

SMITHSONIAN MISCELLANEOUS COLLECTIONS

PART OF VOLUME XLVI

INDEX TO THE LITERATURE

OF

GALLIUM

1874-1903

PREPARED BY

PHILIP E. BROWNING, PH. D.



(No. 1543)

CITY OF WASHINGTON
PUBLISHED BY THE SMITHSONIAN INSTITUTION

1904

WASHINGTON, D. C.
PRESS OF JUDD & DETWEILER

1904

LETTER OF TRANSMITTAL.

WASHINGTON AND LEE UNIVERSITY,
DEPARTMENT OF CHEMISTRY,
LEXINGTON, VA., *October 18, 1904.*

The Committee of the American Association for the Advancement of Science having charge of Indexing Chemical Literature has voted to recommend to the Smithsonian Institution for publication the following:

INDEX TO THE LITERATURE OF GALLIUM, 1875-1903;

INDEX TO THE LITERATURE OF GERMANIUM, 1886-1903;

both prepared by Philip E. Browning, Ph. D., of the Kent Chemical Laboratory of Yale University.

JAMES LEWIS HOWE,
Chairman.

Mr. S. P. LANGLEY,
Secretary of the Smithsonian Institution.

This publication forms one of the following series:

Index to the Literature of Uranium, 1785-1885, by Henry Carrington Bolton, 1885.

Index to the Literature of Columbium, 1801-1887, by Frank W. Traphagen, 1888.

Index to the Literature of the Spectroscope, by Alfred Tuckerman, 1888, 1902.

Index to the Literature of Thermodynamics, by Alfred Tuckerman, 1890.

A Bibliography of the Chemical Influence of Light, by Alfred Tuckerman, 1891.

A Bibliography of Aceto-Acetic Ester, by Paul H. Seymour, 1894.

Index to the Literature of Didymium, 1842-1893, by A. C. Langmuir, 1895.

Indexes to the Literature of Cerium and Lanthanum, by W. H. Magee, 1895.

A Bibliography of the Metals of the Platinum Group, by Jas. Lewis Howe, 1897.

Review and Bibliography of the Metallic Carbides, by J. A. Mathews, 1898.

Index to the Literature of Thallium, 1861-1897, by Miss Martha Doan, 1898.

Index to the Literature of Zirconium, by A. C. Langmuir and Charles Baskerville, 1899.

A Bibliography of the Analytical Chemistry of Manganese, 1785-1900, by Henry P. Talbot and John W. Brown, 1902.

Index to the Literature of Thorium, 1817-1902, by Cavalier H. Joüet, 1903.

INDEX TO THE LITERATURE OF GALLIUM.

(1875-1903.)

PREPARED BY PHILIP E. BROWNING.

- 1875: (1). LECOQ DE BOISBAUDRAN. (Discovery.)
Compt. rend., LXXXI, 493; Ber. VIII, 1355, 1680; Ztschr. Anal. Chem., XVI, 239; Bull. Soc. Chim. (Paris), n. f., XXIV, 370; Amer. J. Sci., (3), XI, 320; Jsb. (1875), 205; Pogg. Ann., CLVII, 494; Chem. News, XXXII, 159, 294; Amer. Chemist, VI, 146; Pharm. J. Trans., (3), VI, 282; N. Arch. Ph. Nat. LIV., 283; Ann. Chim. Phys., (5), X, 100; J. Chem. Soc. (Lond.), XXX, 190; Chem. Centrbl. (1875), 658; Ding. Pol. J., CCXVIII, 376; Tidsskrift, (1), XIV, 349; Gazz. Chim. Ital., VIII, 24; Phil. Mag., I, 414; Monit. Scientif. (1876), 88; Berg. u. Hüttenmännische Ztg. (1876), 198, 207, 237; Arch. der Pharm., V, 352; Deutsche Industriezeit (1875), 731.
- 1875: (2). HUGO. (Objection to name.)
Compt. rend., LXXXI, 530.
- 1875: (3). MENDELEEFF. (Prediction previous to discovery.)
Compt. rend., LXXXI, 969; J. Chem. Soc. (Lond.), XXX, 530; Chem. News, XXXII, 293; Jsb. (1875), 207; Bull. Soc. Chim., n. f., XXV, 295; Chem. Centrbl. (1875), 817; Phil. Mag., (5), I, 542.
- 1876: (1). LECOQ DE BOISBAUDRAN. (Spectrum.)
Compt. Rend., LXXXII, 168; Chem. News, XXXIII, 35; Phil. Mag., (5), I, 176; Amer. Chemist, VI, 299; Chem. Centrbl. (1876), 194.
- 1876: (2). LECOQ DE BOISBAUDRAN. (Physical and chemical properties of the metal.)
Compt. rend., LXXXII, 1036, 1037; Bull. Soc. Chim. (Paris), (2), XXV, 400, 521; XXVI, 158, 433; Arch. Ph. Nat., LVI, 45; Chem. News, XXXIV, 150, 183; Phil. Mag., (5), II, 398, 479; Pogg. Ann., CLVIII, 494; Chem. Centrbl. (1876), 451, (1877), 19; Gazz. Chim. Ital., VII, 32; Ber., IX, 64, 1608, 1807.
- 1876: (3). LECOQ DE BOISBAUDRAN. (Extraction.)
Compt. rend., LXXXII, 1098; LXXXIII, 636; Bull. Soc. Chim. (Paris), (2), XXVII, 49, 144; J. Chem. Soc. (Lond.), XXX, 275; XXXI, 48, 521; Chem. Centrbl. (1876), 452, 705; Gazz. Chim. Ital., VII, 34; Chem. News, XXXIII, 230; XXXIV, 173; Ber., IX, 726, 731; Phil. Mag., (5), II, 480.
- 1876: (4). LECOQ DE BOISBAUDRAN. (Physical properties.)
Compt. rend., LXXXIII, 611, 1100; Phil. Mag., (5), I, 175; II, 398; Wag. Jsb., XXIII, 7; Chem. News, XXXIII, 193; Bull. Soc. Chim. (Paris), XXVI, 458; Arch. d. Pharm., VII, 453.

- 1876: (5). DELACHANAL and MERMET. (Presence in zinc.)
 Bull. Soc. Chim. (Paris), n. s., xxv, 197; xxvii, 49; Chem. Centrbl. (1876), 339; Ber., x, 91; Wag. Jsb., xxii, 1; xxiii, 9.
- 1876: (6). LECOQ DE BOISBAUDRAN. (Reactions, behavior toward reagents.)
 Compt. rend., lxxxiii, 663, 824; Chem. Centrbl. (1876), 721; (1877), 51; Chem. News, xxxiv, 217.
- 1876: (7). LECOQ DE BOISBAUDRAN. (Gallium crystals.)
 Compt. rend., lxxxiii, 1044; J. Chem. Soc. (Lond.), xxxi, 440; Chem. News, xxxv, 11; Chem. Centrbl. (1877), 65.
- 1877: (1). MUIR. (Comparison with Ekaaluminum.)
 Phil. Mag., (5), iii, 281; Chem. Centrbl. (1877), 434; Wag. Jsb., xxiii, 8.
- 1877: (2). LECOQ DE BOISBAUDRAN. (Review of work.)
 Ann. Chim. Phys., (5), x, 100; Chem. Centrbl. (1877), 178; Gazz. Chim. Ital., vii, 332; Chem. News, xxxv, 148, 157, 167.
- 1878: (1). LECOQ DE BOISBAUDRAN and JUNGFLEISCH. (Extraction.)
 Compt. rend., lxxxvi, 475; Amer. J. Sci., (3), xv, 473; Phil. Mag., (5), v, 318; Jsb. (1878), 251; J. Chem. Soc. (Lond.), xxxiv, 374, 556, 837; Chem. Centrbl. (1878), 210; Chem. News, xxxvii, 121; Monit. Scientif. (1878), 290; Chem. Industrie (1878), 130; Wag. Jsb., xxiii, 9; xxiv, 5; Bull. Soc. Chim. (Paris), xxvii, 144; xxx, 501; Amer. Chemist, vii, 309.
- 1878: (2). LECOQ DE BOISBAUDRAN and JUNGFLEISCH. (Properties of the metal.)
 Compt. rend., lxxxvi, 577; Jsb. (1878), 253; Chem. Centrbl. (1878), 276; Chem. News, xxxvii, 142.
- 1878: (3). LECOQ DE BOISBAUDRAN. (Halogens.)
 Comp. rend., lxxxvi, 756; Jsb. (1878), 254; Chem. Centrbl. (1878), 322.
- 1878: (4). DUPRE. (Researches.)
 Compt. rend., lxxxvi, 720; Amer. J. Sci., (3), xv, 474; Jsb. (1878), 254; Bull. Soc. Chim. (Paris), n. s., xxx, 503; J. Chem. Soc. (Lond.), xxxiv, 472; Chem. Centrbl. (1878), 322; Wag. Jsb., xxiv, 7; Chem. News, xxxvii, 184.
- 1878: (5). BERTHELOT. (Physical constants.)
 Compt. rend., lxxxvi, 786; Amer. J. Sci., (3), xvii, 166; Phil. Mag., (5), vii, 75; Ann. Chim. Phys., (5), xv, 242; Jsb. (1878), 78; J. Amer. Chem. Soc., x, 279; J. Chem. Soc. (Lond.), xxxiv, 556; Chem. Centrbl. (1878), 353; Wag. Jsb., xxiv, 8.

- 1878: (7). LECOQ DE BOISBAUDRAN. (Equivalent.)
Comp. rend., lxxxvi, 756, 941; Bull. Soc. Chim. (Paris), n. s., xxix, 385; J. Amer. Chem. Soc., i, 320; J. Chem. Soc. (Lond.), xxxiv, 646; Wag. Jsb., xxiv, 8; Chem. Centrbl. (1878), 387; Chem. News, xxxvi, 216; Tidsskrift, (1), xvii, 144.
- 1878: (8). LECOQ DE BOISBAUDRAN. (Alloys with aluminum.)
Compt. rend., lxxxvi, 1249; Chem. Centrbl. (1878), 483; Chem. News, xxxvii, 274; Wag. Jsb., xxiv, 9.
- 1878: (9). LECOQ DE BOISBAUDRAN. (Atomic weight.)
Bull. Soc. Chim. (Paris), n. s., xxxii, 393; Amer. J. Sci., (3), xvi, 137; Jsb. (1878), 250; Chem. News, xxxvii, 138.
- 1878: (10). REGNAULD. (Electrochemistry.)
Compt. rend., lxxxvi, 1457; Jsb. (1878), 135; Chem. Centrbl. (1878), 561; Wag. Jsb., xxv, 9.
- 1879: (1). LOCKYER. (Heating of metal in vacuo.)
Chem. News, xi, 101; Jsb. (1879), 176; Compt. Rend., lxxxix, 514.
- 1879: (2). JUNGELEISCH. (Separation from blendes.)
Bull. Soc. Chim. (Paris), xxxi, 50; Ber., xii, 276, 382; Wag. Jsb., xxv, 9; Berg. u. Hüttenmännische Ztg. (1879), 206.
- 1880: (1). SCHUCHT. (Electrolysis of salts.)
Chem. Ztg. (1880), 292; Berg. u. Hüttenmännische Ztg., xxxix, 121; Jsb. (1880), 174, 1143; Chem. News, xli, 280; Wag. Jsb., xxvi, 415.
- 1880: (2). CORNWALL. (Occurrence in American blendes.)
Amer. Chem. J., ii, 44; Chem. Ztg. (1880), 443; Jsb. (1880), 327; J. Chem. Soc. (Lond.), xl, 997.
- 1881: (1). CLARKE. (Atomic weight.)
Amer. Chem. J., iii, 263; Phil. Mag., (5), xii, 101; Jsb. (1881), 7.
- 1881: (2). LECOQ DE BOISBAUDRAN. (Anhydrous chlorides.)
Compt. rend., xciii, 294, 329, 815; Jsb. (1881), 221; Chem. Soc. (Lond.), xl, 1103; xlii, 364; Chem. Centrbl. (1881), 645; (1882), 5; Chem. Ztg. (1881), 979.
- 1881: (3). CLARKE. (Atomic weight.)
Amer. Chem. J., iii, 263; Phil. Mag., (5), xii, 101; Jsb. (1881), 7.
- 1882: (1). LECOQ DE BOISBAUDRAN. (Oxychloride.)
Compt. rend., xciv, 695; Jsb. (1882), 287; J. Chem. Soc. (Lond.), xlii, 698; Chem. Centrbl. (1882), 284; Chem. Ztg. (1882), vi, 266.
- 1882: (2). LECOQ DE BOISBAUDRAN. (Decomposition of protochloride.)
Compt. rend., xciv, 18; J. Chem. Soc. (Lond.), xlii, 1167.

- 1882: (3). LECOQ DE BOISBAUDRAN. (Precipitants.)
 Comp. rend., xciv, 1154, 1228; Jsb. (1882), 1295; J. Chem. Soc. (Lond.), xlii, 897; Chem. Centrbl. (1882), 418.
- 1882: (4). LECOQ DE BOISBAUDRAN. (Separations.)
 FROM NA., K., LI., CS., RB., BA., SR., CA., MG., AL., CR.
 Compt. rend., xciv, 1228; Jsb. (1882), 1295; Ann. Chim. Phys., (6), ii, 176; Chem. Ztg. (1882), vi, 493.
 FROM BE., CE., Y., FE., TH.
 Comp. rend., xciv, 1439; Jsb. (1882), 1295; Ann. Chim. Phys., (6), ii, 176; Chem. Centrbl. (1882), 519.
 FROM ZR., MN., ZN.
 Compt. rend., xciv, 1625; xcix, 526; Jsb. (1882), 1295; Ann. Chim. Phys. (6), ii, 176; Chem. Centrbl. (1882), 519.
 FROM CO., NI., TL.
 Compt. rend., xciv, 157; Jsb. (1882), 1295; Ann. Chim. Phys., (6), ii, 176; Bull. Soc. Chim. (Paris), xxxix, 547; Chem. Centrbl. (1882), 606.
 FROM IN., CD.
 Compt. rend., xciv, 410; Jsb. (1882), 1295; Ann. Chim. Phys., (6), ii, 176; Bull. Soc. Chim. (Paris), xxxix, 547; Chem. Centrbl. (1882), 646.
 FROM U., PB.
 Compt. rend., xciv, 503; Jsb. (1882), 1295; Ann. Chim. Phys., (6), ii, 176; Bull. Soc. Chim. (Paris), xxxix, 547; Chem. Centrbl. (1882), 727.
- FROM SX., SB., BI., CU., HG., AG., AU., PT., PD.
 Compt. rend., xciv, 705, 1192, 1332; Jsb. (1882), 1295; Ann. Chim. Phys., (6), ii, 176; Bull. Soc. Chim. (Paris), xxix, 547; Chem. Centrbl. (1882) 826, (1883) 36, 130.
- 1883: (1). LECOQ DE BOISBAUDRAN. (Separations.)
 FROM RH., IR., RU., OS., AS., SE.
 Compt. rend., xcvi, 152, 1696, 1838; Ann. Chim. Phys., (6), ii, 176; Jsb. (1883), 1571; Bull. Soc. Chim. (Paris), xi, 350; xli, 353; Chem. Centrbl. (1883), 130, 501.
 FROM TE., SL., MO., V., W., P., TL., TA., NB., TR., YT., SC., F.
 Compt. rend., 66, 142, 295, 521, 623, 730, 1463; Ann. Chim. Phys., (6), ii, 176; Bull. Soc. Chim. (Paris), xli, 353; xlii, 248; Jsb. (1883), 1571; Chem. Centrbl. (1883), 587, 678, 753, 861.
- 1883: (2). DONATH and MAYRHOFER. (Atomic volume.)
 J. Chem. Soc. (Lond.), xlii, 1323; Ber., xvi, 1588; Jsb. (1883), 24.
- 1883: (3). RABUTEAU. (Physiological effect.)
 Compt. rend. de la Soc. de Rive (1883) 310, Chem. Centrbl. (1884), 64.

- 1884: (1). LECOQ DE BOISBAUDRAN. (Separations.)
FROM B. (Organic matter.)
Compt. rend., *xviii*, 711, 781; Ann. Chim. Phys., (6), *ii*, 176; Jsb. (1884), 1600; Chem. Centrbl. (1884), 419; Chem. Ztg. (1884), 1040.
- 1884: (2). LECOQ DE BOISBAUDRAN. (Solubility of the ferrocyanide.)
Compt. rend., *xcix*, 526; Jsb. (1884), 1602.
- 1884: (3). CARNELLY. (Relation of color to atomic weight.)
Phil. Mag., (5), *xviii*, 130; Ber. (1884), 2151; Chem. News, *i*, 193; Jsb. (1884), 43.
- 1884: (4). CLARKE. (Atomic weight.)
Chem. News, *xlix*, 260, 273; Chem. Ztg. (1884), 930.
- 1885: (1). EHRLICH. (Extraction.)
Chem. News, *li*, 115; Chem. Ztg. (1885), 78; Jsb. (1885), 496.
- 1885: (2). LECOQ DE BOISBAUDRAN. (Alloys with indium.)
Compt. rend., *c*, 701; Chem. News, *li*, 165; Jsb. (1885), 496; Chem. Centrbl. (1885), 297; Chem. Ztg. (1885), *i*, 470.
- 1885: (3). GLADSTONE. (Refraction equivalent.)
Phil. Mag., (5), *xx*, 162; Jsb. (1885), 310.
- 1885: (4). KUNERT. (Extraction.)
Chem. Ztg. (1885), *ix*, 1826; Ber., *xix*, 74; Jsb. (1885), 496.
- 1886: (1). LECOQ DE BOISBAUDRAN. (Identity with austrium.)
Compt. rend., *cxii*, 647, 1436; Jsb. (1886), 407; Dingl. Pol. J., *cccxi*, 96; Wag. Jsb., *xxxii*, 224.
- 1886: (2). LECOQ DE BOISBAUDRAN. (Estimation.)
Ann. Chim. Phys., (6), *xi*, 429.
- 1886: (3). WILLGEROOT. (As halogen transferrer.)
J. Prakt. Chem., *xxxv*, 142, 391; Jsb. (1887), 618; Bull. Soc. Chim. (Paris), *xlviii*, 346; J. Chem. Soc. (Lond.), *lii*, 326; Chem. Ztg. Rep., 1887, 43; Chem. Centrbl. (1887), 507.
- 1887: (1). LECOQ DE BOISBAUDRAN. (Red fluorescence of the oxide with chromium.)
Compt. rend., *civ*, 330, 1584; Chem. News, *lvi*, 12; Ber., *xx*, 456r; Jsb. (1887), 358.
- 1887: (2). LECOQ DE BOISBAUDRAN. (Volatility of the chloride.)
Ann. Chim. Phys. (1887), (6), *xi*, 420; Chem. Ztg. Rep. (1887), 186.
- 1888: (1). LECOQ DE BOISBAUDRAN. (Fluorescence of compounds.)
Compt. rend., *cv*, 1228; Chem. Centrbl. (1888), 462.
- 1888: (2). FRIEDEL and CRAFTS. (Vapor density of the chloride.)
Compt. rend., *cvii*, 306; J. Chem. Soc. (Lond.), *lix*, 1250; *liii*, 825; Chem. Centrbl. (1888), 1167; Chem. Ztg. Rep. (1888), 213.

- 1888: (3). NILSON and PETTERSSON. (Valence and the chloride.)
Compt. rend., cvii, 527; Ber., xxi, 691R; Jsb. (1888), 572; Chem.
Centrbl. 1888), 1328; Chem. Ztg. Rep. (1888), 261; Bull. Soc. Chim.
(Paris), (3), 1, 724.
- 1889: (1). BARTLETT. (Occurrence.)
Chem. Soc. Ind. J., viii, 896; Jsb. (1889), 341.
- 1889: (2). RAMSAY. (Molecular weight.)
J. Chem. Soc. (Lond.), LV, 531.
- 1890: (1). WINKLER. (Reduction of the oxide by magnesium.)
Ber., xxiii, 788; J. Chem. Soc. (Lond.), LVIII, 693.
- 1891: (1). CLARKE. (Atomic weight.)
Chem. News, LXII, 76; Jsb. (1891), 79.
- 1892: (1). LECOQ DE BOISBAUDRAN. (Spark spectrum.)
Compt. rend., cxiv, 815; Jsb. (1892), 456; J. Chem. Soc. (Lond.),
LXII, 930; Chem. Centrbl. (1892), 1, 810.
- 1893: (1). WILDE. (Spectrum.)
Proc. Roy. Soc., LIII, 369; Jsb. (1893), 151.
- 1893: (2). GLADSTONE. (Molecular refraction and dispersion.)
Phil. Mag., xxxv, 365; Ber., xxv, 357R; Chem. News, LXVII, 94; Jsb.
(1893), 42.
- 1893: (3). KIRTLAND. (Occurrence in Australian blends.)
Australian Assoc. Adv. Sci. (1893), 266; J. Chem. Soc. (Lond.), LXX,
183.
- 1895: (1). LECOQ DE BOISBAUDRAN. (Atomic weight.)
Compt. rend., cxx, 361.
- 1896: (1). HARTLEY and RAMAGE. (Occurrence.)
Lond. Roy. Soc. Proc., LX, 35; Amer. J. Sci., (4), II, 378; Jsb. (1896),
554; J. Soc. Chem. Indust., xvi, 367.
- 1897: (1). HARTLEY and RAMAGE. (Occurrence.)
J. Chem. Soc. (Lond.), LXXI, 533; Bull. Soc. Chim. (Paris), (3), xxvi,
951.
- 1897: (2). WINKLER. (History of the discovery.)
Ber., xxx, 13.
- 1897: (3). WYRUBOFF. (Silico-tungstate.)
Bull. Soc. Franc. Min., xix, 219; J. Chem. Soc. (Lond.), LXXII, 173.
- 1898: (1). LANDOLT, OSWALD, and SEUBERT. (Atomic weight.)
Ber., xxxi, 2762.

- 1898: (2). HARTLEY and RAMAGE. (Occurrence in iron ores, etc.)
 Lond. Roy. Soc. Proc., LX, 393; J. Chem. Soc. (Lond.), LXXIV, 236;
 Chem. Centrbl. (1897), 1, 455; Ztschr. anorg. chem., XVIII, 232;
 Dublin Roy. Soc. Proc., n. s., VIII, 703.
- 1899: (1). MEYER. (Magnetic properties.)
 Monatsh. f. Chem., XX, 380.
- 1899: (2). HARTLEY and RAMAGE. (Spectrum.)
 Astrophys. J., IX, 214.
- 1901: (1). HARTLEY and RAMAGE. (Occurrence.)
 Lond. Roy. Soc. Proc., LXVIII, 99; Dublin Roy. Soc. Sci. Trans., VII:
 Amer. J. Sci., (4), XI, 323.
- 1904: (1). RIMATORI. (Occurrence in Sardinian blendes.)
 Atti. R. Accad. dei Lincei Roma, (5), XIII, 1, 277, Chem. Centrbl.
 (1904), 1, 1370.

 INDEX OF AUTHORS.

- Berthelot, 1878, (5).
- de Boisbaudran, 1875, (1); 1876, (1), (2),
 (3), (4), (6), (7); 1877, (2); (1878, (3),
 (7), (8), (9); 1881, (2); 1882, (1), (2),
 (3), (4); 1883, (1); 1884, (1), (2);
 1885, (2); 1886, (1), (2); 1887, (1),
 (2); 1888, (1); 1892, (1); 1895, (1).
- de Boisbaudran and Jungfleisch, 1878,
 (1), (2).
- Carnelly, 1884, (3).
- Clarke, 1881, (1); 1884, (4); 1891, (1).
- Cornwall, 1880, (2).
- Crafts. *See* Friedel.
- Delachanal and Mermet, 1876, (5).
- Donath and Mayrhofer, 1883, (2).
- Dupre, 1878, (4).
- Ehrlich, 1885, (1).
- Friedel and Crafts, 1888, (2).
- Gladstone, 1885, (3); 1893, (2).
- Hartley and Ramage, 1896, (1); 1897,
 (1); 1898, (2); 1899, (2); 1901, (1).
- Hugo, 1875, (2).
- Jungfleisch, 1879, (2). *See also* de Bois-
 baudran.
- Kirtland, 1893, (3).
- Kunert, 1885, (4).
- Landolt, Oswald, and Seubert, 1898, (1).
- Lockyer, 1879, (1).
- Muir, 1877, (1).
- Mendeleeff, 1875, (3).
- Mermet. *See* Delachanal.
- Meyer, 1899, (1).
- Nilson and Pettersson, 1888, (3).
- Oswald. *See* Landolt.
- Pettersson. *See* Nilson.
- Rabuteau, 1883, (3).
- Ramage. *See* Hartley.
- Ramsay, 1889, (2).
- Regnaud, 1878, (10).
- Rimatori, 1904, (1).
- Schucht, 1880, (1).
- Seubert. *See* Landolt.
- Wilde, 1893, (1).
- Willgeroot, 1886, (3).
- Winkler, 1890, (1); 1897, (2).
- Wyonboff, 1897, (3).

INDEX OF SUBJECTS.

- Alloys with aluminum, 1878, (8).
 indium, 1885 (2).
- Atomic weight, 1878, (9); 1881, (1); 1884, (4); 1891, (1); 1895, (1); 1898, (1).
- Atomic weight, Relation of color to, 1884, (3).
- Austrum, Identity with, 1886, (1).
- Compounds.
- Fluorescence of, 1888, (1).
 - Chloride, 1888, (3).
 - Chloride, Anhydrous, 1881, (2).
 - Chloride, Vapor density of, 1888, (2).
 - Chloride, Volatility of, 1887, (2).
 - Halogens, 1878, (3).
 - Oxide, Reduction by magnesium, 1890, (1).
 - Oxychloride, 1882, (1).
 - Protochloride, Decomposition of, 1882 (2).
 - Salts, Electrolysis of, 1880, (1).
 - Silico-tungstate, 1897, (3).
- Crystals of Gallium, 1876, (7).
- Discovery, 1875, (1), (3); 1897, (2).
- Ekaaluminum, Comparison with, 1877, (1).
- Electrochemistry, 1878, (10).
- Equivalent, 1878, (7).
- Estimation, 1886, (2).
- Extraction, 1876, (3); 1878, (1); 1885, (1), (4).
- Florescence with chromium, 1887, (1).
- Halogen transferrer, 1886, (3).
- Heating of the metal in vacuo, 1879, (1).
- Molecular weight, 1889, (2).
- Name, Objection to, 1875, (2).
- Occurrence, 1889, (1); 1896, (1); 1897, (1); 1901, (1).
- In American blends, 1880, (2).
 - In Australian blends, 1893, (3).
 - In Sardinian blends, 1904, (1).
 - In iron ores, 1898, (2).
 - In zinc, 1876, (5).
- Physical properties, 1876, (4).
- Atomic volume, 1883, (2).
 - Constants, Physical, 1878, (5).
 - Magnetic properties, 1899, (1).
 - Molecular refraction and dispersion, 1893, (2).
 - Refraction equivalent, 1885, (3).
 - Spectrum, 1876, (1); 1893, (1); 1899, (2).
 - Spectrum, Spark, 1892, (1).
- Physiological effects, 1883, (3).
- Precipitants, 1882, (3).
- Properties of the metal, 1876, (2); 1878, (2).
- Reactions, 1876, (6).
 - Researches, 1878, (4).
 - Review of work, 1877, (2).
- Separation from other elements, 1882, (4); 1883, (1); 1884, (1).
- Separation from blends, 1879, (2).
- Valence, 1888, (3).