534-5.
— of tones. 239.
— Tact. 452, 476-7, 667.
— music by, 851.
— notice of. 850.
— Taffanel, M. Paul, his edition of Drouet’s Studies. 902.
— Taillard. 560.
INDEX.

Tartini, the discoverer of grave harmonics. 194.
— his violin playing. Page 542.
Tauber, music by. 855.
— notice of. 544.
Taylor, Dr. Brook, his investigations of string-vibration. 51.
Temperament. 266.
— equal. 271.
— calculations for. 272.
— excellence of. 290.
— remarks on. 275.
— rise and progress of. 278.
— used in England in 1730. 281.
— meantone. 269.
— the Pythagorean, 267.
Terpander, his addition of three strings to the lyre. 250.
Terschak, his music. Page 547.
Tetrachord, the. 250-251.
Thompson, Gen. Perronet, his temperament of temperament. 238.
Thumb, the right hand, authorities for placing it against the side of the fiddle. 716.
Timbre. 199.
Time. 797-802.
— beating and counting. 798.
— change of. 797.
— common. 799.
— compound common. 801.
— compound triple. 801.
— triple. 800.
Tone, a. 251.
— acuteness of. 236.
— brilliancy of. 232.
— clearness of. 235.
— dulness of. 233.
— gravity of. 236.
— harshness of. 233.
— impureness of. 235.
— injection of. 778.
— of the flute. 769-774.
— power of. 230.
— production of, in the flute. 735.
— quality of. 730.
— of quality. 745-761.
— of see Quality.
— softness of. 230.
— sweetness of. 232.
— the hard thin. 770.
— the hollow. 771.
— the true of the flute. 772-774.
— thinness of. 231.
— volume of. 231.
Tongue, use and abuse of the. 737-744.
Tonometer by Scheibler. 595.
Tour, Baron Cagniard de la, 294.
Touras, B., his song with flute obligato. Page 547.
Towney, his o' key. 506.
— his mouth-piece. 507.
— his tuning lever. 509.
Trecker, of Vienna. 559.
Triple-tonguing. 423.
Tromlitz. 316, 326, 434, 469, 490, 492, 495, 497-8, 500, 502, 593, 597-9, 599, 657, 716, 868.
— his eight-keyed flute. 481.
— his first work. 474-6.
— his flutes. 471.
— his flute with seven keys. 475.
— on the open c' key. 482.
— his second work. 476.
— his system of "open holes." 483-6.
— his third work. 481-6.
— music by. 543.
— notice of. 542.
Trumpet-Marine. 49, 50.
Tuba. 84, 86, 302.
Tube of a wind-instrument, anecdotes concerning the. 249, 322.
— conductivity of the. 245-6.
— diversity of opinion concerning the. 241.
— remarks on the. 243.
— influence of thickness in the. 248.
— its influence on pitch. 244.
— power. 245.
— quality. 247-8.
— permanent change in the. 249.
— of the flute. Chap. XI., §258.
— of tubes. Chap. X., §222.
Tubes, musical, lateral openings in, production of sound in, Chap. III.
Tubular extension of the c'' hole. 263, 688, 706.
— music by. 893.
— notice of. 890.
— pupils of. 891-2.
— tuning of a flute, alteration in the, caused by varying thickness. 355.
— practical test of its accuracy. 355.
— spoiled by improper use of the tuning slide. 356.
— notice of. 890.
— of strings, laws of the. 43.
— of torsional. 34.
Tuning, Mr. Elliss's remarks on. 37.
— forks, a, 450, and a, 459. 350.
— tuning lever, Towney's. 505.
— tuning slide, Capelier's. 532.
— use of the, 746-7.
— various kinds of. 337.
— two flutes, the effect of, given by one. 696, 871.
— on the sands of Chiadini. 56.
— Vaillant. 560.
— Vanderhagen. 560.
— Vanhall. 453, 860.
— Veiled notes. 347.
— Vent-holes. 149-153, 357-354.
— experiment with. 359.
— should be of sufficient size. 358.
— their positions. 358.
— their tendency to cause sharpness. 354.
— the proper ones to use. 357.
— why they are necessary. 357.
— Vibrations, different species of. 26.
— longitudinal. 31.
— of air in tubes, preliminary remarks on. 66-71.
— of columns of air. Chap. IV., §114.
— Bernoulli's theories of. 116.
— of circular tubes. 117.
— of cylindrical tubes. 122.
— of early writers on. 114-5.
— erroneous opinions on. 128-9.
— independent of wind-rush. 147.
— influence of diameter on. 154-5.
— in open and closed pipes. 161-4.
— in open tubes. 120.
— in prismatic tubes. 156.
— in stopped tubes. 199, 120.
— in tubes closed at both ends. 131.
— in tubes of varying diameter. 161-171.
— La Grange on the. 117.
— qualification of Bernoulli's theories of. 130.
— Hon. F. Roberts on. 115.
— of strings. 41.
— of strings, laws of the. 43.
— pendant. 27-8, 119.
— sympathetic, 58-62.
— torsional, 34.
— Vibrations, transverse. 27-29.
— Virdung, his representation of an early key. 381, 486.
— use of the, 746-7.
— his representation of the Schwelg and the Zierlchmitt. 399.
— on the flute. 397.
— Virgil. 304.
— Wagner (Oscar), his Sonata. Page 537.
— Wallakia. 716, 891.
— music by. 903.
— notice of. 902.
— Walker, his idea of noise. 10.
— Wallis, Dr. on the influence of partials. 212.
— on vibrations of strings. 61.
— a maker of the improved Gordon flute. 659.
— his mention of the flute of 1803. 689.
— his patent flutes. 660-2, 86, 6.
— Weber, Gottfried. 564-5.
— his account of a new flute. 521-2.
— his intimacy with Fuerstenau. 898.
— Weiss, Carl. 868, 874.
— C. N., 771.
— music by. 875.
— notice of. 874.
— Wendling. 860.
— Wheatstone, Sir Charles, 167.
— his experiments on columns of air. 157, 159, 160.
— his kalmaphone. 30.
— his proof of Bernoulli's theory. 127.
— on quality of tone. 203.
— on resonators. 74-77.
— on the influence of partials. 218.
— Wheatstone, W., his mouth-piece. 354, 49, 46.
— Whistle, 88.
— Wiedemann. Page 545.
— Willis, a flute-maker. 535, 877.
— Wind-instruments, ancient article on, from the Encyclopédie Méthodique. 304.
— Eastern, 86.
— Winter, a blind flutist. Page 567.
— Wolfson. 22, Dr. Wood, James, his patent. 527.
— Wooden flutes, their management. 776.
INDEX.

Wragg, his "Preceptor" for the eight-keyed flute. 499.
—his "Preceptor" for the six-keyed flute. 453, 477.
Wunderlich. 820, 890, 894, 917.
—music by. 857.
—notice of. 856.
Xenophon, his remarks on flute-teaching. 307.
Yo. 84, 86.
Young, Dr. Thomas, his investigations. 30, 215.
—on the influence of partials. 215, 216.
—on the study of music. 689.
Zamminer. 348.

Zamminer on the tube of a wind-instrument. 242.
Zarlino, an advocate for equal temperament. 279.
Zoeller, Carl, his capriccio for flute and piano. Page 537.
—"flûtes d'amour" in the collection cl. 533-3.
—his collection of instruments. 415, 424, 429, 430, 433, 446-8, 532.
—his library. Page xix.
Zuverhüft, as shown by Virdung. 399, ff. 37.
—as shown by Luscinius. 399, fig. 38.