



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### **Usage guidelines**

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

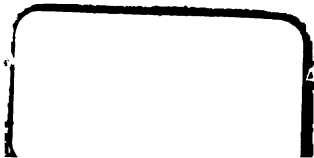
### **About Google Book Search**

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

Stanford University Libraries



3 6105 121 154 954



VER

BRAR

AN

UNIVERSITY OF CALIFORNIA

LIB

VERS

BRAR

ANFO

STA

UN

LIB

VERSE

BRAR





Vertical line of text on the right side of the page.

Small mark or character.

Small mark or character at the bottom right.

Small mark or character on the left side.

Small mark or character on the left side.

AN INDEX TO  
APPLETONS'  
ANNUAL CYCLOPÆDIA  
AND  
REGISTER OF IMPORTANT EVENTS.

TWELVE VOLUMES,  
1876 TO 1887

INCLUSIVE.

LIBRARY  
UNIVERSITY OF MICHIGAN  
ANN ARBOR

NEW YORK:  
D. APPLETON AND COMPANY,  
1, 3, AND 5 BOND STREET.  
1888.



AES  
A72  
Index  
1876-87

COPYRIGHT, 1888,  
BY D. APPLETON AND COMPANY.

Y9A9B11  
R00M1.0R0B0A70 00A.111  
Y1000V100

# INDEX

TO THE TWELVE VOLUMES, NEW SERIES, OF ANNUAL CYCLOPÆDIA.

1876 to 1887.

## AARIFI

Aarif Pasha, sketch, ii, 1.  
Abba, battle at, x, 817.  
Abbe, C., observations by, iii, 84; xii, 487.  
Abbe, Prof., of Jena, ix, 502, 507-510.  
Abbot, Ezra, obit., ix, 601.  
Abbott, C. C., discovery by, vi, 19; ix, 16; xi, 28.  
Abbott, Helen C. D., x, 45; xi, 46.  
Abbott, J. C., obit., vi, 678.  
Abbott, J. S. C., sketch, ii, 1.  
Abbott, W. P., obit., iii, 681.  
Abdallah, Tashi, xii, 244.  
Abdallah, the Sheik, v, 628.  
Abd-el-Kader, sketch, iv, 1; x, 817, 818.  
Abd-el-Samet, ix, 801.  
Abdominal section, x, 742.  
Abdul-Aziz, i, 1, 760.  
Abdul-Hamid II, i, 2; vi, 841.  
Abdul Kerim Pasha, sketch, ii, 1; x, 817.  
Abdul Melik, xi, 6.  
Abdul Munin Khan, xi, 6.  
Abdurrahman Khan, v, 1; struggle with Ayoob, vi, 8; viii, 1, 4; ix, 3, 5; x, 2, 4, 7, 12; xi, 4, 5; xii, 491.  
Abdy, Sir T. N., obit., ii, 591.  
Abeel, Gustavus, obit., xii, 567.  
Abel, Frederick A., experiments by, iv, 181; theories, x, 160, 848, 574.  
Abercorn, Duke of, obit., x, 655.  
Abercrombie, J. J., obit., ii, 574.  
Abercrombie, Ralph, xii, 491.  
Aberdare Mountains, ix, 347.  
Aboo Roash, pyramid of, ix, 21.

## ACONCAGUA

About, E., obit., x, 655.  
Absorption of liquids through the stomach, xii, 676.  
Abt, Franz, obit., x, 656.  
Abu Hubba, inscriptions from, xii, 17.  
Abu Klea Wells, engagement at, ix, 804; x, 116, 814, 819.  
Abydos, Tablet of, vii, 257.  
Abyssinia, in volumes i, ii, iv, xi, and xii; war with Egypt, i, 8; ii, 2; iv, 2, 888; v, 286; views in, illustrations, i, 4, 5; ii, 2; provinces of, ii, 2; cession of Massowah, viii, 802; treaty, ix, 296; the Italians in, xi, 1; xii, 1; attack on them, xii, 2; conquest of Harrar, xii, 2; treaty with England, xii, 1; intercourse with Russia, xi, 1.  
Acadia, ix, 265.  
Acadia College, i, 67.  
Accident-insurance law, ix, 857.  
Acclimatization, xii, 669; capability of races for, 669.  
Acetanilide, xi, 289.  
Acetophenone, xi, 289.  
Acetoxims, viii, 111.  
Achard, invention by, vi, 255.  
Acharenza, Duchess of, obit., i, 627.  
Acheen, war in, i, 584; ii, 541; iii, 597; iv, 657; v, 555; vi, 625; vii, 590; viii, 557; ix, 557; x, 625; xi, 608, 609; pirates in, 609; new disease in, 608.  
Achterfeldt, J. H., obit., ii, 591.  
Acids, new, ii, 91; viii, 111; xii, 105.  
Aconcagua Mountains, ix, 542, 543.

Adair, W. P., obit., v, 587.  
 Adf Kaleh, fortress of, iii, 45.  
 Adam, Edmond, obit., ii, 551.  
 Adam, W. P., obit., vi, 690.  
 Adami, J. G., experiments by, x, 692.  
 Adams, Alvin, obit., ii, 574.  
 Adams, Charles Francis, obit. and portrait, xi, 1.  
 Adams, Edwin, sketch, ii, 3.  
 Adams, Henry, xii, 479.  
 Adams, J. F., obit., vi, 678.  
 Adams, James O., obit., xii, 567.  
 Adams, William, obit., v, 587.  
 Adirondack Forests, viii, 356, 576; ix, 582; x, 685.  
 Adler, ix, 359.  
 Adlie, battle at, x, 728.  
 Admiralty building explosion, x, 454.  
 Adrain, G. B., obit., iii, 631.  
 Adulterations of Food, iv, 2; vi, 81, 407, 528, 639; ix, 1; test for glucose in sugar, viii, 112; laws concerning, ix, 3.  
 Advancement of Science, Associations for, ix, 44; x, 44; xi, 46; xii, 31.  
 Advent Christian Church, v, 2. See Adventists.  
 Adventists, i, 5; ii, 3; iii, 1; iv, 5; vi, 1; a prophetess, ii, 4; iv, 5; differences between Seventh-Day, and Seventh-Day Baptists, iii, 49; faith, vi, 1; xi, 2; xii, 8; history, xi, 2; Sabbath question, iii, 4.  
 Æolian Harp, the, x, 607.  
 Æolian Organ, the, x, 618.  
 Aerial Navigation, vi, 548; ix, 72.  
 Aerial Transportation. See Telpherage, viii, 679.  
 Affirmation. See Oaths.  
 Afghanistan, i, 6; ii, 4; iii, 2; iv, 6; v, 3; vi, 2; ix, 3; x, 1; xi, 1; xii, 4; maps, i, 7; iii, 3; iv, 8, 18; v, 5; viii, 1; x, 8; map of Cabul, iv, 18; map of Candahar, v, 7; frontier question, ix, 6, 406, 713; x, 1, 2, 16; xi, 4; Russian and British embassies to, i, 6; views of Cabul and Herat, ii, 5, 6; x, 1; negotiations with Russia, ii, 5, 6; with the Indian Government, iii, 4; view of Candahar, iii, 5; of Lasgird, ix, 5; towers of refuge in, ix, 7; Zhob valley expedition, ix, 7; strategic railroad in, ix, 6; x, 12, 13; xii, 6; map of neutral territory, x, 3; Russian advance, x, 5; xi, 5; the disputed district, x, 6; Herat, x, 7; Penjdeh affair, x, 8; battle, x, 9; the Durbar at Rawal Pindi, x, 12; the Hindus, x, 14; the great powers, x, 15; illustration, junction of the Murghab and Kushk, x, 17;

submission of Vakhan to Russia, xi, 5; revolt, xi, 5; trans-Caspian railway, xi, 6; xii, 6; Ghilzal revolt, xii, 5; Russian occupation of Kerki, xii, 7, 308; new ally for Russia, xii, 7.  
 Afghans, descent claimed by, ii, 4; tribes of, v, 3.  
 Afghan War, the, see Afghanistan in vols. iii, iv, v, vi, ix, and x; effect in India, iii, 437; iv, 491; meeting in London, iv, 494; discussed in Parliament, v, 330, 337, 343; vi, 362; Russian correspondence, vi, 309; cost of, v, 386; effect in Persia, v, 622; change in British policy, vi, 2; withdrawal of British troops, vi, 359; map of neutral territory, x, 3; Afghan boundary, x, 2, 4; xii, 8, 309; map, x, 8, 497; history of the question, ix, 4; x, 1; frontier negotiation, xii, 8.  
 Africa, i, 8; ii, 7; iii, 7; iv, 14; v, 9; vi, 4; dispute of England and Germany in, ix, 362-365; x, 119, 395, 415, 459; French annexation in eastern, ix, 339; Italian, x, 504; xii, 304; Portuguese claims in, xi, 371; French, xi, 374; religious institutions in, x, 316.  
 Africa, Central, exploration of, see Geographical, etc., in every volume, and ix, 165, 171; treatment of travelers in, iv, 401, 402, 406, 407; customs, iv, 403, 404; extermination of a tribe, iv, 407; interior sea, ix, 315.  
 Afridis, hostilities by, ii, 394.  
 Afrikander Bond, the, x, 135.  
 Agaricine, vii, 88.  
 Agassiz glacier, ix, 35.  
 Agassiz, Louis, glacier theory, x, 407.  
 Agates, ix, 790; Brazilian, ix, 790.  
 Agiar, Antonio Augusto, obit., 567.  
 Agoult, Countess d', sketch, i, 9.  
 Agrarian agitations in Wales, xi, 404; in Russia, 791.  
 Agricultural wheel, xi, 42.  
 Agriculture, i, 10; ii, 8; iii, 7; v, 10; percentage of cultivated lands in various countries, ii, 3; department of, in N. C., ii, 573; sugar in Minn., ii, 523; in Miss., iii, 574; wheat weighing and inspection, iv, 623; facilities in N. C., iv, 690; decline of, in England, vii, 1; experiment station, vii, 511.  
 Ahmed el Hedday, ix, 299.  
 Ahmed el Hoda, ix, 299.  
 Ahmed Mukhtar Pasha, xii, 242.  
 Ahmed Vefyk Pasha, sketch, ii, 11.  
 Abn, Prof., x, 191.  
 Ahrens, C. D., ix, 517.

- Aigan, J., obit., iii, 681.  
 Aigner, Joseph, obit., xi, 708.  
 Aiken, David W., obit., xii, 567.  
 Aiken, F., obit., iii, 681.  
 Aiken, William, obit., xii, 567.  
 Ain Quadis, site of Kadesh-Barnea, ix, 27.  
 Ainsworth, W. H., obit., vii, 644.  
 Air-thermometer, vii, 92.  
 Aird, Thomas, sketch, i, 14.  
 Airy, G. B., observations, vi, 89.  
 Aitken, John, on fogs, v, 275; dew, xi, 541.  
 Aizpuruz, Gen., x, 179.  
 Akerman, A. T., obit., v, 587.  
 Akerson, Garret, Jr., obit., xi, 708.  
 Akhoond of Swat, obit., iii, 648.  
 Akkas, the, vi, 4.  
 Akmin, inscribed tablet at, xi, 29.  
 Aksakoff, Ivan Sergervich, obit., xi, 708.  
 Aktapa, x, 8, 10; view of, 17.  
 Aktcha, district of, x, 4, 8.  
 Alabama, government, statistics, etc., in every volume; Department of Agriculture, viii, 2; tax law, viii, 2; Treasurer absconded, viii, 8; lumber industry, ix, 7; coal in, ix, 7; Confederate monument in Montgomery, xi, 8; view of Capitol, ii, 12; education in, ii, 12.  
 Alabama claims, the, x, 436.  
 Alarms, electric, ix, 309.  
 Alaska, iv, 24; map, iv, 25; people, v, 801; need of government, v, 648; statistics, vi, 9; fur-seal industry, vii, 6; volcanoes, viii, 287; territorial government, ix, 10; x, 399, 765; xi, 380, 826; expedition to, xii, 814; gold in, xii, 779.  
 Alatorre, Gen., x, 466.  
 Albanian League, the, against surrender of territory, v, 687, 688; vi, 842; opposition to Montenegro, v, 542; viii, 549; map of Albania, i, 751; disturbances in, ix, 764; x, 752.  
 Albany, Capitol at, iv, 671; vi, 658; vii, 614; viii, 570, 575; xi, 159; bi-centennial of, xi, 8; städt huis, illustration, xi, 8; old Dutch church, illustration, xi, 11; flag, illustration, xi, 11.  
 Alberger, F. A., obit., ii, 574.  
 Alberi, E., obit., iii, 649.  
 Albert, J. S., obit., v, 588.  
 Albert, Prince of Prussia, made Regent of Brunswick, x, 418.  
 Albert, W. J., obit., iv, 692.  
 Albert Lake, circumnavigated, i, 331; Stanley's journey, i, 333.  
 Alberta, Territory of, viii, 81; ix, 270.  
 Albertis, explorations by, i, 329.  
 Albrecht, W. E., sketch, i, 18.  
 Albuféra, Duc de, obit., ii, 591.  
 Albuminoids, in grain, v, 92.  
 Albumose, new forms of, ix, 121.  
 Alcohol, test for, i, 97; estimation of, in a mixture, ii, 92; freezing-point of mixtures, vi, 100; statistics, iv, 24; effect of, xii, 672.  
 Alden, Admiral J., sketch, ii, 13.  
 Alden, Joseph, obit., x, 645.  
 Aleko Pasha, sketch, iv, 26; x, 107.  
 Alencar, J. M. de, obit., ii, 591.  
 Alert, the, ix, 29; x, 133, 399.  
 Alessandria, illustration, i, 418.  
 Alexander I, of Bulgaria, sketch, iv, 26; viii, 74; x, 105 *et seq.*, 719, 727 *et seq.*, 752, 754; dethronement and abdication of, xi, 102.  
 Alexander II, of Russia, sketches, ii, 13; vi, 10; assassination, vi, 795; trial of assassins, vi, 796.  
 Alexander III, of Russia, accession, vi, 798; portrait, v, 661; coronation, viii, 704, 706.  
 Alexander VI, Pope, x, 140.  
 Alexander, Andrew J., obit., xii, 568.  
 Alexander, B. S., obit., iii, 681.  
 Alexander, E. B., sketch, vi, 9.  
 Alexander, Grand Duke of Russia, obit., ii, 591.  
 Alexander, H., Jr., obit., iii, 681.  
 Alexander Karageorgevitch, obit., x, 656.  
 Alexander, Prince of Orange, obit., ix, 614.  
 Alexander, W. L., obit., ix, 614.  
 Alexandria, Anglo-French squadron at, vii, 242; riots in, 244; bombardment of, 244; x, 310; British fleet at, vii, 568; indemnity commission, viii, 297; trials on charge of burning, 298.  
 Alexeyeff, M., ix, 121.  
 Alfalfa, cultivation of, xi, 631.  
 Alfaro, Gen. Eloy, ix, 281.  
 Alfonso XII, attempt to assassinate, v, 673; insult to, in France, viii, 397; x, 141; portrait, viii, 735; obit., x, 656.  
 Algae, ix, 94.  
 Algeria, i, 9, 19; map, i, 19; view of Algiers, 20; French Government in, ii, 14; shotts of, iii, 725; revolt, iv, 27; government, v, 285; incursions from Tunis, vi, 311; expropriation of lands, viii, 358; ix, 336; x, 381; xii, 298.  
 Algoma, ix, 266.  
 Alice, Grand Duchess of Hesse-Darmstadt, sketch, iii, 11.  
 Ali-el-Din Pasha, x, 818.

Alikhanoff, Lieut.-Col., x, 5, 7, 8, 9; sketch, 19.  
 Alima River, discovery of, iv, 401.  
 Alimentary canal, viii, 750.  
 Alison, Sir A., in Egypt, and portrait, vii, 251.  
 Alkali Desert, the, iv, 840.  
 Alkali metals, processes for reduction of, xi, 536.  
 Alkalimetry, indicators for, x, 154.  
 Alkaline springs, x, 595.  
 Alkaloid, volatile, iv, 137; vegetable, v, 89; of pitorie, vi, 98; a new, xi, 140.  
 Allain-Targé, x, 376.  
 Allaire, James, xii, 716.  
 Allard, Gen. N., obit., ii, 591.  
 Allegheny, xi, 159.  
 Allen, A. H., experiments, vi, 94; x, 161.  
 Allen, G. A., obit., iii, 631.  
 Allen, Lieut. H. J., x, 399.  
 Allen, Lewis, ix, 146.  
 Allen, Robert, obit., xi, 662.  
 Allen, William, sketch, iv, 27.  
 Allen, W. A., obit., vii, 635.  
 Allen, William Fernley, obit., ii, 592.  
 Allen, William F., obit., iii, 631.  
 Allentown, xii, 118.  
 Allezit Voran, Prince, x, 382.  
 Alliance electrical machine, iii, 275.  
 Alliance expedition, vi, 823, 824.  
 Alligator, illustration, i, 296.  
 Alloys, determination of, iv, 502; new, viii, 524; xii, 438. See also under Metallurgy.  
 Alluard, invention by, iii, 545.  
 Almaden mining company case, ix, 626.  
 Alma-Tadema, x, 359, 364; xi, 345; xii, 276, 277.  
 Almshouse, Tewksbury, viii, 517.  
 Almuqantar, the, x, 45; xii, 85.  
 Alpaneca, battle at, x, 467.  
 Alpine Mountain Club, the, ix, 538.  
 Alps, Tunnels of the, vii, 11; map, 12.  
 Alsace-Lorraine, map, i, 345; powers of Parliament, ii, 349; final regulation of government, iv, 438; incident, v, 208; government of, vii, 359; language question, viii, 397; ix, 340, 359; x, 380.  
 Alsina, Adolfo, sketch, i, 21.  
 Altar Mountain, ix, 542.  
 Altitudes, vi, 332.  
 Aluminum, wear of, ii, 500; atomic weight, vi, 93; production, vii, 531; manufacture, viii, 524; ix, 123, 476; boride of, xi, 140; reduction of, xi, 535; xii, 482; alloys, 481; plating and welding, 483; bronze, 483; steel, 483; red color of, 109.

Alveloz, x, 298.  
 Alvensleben, Gen., obit., ii, 592.  
 Alvord, H. E., xi, 47.  
 Alzog, J. B., obit., iii, 649.  
 Amalie, ex-Queen, obit., ii, 592.  
 Amaryllis, the, catamaran, ix, 116.  
 Amat, Thaddeus, obit., iii, 631.  
 Amat di San Filippo e Surso, Cardinal, sketch, iii, 11.  
 Amatongaland, xii, 93.  
 Amaxebes, tribe of the, x, 136.  
 Amazon, survey of the, iii, 365, 589; explorations near, iii, 365.  
 Amberly, Viscount, obit., i, 627.  
 Ambros, A. W., sketch, i, 21.  
 Ambukol, Africa, capture of, ix, 299.  
 Amenemhe, King, ix, 19, 21.  
 Am Ende, Max, x, 329.  
 Amenhotep III., x, 32.  
 Amenophis, x, 32.  
 America, i, 22; ii, 15; iii, 12; iv, 28; v, 15; struggle in Mexico, i, 22; ii, 15; iii, 12; wars in Central, i, 22; struggle in Colombia, i, 22; ii, 15; fisheries question between Great Britain and United States, ii, 15; iv, 15. See under Fishery Question; financial depression in Central and South, ii, 15; iii, 12. See also under names of the various countries.  
 America, the yacht, x, 788.  
 American Board, x, 194.  
 American country-seats, architecture of, xii, 361; illustrations, 362, 363, 364, 366, 367, 369, 370.  
 American Literature. See Literature.  
 American Party, organized in Pennsylvania, xii, 659.  
 American Water-Color Society exhibitions, etc. See under Fine Arts.  
 Americans expelled from Germany, x, 419.  
 Amerman, John, Jr., obit., i, 611.  
 Ames, Adelbert, i, 561.  
 Ames, E. R., sketch, iv, 29.  
 Ames, J., Jr., obit., iii, 631.  
 Ames, Oliver, obit., ii, 574.  
 Amici, Prof., ix, 90.  
 Amidon, experiments, viii, 99.  
 Aminof, explorations by, iii, 359.  
 Aminulla Khan, x, 7.  
 Ammonia, in saliva, vi, 100; in potable waters, vii, 91.  
 Amnesty, bill in Congress, i, 182-193; to Cubans, ii, 700; for press offenses, iii, 343, 344; in France, iv, 389; v, 284; return of exiles, v, 285.

- Amos, Sheldon, obit., xi, 708.  
 Amphiarus, temple of, xi, 84.  
 Amphill, O. R., obit., ix, 614.  
 Amr-el-Makasaf, revolt, viii, 299.  
 Amsterdam fair, viii, 824; riots in, xi, 607.  
 Exhibition. See Fine Arts.  
 Amsterdam, N. Y., xii, 119.  
 Amu-darja river, the, xii, 807.  
 Amusements, General Assembly on, v, 680.  
 Amylene, xii, 678.  
 Anaconda, illustration, i, 78.  
 Anaesthetic, a new local, ix, 271.  
 Analytic chemistry, viii, 117.  
 Anam, ix, 887; x, 24; map, i, 109; royal treasures in, x, 80; military campaign in, x, 24, 80; massacre of Christians in, x, 81; new king, x, 81; protectorate over, xi, 878; xii, 298. See Tonquin.  
 Anarchists, x, 418; xi, 12; executions of, in Austria, ix, 67; French, ix, 844; x, 879; Niederwald, plot of, ix, 858; expelled from Switzerland, 754; x, 746; trials in Austria, xii, 52; in Illinois, xii, 877; act to punish, xii, 874.  
 Ancient history, earliest date established in, ix, 18.  
 Anderson, A. A., explorer, iv, 404.  
 Anderson, Sir John, obit., xi, 708.  
 Anderson, Larz, obit., iii, 631.  
 Anderson, Louise, obit., ii, 574.  
 Anderson, Luther W., obit., xii, 568.  
 Anderson, R. H., obit., iv, 692.  
 Andersonville prison, i, 184-192.  
 Andes, the, explorations in, vi, 880; ix, 540-543; new pass over, viii, 128, 884.  
 Andkhol, x, 2, 8.  
 Andlaw, Comte d', xii, 294.  
 Andlaw, F. X. von, obit., i, 627.  
 Andorra, ix, 845.  
 Andouin, Victor, ix, 278; x, 804.  
 Andover Cases, the, xi, 206; xii, 146.  
 Andral, Gabriel, sketch, i, 22; investigations by, viii, 60.  
 Andrassy, Count, policy of, i, 887, 888, 710, 760; ii, 55, 57, 881; iii, 43, 44; resignation of, iv, 67; and Bismarck, iv, 67.  
 Andrassy, Countess, obit., i, 628.  
 Andrews, invention by, vi, 258.  
 Andrews, Stephen Pearl, obit., xi, 662.  
 Andromeda, new star in, x, 58.  
 Angela, Mother, obit., xi, 790.  
 Angelin, N. P., obit., i, 628.  
 Angelis, Cardinal, obit., ii, 592.  
 Anglican Churches, statistics, convocations, and societies of, in every volume; resolution in regard to Christian unity, i, 22; iv, 85; to the Athanasian creed, 23, 26; ii, 18; iv, 31; Society of the Holy Cross, ii, 21; missions in Ceylon, ii, 24; iii, 18; communication with the P. E. Church in the United States, ii, 27; controversy concerning cemeteries, i, 25; iii, 18; new rubric, iv, 81; mistakes in history, 81; case of Rev. S. F. Green, vi, 18; vii, 14; viii, 7; marriage regulations, x, 20; free seats in churches, 23; Congress of, x, 23; church reform, xi, 20, 21; xii, 18.  
 Anglican ritualistic controversy, i, 25; ii, 21; iii, 15; iv, 32, 34; vi, 18; vii, 14; viii, 6; ix, 11; xii, 11.  
 Anglo-Saxon coins, dug up in Rome, ix, 27.  
 Anglo-Turkish convention, failure of, xii, 241.  
 Angra Pequena, ix, 110, 862; x, 137, 895.  
 Aniline salts, new, iv, 182.  
 Animal chemistry, vii, 94; viii, 119.  
 Animal industry bureau, ix, 185.  
 Animal plants and plant animals, iv, 86.  
 Animals, societies for prevention of cruelty to, iv, 601.  
 Anisic acid, x, 298.  
 Annam. See Anam.  
 Annexations, intervention in cases of, vii, 626.  
 Ansdell, R., obit., x, 657.  
 Anson, A. H. A., obit., ii, 592.  
 Ansted, D. T., obit., v, 597.  
 Antelopes, x, 387.  
 Anthon, G. C., obit., ii, 574.  
 Anthony, Allard, ii, 575.  
 Anthony, H. B., obit., ix, 601.  
 Anthony, James, obit., i, 611.  
 Anthony, J. G., obit., ii, 575.  
 Anthony, S. B., x, 725.  
 Anthracene, ix, 124; x, 157.  
 Anthropology, vi, 19.  
 Antietam, battle of, x, 560.  
 Antifebrin, xi, 289.  
 Anti-ferment, an, ii, 97.  
 Anti-Mason party, the, v, 697.  
 Anti-Monopoly League, vi, 652.  
 Antimony-mines in Mexico, v, 18; in Portugal, xii, 485; reduction of ore, xii, 485.  
 Antinori expedition, iii, 862.  
 Antiochus Theos, ix, 18.  
 Antipodes island, xii, 812.  
 Antipyrine, ix, 271; x, 298.  
 Antiseptics, vii, 95, 815; viii, 116, 747; ix, 747; x, 800.  
 Antonelli, Cardinal, sketch, i, 27.

1

1





- see Planets, Minor, under *Astronomical Phenomena*, in every volume.
- Asthma, new drug for, ix, 272; x, 299.
- Astor, Charlotte A., obit., xii, 569.
- Astringents, strength of, i, 95.
- Astronomical cipher code, x, 55.
- Astronomical Journals, vii, 41.
- Astronomical Phenomena and Progress, in every volume.
- Astronomical Prizes. See under *Astronomical Phenomena*, in every volume.
- Astronomy, system of communicating discoveries in, ix, 55.
- Astrophotographic Congress, xii, 87.
- Asylum, right of, in Switzerland, vi, 829; in Spain, vii, 751.
- Atcheen, revolt in. See *Acheen*.
- Atchison, David R., obit., xi, 664.
- Athabasca, Territory of, viii, 81.
- Atheists, admission of, to Parliament, v, 384. See also *Oaths*.
- Athens, map of, and ports, i, 367; plan and view of the Acropolis, 370; ancient, i, 368; excavations, x, 86.
- Atkinson, E., suggestion of, for cotton exhibition, vi, 260.
- Atlanta, xi, 159; exposition at, see *Exposition*, vi, 260; to be State capital, iii, 370; capture of, x, 428.
- Atlantic City, xii, 119.
- Atlas dynamite, x, 843.
- Atlas Mountains, the, vi, 327.
- Atomic Theory, vi, 40; address on the growth of, vi, 91; ix, 118, 119.
- Atomic Weights, v, 86; vi, 92; vii, 89; viii, 117; ix, 126; x, 154; xii, 100, 110, 145.
- Attorney-General of Indiana, investigation as to fees of, iv, 499.
- Atwater, L. H., obit., viii, 586.
- Atwater, W. O., investigations by, vi, 671; x, 695, 696.
- Aubin, experiments by, viii, 120.
- Auburn, xi, 159.
- Auchietta, residence of, in Central Africa, iv, 405.
- Auckland, New Zealand, illustration, ii, 49.
- Audebert, explorations, viii, 387.
- Audenried, J. O., obit., v, 588.
- Audiphone, the, iv, 54.
- Auerbach, B., obit., vii, 644.
- Auersperg, Count, sketch, i, 51, 59.
- Augsburg, illustration, i, 346.
- August, Prince, x, 657.
- Augusta, xi, 160.
- Aurette de Paladines, Gen., obit., ii, 592.
- Aurists, new drug used by, ix, 271.
- Aurora Borealis, vii, 34; viii, 28; an artificial, viii, 383.
- Aurora Ring, the, 382.
- Ausschütz, experiments by, x, 157.
- Austin, new Capitol at, vii, 794.
- Australasia, explorations in, i, 329.
- Australasian Colonies, movement to consolidate, i, 58; vi, 48; viii, 30; ix, 56; x, 57; xi, 59; postal union, ix, 56; defenses, *ibid.*; annexation schemes, viii, 31; x, 59; silver discoveries, ix, 59; Federal Council, x, 57; importation of convicts, ix, 57, 58, 342; xii, 46. See also *Australia and Polynesia*.
- Australia, scheme of federation, see *Australasian Colonies*; gold mining, i, 53; animals of, illustrations, i, 54; ii, 51, 52; bottle-tree, illustration, i, 53; view of Melbourne post-office, iv, 57; of parliament buildings at Sydney, iv, 58; libraries in, ii, 50; prize offered for discovery of coal, ii, 51; Chinese immigration, ii, 51; ministerial changes, ii, 50, 52; iii, 41; exhibition at Sydney, ii, 52; iii, 55; v, 40; at Melbourne, iv, 56; v, 39; constitutional crisis in Victoria, vi, 45; sugar culture in Queensland, vii, 44; land act and mining-laws, ix, 58, 59; drought in, 59; silver ore, 476; annexation of Papua, 639; transportation of French convicts to Papua, 57, 58, 342; defenses, x, 60; xi, 59; xii, 45; contingent in Soudan, x, 60; Russian warfare, x, 61; American postal route, x, 61; railroads in, x, 327; Kimberley gold-fields, xi, 65; bill to prevent importation of convicts, xii, 46; volcanic eruption, xi, 66.
- Australia and Polynesia, statistics, government, etc., in every volume; atrocities in Feejee, i, 53; a Feejeean, illustration, ii, 53; view of Auckland, illustration, ii, 49; death of queens, i, 53; ii, 53; Tonga Islands, ii, 53; Samoa or Navigators' Islands, see *Samoa*; difficulty with Maoris in New Zealand, iv, 57; vi, 47; vii, 45; viii, 37; ix, 60; x, 66; xi, 66; missions and schools, iv, 58, 59; French annexation, v, 40; xi, 60; British, v, 47; xi, 60; German, x, 59; massacre by Christian natives, vi, 47; land system of New Zealand, vii, 46; labor-traffic in the Southern Pacific, x, 62; Germans in South Sea, xi, 60; colonial exhibition, xi, 60; massacre off the coast of New Guinea, xii, 48; annexation schemes, viii, 31; x, 58.
- Australian system of election, xii, 246.

- Austrian Electoral System, vii, 46.  
Austrian influence, Gladstone on, v, 334.  
Austro-Hungarian Monarchy, government, statistics, etc., in every volume; *Ansgleich* between Austria and Hungary, ii, 55, 56, 57; iii, 42; xii, 51; Galicia, ii, 59; the Poles, ii, 59; treaty of San Stefano, iii, 45; of Berlin, iv, 62; important conference, iv, 64; resignation of Count Andrassy and succession of Baron Haymerle, iv, 65; religious toleration, iv, 67; denominational schools, v, 44; conflict of nationalities, v, 44, 45; x, 72; xi, 73; Taaffe ministry, ix, 66; reconciliation with Russia, 68; labor troubles, x, 72; xi, 73; change of cabinet, xi, 72; fires and floods, i, 59; xi, 73; xii, 58; illustrations, i, 55, 58, 59; ii, 56, 57, 58; iii, 43. See Eastern Question.
- Autophone, x, 617.  
Antran, Joseph, obit., ii, 592.  
Auzoux, T. L. J., obit., v, 598.  
Avalanches in Switzerland, vi, 830; in Italy, ix, 416.  
Avenger, the, ix, 377.  
Avery, D. D., obit., iv, 692.  
Averysboro, battle of, x, 429.  
Avesta process, the, x, 580.  
Awdry, Sir J. W., obit., iii, 649.  
Axum, relics at, illustrations, ii, 2.  
Ayer, J. C., obit., iii, 631.  
Ayers, William Orville, obit., xii, 569.  
Ayob Khan, v, 4; vi, 2; defeat and flight, vi, 4.  
Aylesford, Earl of, obit., x, 657.  
Aymaras and tomb, illustration, ii, 71.  
Ayr, bridge of, illustration, i, 856.  
Ayrton, electric railway, viii, 678.  
Azotine, x, 843.  
Aztec Calendar Stone, the, viii, 586; illustration, ix, 18.  
Aztecs, relics of the, ix, 17, 18.
- Babbitt, Elijah, obit., xii, 570.  
Babcock, G. R., obit., i, 612.  
Babinet, invention by, v, 51.  
Babylon, inscriptions of ancient, ix, 18; Wolfe expedition, ix, 19; xi, 25.  
Bache, H. W., obit., iii, 632.  
Bacilli. See Micro-Organisms.  
Back, Sir G., sketch, iii, 46.  
Bac Le, engagement at, ix, 188; x, 25.  
Bacninh, capture of, ix, 187.  
Bacon, George, obit., i, 612.  
Bacon, Leonard, sketch, vi, 51.
- Bacteria, vi, 669; ix, 98, 129, 496; x, 798, 800; xii, 679; relations of, with various gases, vi, 98. See also Germ Theory, and Tuberculosis, vii, 798; and Micro-Organisms.
- Badakshan, state of, x, 2; xi, 5.  
Baden-Baden, illustration, i, 847.  
Badger, George, obit., ii, 575.  
Badges, grand army, illustrations, xii, 329.  
Badghis, district of, x, 4, 6.  
Baer, K. E. von, sketch, i, 60, 322.  
Baffin Land, researches in, x, 898.  
Baghot, Walter, obit., ii, 592.  
Baggataway, game of, x, 518.  
Bagley, G. R., obit., i, 612.  
Bagley, James, obit., i, 612.  
Bagley, J. J., sketch, vi, 52.  
Bagration-Mouchranaky, Prince, obit., i, 628.  
Bags, paper, xi, 734.  
Bahadoor, Sir J., obit., ii, 592.  
Bahamas. See West Indies.  
Bahtiares, revolt of, vii, 681.  
Bailey, G. A., obit., i, 575.  
Bailey, Theodorus, sketch, i, 59.  
Bain, Alexander, invention by, x, 615; obit., ii, 592.  
Baird, Matthew, obit., ii, 575.  
Baird, Spencer F., sketch and portrait, xii, 54.  
Baireuth, Bavaria, illustration, i, 573.  
Baiter, J. G., obit., ii, 598.  
Baker, B., x, 47.  
Baker, Rev. G., obit., ii, 575.  
Baker, Sir H. W., obit., ii, 598.  
Baker, N. B., obit., i, 612.  
Baker, Sir Samuel, x, 809.  
Baker, Thomas, obit., i, 628.  
Baker Pasha, Valentine, viii, 295-302; ix, 292; destruction of his army, ix, 298; obit., xii, 621.  
Baker, William Bliss, prize to, x, 861; obit., xi, 664.  
Baker, William M., obit., viii, 586.  
Bakeries, ix, 2.  
Baking-powders, alum in, iii, 85.  
Bakunin, Michael, sketch, i, 60.  
Bala Murghab, x, 4, 5, 8.  
Balard, A. J., sketch, i, 61.  
Balch, Thomas, obit., ii, 575.  
Baldasseroni, G., sketch, i, 61.  
Bald-knobbers, xii, 516.  
Baldwin, Jesse G., obit., xii, 570.  
Baldwin, John Abeel, obit., xi, 664.  
Baldwin, Judge C., obit., i, 612.  
Baldwin, Prof., obit., xii, 622.  
Baldwin, Samuel, obit., xii, 570.

Balkan provinces, the, ix, 64; religious movement in, 279; x, 107 *et seq.*; 726, 727; Slav sentiment in, 719.  
 Ball, I. W., obit., v, 588.  
 Ball, R. S., ix, 45.  
 Ball, Thomas, xi, 847.  
 Ballantine, J., obit., ii, 598.  
 Ballantine, William, obit., xii, 622.  
 Ballay, Dr., explorations by, ii, 238, 384; iv, 401.  
 Balloons, navigable, ix, 72; reconnaissance in a, x, 25; voyage in, by Burnaby, 115.  
 Ballot, law to prescribe form for, iv, 17, 18; antiquity of the, xii, 244; boxes, xii, 245.  
 Ballou, G. O., obit., i, 612.  
 Balmain, invention by, v, 98.  
 Balsam copaiba, illustration, i, 77.  
 Baltes, Peter Joseph, obit., xi, 66.  
 Baltic provinces, i, 71; Russification in, x, 719.  
 Baltimore, xi, 160; illustration, i, 505; anniversary, v, 494.  
 Bamangwato, description, iv, 408.  
 Bamboo, xi, 74.  
 Bamian, statues at, xi, 35; illustration, 86.  
 Bananas, culture of, viii, 588.  
 Banded Bandicot, the, illustration, i, 54.  
 Bandeiro, Dr. R., x, 298.  
 Bandel, J. E. von, sketch, i, 61.  
 Bandelier's investigations, ix, 16.  
 Bandon, Earl of, obit., ii, 593.  
 Bangs, G. F., obit., ii, 575.  
 Bangs, Francis N., x, 645.  
 Banian-tree, the, illustration, i, 401.  
 Bank associations, national, xi, 264.  
 Bank in Toronto, illustration, xii, 131.  
 Bankruptcy bill, English, viii, 410.  
 Banks, Gen. Nathaniel P., x, 426.  
 Banks, decision on national, i, 506; laws for, in Massachusetts, i, 508; vi, 536; of Tennessee, decision on, ii, 711; failure of the City, of Glasgow, iv, 175; savings, in Rhode Island, iv, 769; fees of receivers in Connecticut, v, 195; sale and taxation of shares of national, vi, 52; United States, vi, 126; vii, 392; taxation of, in Delaware, vi, 205; in Argentine Republic, vii, 25, 26; of States, vii, 392; of Canada, viii, 84; in Colombia, viii, 139; statistics of 1883, viii, 332; circulation in United States, ix, 216; condition of national, ix, 780; taxation, x, 621; co-operative, xi, 528.  
 Baptists, statistics, associations, sects of, etc., in every volume.  
 Bara, Soudan, battle at, x, 318.

Baraguay d'Hilliers, sketch, iii, 53.  
 Baralong territory, troubles in, ix, 115.  
 Barbadoes, riots in, i, 366; xii, 800.  
 Barbed-wire fence, vi, 266.  
 Barbour, J. M., obit., vi, 678.  
 Barca, F., obit., viii, 597.  
 Barcelona, riots in, vii, 752.  
 Bard, S., obit., iii, 632.  
 Bardoux, Agénor, sketch, ii, 320.  
 Bardsley, Sir J. L., obit., i, 628.  
 Bareiro, Don Candido, iii, 677.  
 Barff, Prof., discovery by, vii, 315; invention by, vii, 538.  
 Barger, Father, obit., ii, 575.  
 Bargue, Charles, xi, 347.  
 Barham, Richard H. D., obit., xi, 709.  
 Barili, Antonio, sketch, i, 68.  
 Barillas, Gen., x, 466.  
 Barilochi Pass, Andes, viii, 385.  
 Baring, Sir Evelyn, ix, 285, 286, 289, 299; x, 495.  
 Baringo, Lake, ix, 347.  
 Barker, G. W., obit., iii, 632.  
 Barker, Prof., observations by, iii, 34.  
 Barksdale, H., obit., vi, 678.  
 Barlow, S. B., obit., i, 612.  
 Barnard, E. E., discoveries by, vi, 39; vii, 38; ix, 52; x, 51; xi, 57; xii, 45.  
 Barnard, J. G., sketch, vii, 65.  
 Barnes, J. K., obit., viii, 586.  
 Barnewall, Robert A., obit., xii, 570.  
 Barni, J. R., obit., iii, 649.  
 Barometers, water-, v, 51.  
 Barrett, Com., obit., v, 598.  
 Barrett, J. W., experiments by, x, 690; xii, 674.  
 Barrett, Rev. M., obit., i, 612.  
 Barrett, W. F., experiments by, xii, 480.  
 Barrière, P. de la, ix, 57, 342.  
 Barrière, Théodore, obit., ii, 593.  
 Barrios, J. R., iii, 415; attempt on the life of, ix, 385; union decree of, x, 464, 465; his death, 466.  
 Barrot, F., obit., viii, 597.  
 Barrow, Sir G., obit., i, 628.  
 Barrow, Percy Harry Stanley, obit., xi, 709.  
 Barrundia, Martin, i, 89.  
 Barry, E. M., obit., v, 598.  
 Barry, G. R., obit., i, 612.  
 Barry, W. F., sketch, iv, 73.  
 Barth, Baron, death of, ii, 330.  
 Barth, J. B. P., obit., ii, 593.  
 Bartholdi's statue, x, 367, 642; xi, 323, 649.  
 Bartlett, F. W., invention by, i, 91.

- Bartlett, J. H., discovery, v, 288.  
 Bartlett, John Russell, obit., xi, 664.  
 Bartlett, Washington, obit., xii, 570.  
 Bartlett, W. F., obit., i, 612.  
 Bartley, Mrs. Judge, obit., i, 612.  
 Bartol, James Le, obit., xii, 571.  
 Barton, Clara, vii, 718.  
 Bartow, Morey H., obit., xii, 571.  
 Barus, Carl, experiments of, xii, 479.  
 Bary, E. von, death of, ii, 829.  
 Base, a new, iv, 134; xi, 140.  
 Base-ball, x, 77; original rules, 77; theory of, 78; professional, 79; grand tours, 79; how to learn, 79; rules, 80; materials, 81; championship records, 83; noteworthy events, 83; diagrams, 79, 81, 82.  
 Bashford, C., obit., iii, 632.  
 Basque provinces, i, 730.  
 Basques, illustration, i, 730.  
 Bassamas, tribe of the, v, 291.  
 Basset-hound, the, illustration, ix, 258.  
 Bassophone, the, x, 617.  
 Bastian, Adolf, ix, 277.  
 Bastian, H. Charleton, on the germ theory, iii, 390; on the muscular sense, xii, 672.  
 Bastide, J., obit., iv, 698.  
 Bastile celebration, v, 285; illustration, the Bastile, i, 318.  
 Basutos, the, v, 80; law to disarm, v, 81; vi, 85; revolt of, v, 81; vi, 86; vii, 84; history and separation from Cape Colony, viii, 89; ix, 111; x, 83; effect of their conflict with the Cape government, 84; spread of drunkenness among, 84.  
 Batanga river, x, 898.  
 Bathie, Anselm Polycarpe, obit., xii, 622.  
 Bates, Eli, xii, 280.  
 Bates College, illustration, i, 500.  
 Bath, England, illustration, i, 859.  
 Baths among various nations, v, 354; bath-rooms, v, 362.  
 Bathurst, Earl, obit., iii, 649.  
 Batoche, engagement at, x, 127.  
 Batoum, xi, 792.  
 Battenberg, Prince, vii, 73.  
 Battle, W. H., sketch, iv, 74.  
 Battleford, x, 127, 128.  
 Baudet, Paul, obit., ii, 593.  
 Baudissin, W. H. F. K., obit., iii, 649.  
 Baudot, invention by, vi, 256.  
 Baudry, Paul, obit., xi, 709; exhibition of his works, xi, 344.  
 Bauer, Caroline, obit., ii, 593.  
 Bauer, Clara, sketch, i, 68.  
 Baumstark, A., obit., i, 628.  
 Bausch, E., ix, 506, 515, 518.  
 Bavaria, view of Baireuth, i, 573; King Ludwig of, xi, 392; Otto, 392; regent, 392.  
 Baviera, J., Cervera, xi, 374.  
 Baxendell, discoveries, v, 85, 86.  
 Baxter, John, obit., xi, 665.  
 Baxter, S., obit., iii, 632.  
 Bayard, Émile, x, 358, 368.  
 Bayard, James A., sketch, v, 52.  
 Bayard, Thomas F., sketch and portrait, x, 756.  
 Bayard mutiny, the, x, 173.  
 Bayer, H. J. P. von, sketch, i, 69.  
 Bayer, Prof., discovery by, vi, 423.  
 Bayley, J. R., sketch, ii, 66.  
 Bayne, Herbert Andrew, obit., xi, 709.  
 Baynes, Thomas Spencer, obit., xii, 623.  
 Bayonne, illustration, i, 317.  
 Beach, E. J., obit., ii, 575.  
 Beach, John Sheldon, obit., xii, 571.  
 Beach, Sir Michael Hicks, Bart., x, 447; sketch, 449; x, 440; xi, 399.  
 Beach, William A., obit., ix, 602.  
 Beach, William Morrow, obit., xii, 571.  
 Beaconsfield. See Disraeli.  
 Beamer and Clarke, experiments by, iv, 132.  
 Bear, voyage of the, ix, 29.  
 Beard, George M., obit., viii, 586; ix, 554.  
 Bears, x, 387.  
 Beasley, Joseph, invention, x, 575.  
 Beaton, Ruth, obit., ii, 575.  
 Beatrice Gulf, iii, 362.  
 Beaubien, J. C., obit., ii, 593.  
 Beaume, J., obit., x, 657.  
 Beaumont's air-engine, vi, 513; perforator, vii, 281; viii, 31.  
 Beaunis, experiments by, viii, 635.  
 Beauregard, A. T., obit., vi, 679.  
 Beauregard, P. G. T., x, 424.  
 Beaver, James A., sketch, vii, 677.  
 Bebel, ix, 360; xi, 389.  
 Bed, musical, x, 618.  
 Beccari, O., explorations of, i, 330; iv, 408.  
 Bechamp, investigations, viii, 636.  
 Bechterew, experiments, viii, 634.  
 Bechuanaland, ix, 111, 112, 118; xi, 134; war in, viii, 92; x, 85; the Rhodes settlement, x, 86; Warren expedition, x, 87; trial of Niekirk, x, 87; conflict of authority, x, 88. See also Cape Colony.  
 Beck, J. T. von, obit., iii, 650.  
 Becker, G. F., x, 404; xi, 588.  
 Becker, H., obit., x, 657.  
 Becker, K. F., obit., ii, 593.

Beckmann, J. H., obit., iii, 650.  
 Beckwith, T., obit., iii, 632.  
 Beekyx, Father P. J., obit., xi, 790; xii, 623.  
 Béclard, Jules, obit., xii, 623.  
 Becquerel, A. C., sketch, iii, 53, 650.  
 Becquerel, A. E., observations by, xii, 110.  
 Bedford, H. M., obit., v, 588.  
 Bee, vision of the honey, xii, 672.  
 Beecher, Catherine E., sketch, iii, 53.  
 Beecher, Henry Ward, sketch and portrait, xii, 60.  
 Beegerite, vi, 98.  
 Beekman, J. W., obit., ii, 575.  
 Beer, tax on, vii, 65.  
 Beer, M., observations of, xi, 585.  
 Beers, Dr. George W., x, 519.  
 Beers, Henry Newell, obit., xii, 571.  
 Beethoven, xi, 479.  
 Beet-sugar, i, 94; new product, iv, 75; in Delaware, iv, 811; in Maine, iv, 578; in Maryland, iv, 590.  
 Behm, E., obit., ix, 614.  
 Behring Sea, British schooners seized in, xii, 285.  
 Behring Strait, current, vi, 325.  
 Belcher, Sir E., obit., ii, 593.  
 Belfast, riots in, xi, 403.  
 Belgian free churches, iii, 57.  
 Belgium, statistics, elections, etc., in every volume; struggle between Catholics and Liberals, i, 7; ii, 68; on the question of secular education, iv, 77; v, 58, 56; ix, 78; xi, 84; electoral law, i, 71; changes of cabinet, iii, 56; ix, 79; church funds, vi, 58; viii, 57; controversy between moderate clericals and Ultramontanes, vi, 59; international congresses in, i, 72; ii, 69; v, 55; x, 91; expositions, v, 55; x, 91; labor-riots, xi, 81; xii, 66; cattle duties, xii, 66; free churches of, iii, 57; connection with the Congo State, x, 91.  
 Belgrade, illustration, i, 756.  
 Belknap, William W., impeachment of, i, 42, 203, 686.  
 Bell, A. Graham, inventions and experiments by, i, 740; vi, 239, 257, 787; ix, 45, 807, 808; litigation concerning telephone patent, xii, 649.  
 Bell, Charles, ix, 476.  
 Bell, O. N., xi, 23.  
 Bell, G. L., invention by, i, 522.  
 Bell, King, x, 121.  
 Bell, Sir G., obit., ii, 594.  
 Bell, T., obit., v, 598.

Bellegarde, Augustus von, obit., xi, 709; funeral of, xi, 811.  
 Belli, invention by, iii, 545.  
 Belly, L. A. A., obit., ii, 594.  
 Belmont, battle at, x, 423.  
 Beloochistan, rebellion in, i, 73; ii, 69; map, i, 7; British occupation of Quetta, ii, 70.  
 Belshaw, J., invention, viii, 466.  
 Benaol, Princess, ix, 460.  
 Benedek, L. von, obit., vi, 690.  
 Benedict, E. C., sketch, v, 56.  
 Benedict, Mrs. J. T., obit., ii, 575.  
 Benedict, Sir Julius, sketch and portrait, x, 92.  
 Benedict, St., anniversary, v, 658.  
 Bengal, x, 495.  
 Bengal Tenancy Act, x, 445, 528.  
 Benham, H. W., obit., ix, 602.  
 Beni river, exploration of, vi, 832.  
 Benic, Rear-Admiral, obit., i, 629.  
 Benjamin, Judah P., obit., ix, 602.  
 Benjamin, Samuel Nicoll, obit., xi, 665.  
 Benker and Lasne, experiments by, viii, 115.  
 Bennet, Orlando, obit., v, 588.  
 Bennett, Dr. Hughes, x, 742.  
 Bennett, J. G., expedition, vi, 322.  
 Bennett, Nathaniel, obit., xi, 665.  
 Bennigsen, retirement of, viii, 895.  
 Bennington centennial, ii, 757.  
 Benomar, Count, x, 143.  
 Benson, E. W., sketch, portrait, viii, 57.  
 Benson, S. P., obit., i, 612.  
 Bent, Theodore, xi, 84; xii, 22.  
 Bentinck, H. J. W., obit., iii, 650.  
 Benton, J. G., obit., vi, 679.  
 Benue river, exploration of, v, 290; ix, 848; x, 893.  
 Benzoic acid, v, 89.  
 Benzoyl, discovery of, ix, 809.  
 Berardi, Cardinal, sketch, iii, 57.  
 Beraud, Jean, x, 358.  
 Berber, fall of, ix, 297; taken by Gordon, 301.  
 Berbera, province of, attempt to take, ix, 296.  
 Berdellé, J. B., obit., i, 629.  
 Berden, H., invention, ii, 626.  
 Beresford, M., obit., i, 629.  
 Beresford, Lord, in Egypt, and portrait, vii, 248; x, 814, 815.  
 Beresford-Hope, A. J. B., obit., xii, 623.  
 Beressowaki, xi, 877.  
 Berg, M., x, 291, 292, 293; trial of, xi, 285; xii, 222.  
 Berghash, Seyyed Mahommed, obit., xi, 709.  
 Berglund, experiments, viii, 113.  
 Bergmann, Carl, obit., i, 613, 629.

- Bering's inland, xi, 375.  
 Berlier, invention by, vii, 741.  
 Berlin, Treaty of, iii, 292; Gladstone on, iii, 402; dissatisfaction in Greece, iii, 409; in Hungary, iii, 425; in Italy, iii, 458; in territory ceded to Montenegro, iii, 586; in Roumania, iii, 739; territory gained by Russia, iii, 741; dissatisfaction in Russia, iii, 744; in the Turkish provinces, iii, 795, 796; in Bulgaria, ix, 733; discussion in Austria, iv, 62; indistinctness as to Montenegro, iv, 648; measures to enforce, v, 543, 687, 688; as to Greek boundaries, vi, 374; relations of Germany and Russia after, vii, 353; difficulty in carrying out, viii, 550; refusal of England to recognize, x, 758; conference, ix, 170; x, 190.  
 Bermudas. See West Indies.  
 Bernaert ministry, the, ix, 80.  
 Bernard affair, the, vii, 57, 694.  
 Bernard, Claude, sketch, iii, 57.  
 Bernhardt, Theodor, obit., xii, 624.  
 Bernhardt, Sarah, sketch, v, 57.  
 Bernstein, A., lamp of, viii, 308; ix, 305.  
 Beroud, Louis, x, 367.  
 Berri-berri, disease in Acheen, xi, 608.  
 Berrien, John M., obit., viii, 586.  
 Berry, J. H., sketch, vii, 30.  
 Berry, John M., iii, 567.  
 Berry, R. M., expedition, vi, 323.  
 Bert, Paul, appointment, vii, 324; attack on the church, 324, 325; ix, 662; x, 380; obit., xi, 709.  
 Berthaut, Gen., obit., vi, 691.  
 Berthelot, P. E., experiments by, i, 92; iii, 98, 725; x, 151, 154, 343; xii, 101.  
 Bertin, L. A., obit., ii, 594.  
 Bertini, H., obit., i, 629.  
 Bertrand, E., ix, 506, 515.  
 Bertrand, Felix, sketch, i, 74.  
 Beryl, analysis of, x, 156.  
 Beryllium, atomic weight, vii, 89.  
 Berzelius, ix, 808.  
 Besnard, Paul A., x, 363; xii, 275.  
 Bessarabia, retrocession of, to Russia, iii, 739, 741, 742; viii, 697.  
 Bessemer steel process, ii, 408; iii, 128; vii, 580; in United States, vii, 581; applied to copper, viii, 522.  
 Beta, Heinrich, obit., i, 629.  
 Beta Lyra, spectrum of, x, 53.  
 Bethells, Christopher, ix, 113.  
 Bethmann-Hollweg, obit., ii, 594.  
 Betts, Charles Wyllys, obit., xii, 571.  
 Betts, W., obit., ix, 603.  
 Beust, Friedrich Ferdinand, obit., xi, 84.  
 Bevan, Theodore F., explorations by, xii, 311.  
 Bezold, W. von, xi, 539.  
 Bhamo, district of, x, 115.  
 Bhotan, insurrection, x, 491, 499.  
 Bianchi, death of, x, 394.  
 Bible Christians, ii, 510; xi, 502.  
 Bible societies, xii, 67.  
 Bible, the, Japanese translation, iii, 463; into Oriental languages, iii, 586; heretical views on inspiration of, iii, 698; Brahman opinion of, iv, 91; case of Robertson Smith, vi, 760, 769; of W. L. MacFarlane, vi, 769; Colenso on the Pentateuch, viii, 185; places of, identified, ix, 27; revision of the English version, x, 92; previous translations, x, 92, 93; list of translators, x, 94, 95, 96.  
 Bibliophile Jacob, ix, 617.  
 Bibra, Baron E. von, obit., iii, 650.  
 Bichloride of mercury and urea, x, 298.  
 Bichi, Prof., x, 158.  
 Bicker, Walter, obit., xi, 665.  
 Bickersteth, R., obit., ix, 614.  
 Bicycles, ix, 80; illustrations, x, 80-84.  
 Biddlecomb, Sir G., obit., iii, 650.  
 Bidwell, Shelford, x, 539.  
 Bidwell, W. H., obit., vi, 679.  
 Big Bear, Chief, x, 129.  
 Bigelow, Erastus B., invention, viii, 94.  
 Bigelow, G. T., sketch, iii, 58.  
 Bigelow, Jacob, sketch, iv, 78.  
 Biggs, Judge A., sketch, iii, 58.  
 Bigler, William, obit., v, 589.  
 Bignell, F. H., ix, 349.  
 Bigourdan, M., xii, 45.  
 Billings, Josh, x, 654.  
 Billot, M., x, 27.  
 Bimbia, ix, 365.  
 Bimetallic system, see Currency, ii, 285; vi, 60, 287; Latin Union, viii, 419; x, 275.  
 Bindi, Archbishop, obit., i, 629.  
 Bindseil, H. E., obit., i, 629.  
 Bingham, Samuel, obit., i, 613.  
 Binghamton, xi, 162; asylum, v, 572.  
 Binnie, William, obit., xi, 710.  
 Binz and Schulz, theory of arsenical poisoning, v, 91.  
 Biological laboratories, x, 46; work of Dr. Carpenter, x, 144, 145.  
 Biondelli, Bernardino, obit., xi, 710.  
 Birch, De Burgh, xii, 678.  
 Birch, C. B., xi, 345.  
 Bird, W. A., obit., iii, 632.

Bird organs, x, 618.  
 Bird's Nest, edible, xii, 676.  
 Birds, songs of, xi, 85; vocal apparatus of, illustrations, xi, 90.  
 Birmingham, England, illustration, i, 862.  
 Birmingham, Mr., observations, iii, 38.  
 Biscacho, the, ix, 790.  
 Bishop, Anna, obit., ix, 608.  
 Bishop, Victor, obit., i, 618.  
 Bishopric of Grahamstown, vii, 21.  
 Bishopricks, in England, iii, 408.  
 Bishops, colonial jurisdiction of, ii, 24; consecration of, ii, 27; liability of church property for debts of, vi, 798; viii, 673; right of nominating, viii, 695.  
 Bishop's Ring, x, 582; xi, 546.  
 Bismarok, Prince, contest with Liberals, i, 344; resignation offered by, ii, 850; v, 320; and Socialists, iii, 380; negotiations with Papal Nuncio, iii, 382; end of alliance with Liberals, iv, 436, 740; and the German Parliament, vi, 338; defeats of, vi, 344; state socialism of, viii, 393; influence, viii, 397; reconciliation of Russia and Austria, ix, 64; the state council and, ix, 356; not a letter-carrier, ix, 359; his party, ix, 360; his concessions to the Pope, ix, 390; the Lasker affair, see Lasker, E.; his theory of effective jurisdiction, x, 143; x, 120 *et seq.*; xi, 388, 389, 390. See also Germany in each volume.  
 Bismarok Archipelago, x, 681.  
 Bit Karziyabku, city of, ix, 18.  
 Bitter, K. H., sketch, iv, 740.  
 Bixby, J. M., obit., i, 613.  
 Bizzardi, Cardinal, obit., ii, 594.  
 Bizzozero, experiments, viii, 633.  
 Bjerknæs, experiments, vi, 404.  
 Bjorkmann, invention by, x, 345.  
 Björnson, B., in politics, vi, 827; on the King's veto, vii, 772.  
 Blaauw Krantz bridge, x, 329; illustration, x, 330.  
 Black, Jeremiah S., sketch, viii, 58.  
 Black Death, the, iv, 730.  
 Black Flags, viii, 767; ix, 137; x, 24, 27, 30; massacre by, x, 31.  
 Black Forest, musical inventions of the, x, 612, 618.  
 Black Friday, x, 435.  
 Black Hills mines, ii, 245; ix, 240; xi, 230.  
 Blackburn, Luke Pryor, iv, 541; obit., xii, 572.  
 Black-mailing, act against, iii, 619.  
 Blackwood, J., obit., iv, 608.  
 Bladder, operations on the, ix, 748.

Blaine, J. G., sketches, iv, 78, and ix, 86; portrait, vi, 788; official papers, see Peru, Chili, etc., and Panama Canal; oration on Garfield, vii, 127.  
 Blair, Barnard, obit., v, 589.  
 Blair, Francis P., sketch, i, 74.  
 Blair, Montgomery, obit., viii, 587.  
 Blair, Mrs., obit., ii, 575.  
 Blake, E., sketch, viii, 59.  
 Blake, Eli Whitney, obit., xi, 665.  
 Blake, James, experiments by, vi, 99; vii, 89; ix, 659; xii, 102.  
 Blake, Samuel H., obit., xii, 572.  
 Blake W. P., ix, 475.  
 Blakesley, J. W., obit., x, 657.  
 Blanc, C., obit., vii, 645.  
 Blanc, Louis, sketch, vii, 67.  
 Blanchard, J. W., obit., ii, 575.  
 Blanchard, Wyatt, obit., ii, 575.  
 Blanford, Henry, xii, 490.  
 Blanford, W. T., ix, 46; xi, 543.  
 Blanqui, A., sketch, vi, 65.  
 Blas and Miest, experiments by, viii, 524.  
 Blaschko, Dr., experiments by, x, 689; xii, 672.  
 Blashfield, E. H., ix, 245.  
 Blasphemy, trial for, viii, 418.  
 Blasting powders, x, 343.  
 Blatchford, S., vii, 807.  
 Blatta, fossil, illustration, ix, 368.  
 Bleaching, agent in, viii, 115; improved process for, x, 159.  
 Bledsoe, Dr. A. T., obit., ii, 575.  
 Blenheim Palace sale of pictures, xi, 345.  
 Bleuler and Lehmann, experiments by, vi, 400.  
 Blind, education. See Howe, i, 384.  
 Bliss, P. C., obit., x, 646.  
 Blitz, Signor, obit., ii, 575.  
 Bloch, M., ix, 657.  
 Block, Lieut., survey of Greenland, xii, 316.  
 Blodgett, F., obit., ii, 576.  
 Bloemhof, district of, ix, 111.  
 Blood, pressure of the, vi, 748; mechanism of arrest of hæmorrhage, viii, 60; discoveries concerning, viii, 632; ix, 655; circulation of, xi, 757; temperature of, xii, 673; specific gravity of, xii, 673; color of, xii, 673.  
 Bloodhound, the, ix, 259.  
 Bloss, George, M. D., obit., i, 618.  
 Bloxam, Charles L., xii, 109.  
 Blue Licks, anniversary, vii, 458.  
 Blue Mountain peak, xii, 314.  
 Blue Nile, the revolt on, viii, 299.  
 Bluethner, J., improvements of the piano by, i, 517.

Blum, Robert, ix, 245.  
 Blumenburg, Maj. L., obit., i, 613.  
 Blunt, G. W., obit., iii, 632.  
 Blunt, J. H., obit., ix, 614.  
 Blunt, Wilfred, xii, 842.  
 Blunt's study of Islam, vi, 440.  
 Bluntschli, J. G., sketch, vi, 65.  
 Boardman, G. S., obit., ii, 576.  
 Boardman, H. A., obit., v, 589.  
 Boas, F., x, 398.  
 Bob White, the, x, 389.  
 Boca Tigris, illustration, i, 110.  
 Bochfontaine, experiments by, viii, 634.  
 Bochoitz, Countess, death, v, 659.  
 Bocklish, Dr., xii, 679.  
 Bodisco, W., obit., iii, 632.  
 Bodwell, Joseph R., obit., xii, 572.  
 Boeresco, B., obit., viii, 597.  
 Boers, war with the, vi, 87, 88; viii, 89, 92; ix, 112, 113; x, 86; disputed grant to, x, 186.  
 Boggs, Frank M., prize to, x, 867.  
 Bogotá, xi, 192; illustration, i, 115.  
 Bogy, L. V., sketch, ii, 71.  
 Boh-cho, chief, xii, 81.  
 Bohemia, conflict of nationalities in, v, 45; language war in, ix, 67; peasants of, illustration, i, 58.  
 Böhm, Dr., x, 393, 394.  
 Böhmer, experiments by, viii, 112.  
 Bohn, Henry G., obit., ix, 614.  
 Bohnstedt, L., obit., x, 657.  
 Boisbaudran, L. de, metal discovered by, i, 524; experiments by, iii, 89; vi, 41; ix, 119; x, 578; xii, 101, 109, 110.  
 Bokhara, x, 98; Russia in, x, 98; disturbances in, xi, 6.  
 Bolan Pass, the, secured to Great Britain, i, 74; occupation of Quetta, ii, 70; illustration, ii, 70.  
 Bolckow, H. W. F., obit., iii, 650.  
 Boldine, x, 298.  
 Bolingsoff, Catherine, obit., xii, 572.  
 Bolivar, Simon, statue of, x, 861.  
 Bolivia, in every volume but i; silver in, x, 99; cinchona, 99; cotton-tree, 100; new city and highway, 100; map, ii, 73; rebellion, ii, 72; war with Chili, iv, 82; vi, 738; Indian troubles in, xii, 69; new route to the sea, 69; gold and nitrate of soda in, 69; boundary disputes, ii, 74; iv, 29, 82; treaties, xii, 68.  
 Boll, Jacob, obit., v, 589.  
 Bolles, J. A., obit., iii, 632.  
 Bolobo, king of, ix, 167; house in, illustration, 169.

Bolton, H. C., investigations by, v, 93; ix, 45.  
 Bombay, improvements in, ix, 346; convention in, xi, 488; illustration, i, 403.  
 Bombay and Burmah Trading Company, x, 115.  
 Bona, Marquis, obit., i, 629.  
 Bona, Algiers, illustration, ii, 15.  
 Bonaparte, Anthony, obit., ii, 594.  
 Bonaparte, Constance, obit., i, 629.  
 Bonaparte, Elizabeth P., sketch, iv, 86.  
 Bonaparte, Eugène Louis, the Prince Imperial, sketch, iv, 88; excitement concerning, iv, 127; proposal for statue in Westminster Abbey, iv, 89; v, 342.  
 Bonaparte family, the, iv, 85.  
 Bonaparte, J., manifesto, viii, 365.  
 Bonaparte, Pierre, obit., vi, 691.  
 Bonapartists, leader of, iv, 394.  
 Bond, Richard C., obit., v, 589.  
 Bonds, United States and State, see Indebtedness, etc., vii, 392; State legislation on, see Obligation of Contracts, vii, 648; and stocks, variations of, iii, 120; municipal, ii, 526, 636; iv, 545, 643, 720; railroad subsidy, v, 540; the levee, in Arkansas, iii, 23; repudiated, iv, 659; of Colombia, iii, 104; of Peru, iii, 687; of Chili, iv, 140, 141; of Argentine Republic, v, 21; of Brazil, v, 63; of Mexico, v, 571. See also under titles of States and countries for bonded indebtedness.  
 Bone-shaker, the, ix, 83.  
 Bonetty, A., obit., iv, 774.  
 Bonheur, Rosa, xi, 345, 347.  
 Bonn Conference, i, 22, 23.  
 Bonnat, Leon, x, 362.  
 Bonnechose, Cardinal de, obit., viii, 697.  
 Bonnefoy-Sibour, A., obit., i, 629.  
 Bonner, Sherwood, pen-name, ix, 609.  
 Booneville, B. L. E., obit., iii, 632.  
 Bonney, T. J., xi, 48.  
 Bonomi, Joseph, obit., iii, 650.  
 Bontroux, experiments by, vii, 92.  
 Bookwalter, J. W., picture collection of, xi, 347.  
 Booth, H. G., excursion of, iv, 417.  
 Booth, James, obit., iii, 651.  
 Booth, J. C., experiments by, viii, 522; ix, 475.  
 Booth, J. W., obit., i, 613.  
 Booth, Sir R. G., obit., i, 629.  
 Booth, W. C., obit., i, 613.  
 Boracic acid, antiseptic properties of, i, 96; vii, 815; theory of, ix, 809.  
 Borate of quinine, x, 299.  
 Bordeaux clocks, the, iv, 344.  
 Borel, Gen., sketch, ii, 320.



Borelly, discoveries by, ii, 44, 46; iv, 51; vii, 21.  
 Borghese, Prince, travels, vi, 326.  
 Borgnis-Desbordes Expedition, vii, 335.  
 Borie, Adolph E., obit., v, 590.  
 Borijer, Léon, obit., xi, 711.  
 Borlinetto, invention of, x, 346.  
 Borneo, vi, 329; North Borneo Co., *ibid.*; discussed in Spain, vi, 819; North, vii, 68.  
 Börnstein, Richard, experiments by, xi, 539.  
 Boro-glyceride, viii, 95.  
 Borro, Luigi, obit., xi, 710.  
 Borrow, George, obit., vi, 691.  
 Bort, Teissereno de, xi, 546; xii, 490.  
 Bosco, Baron del, obit., vi, 691.  
 Boshway, xii, 81.  
 Bosio, A. S., sketch, i, 74.  
 Bosnia, i, 756; maps, i, 751, 754; article on, in Berlin Treaty, iii, 257; v, 46; land-tenure the cause of troubles in, ix, 64.  
 Bosnians, illustration, i, 757.  
 Boss, Emil, ix, 543, 545.  
 Boss, Lewis, observations by, viii, 24; prize to, vii, 42; xi, 50.  
 Boston, xi, 160; anniversary of, v, 501; foreign exhibition, viii, 825; art club exhibition, xi, 347; view of, i, 510; state house, i, 513.  
 Bostwick, Arthur E., experiments by, xi, 539.  
 Bosworth, Joseph, sketch, i, 75.  
 Botanical museum, Brazil, xi, 98.  
 Botanists, eminent, ix, 90-96.  
 Botany, ix, 90; fossil, 96.  
 Botocudo Indians, illustration, i, 78.  
 Böttger, invention, viii, 641.  
 Böttiger, K. V., obit., iii, 651.  
 Bottle-tree of Australia, illustration, i, 53.  
 Bouhard, John, invention by, x, 734.  
 Bouher, x, 364.  
 Boucicault, Dion, x, 92.  
 Boughton, George H., x, 365; xi, 84.  
 Bouguereau, x, 362, 363, 367; xii, 275.  
 Bouillon, Belgium, illustration, i, 71.  
 Boulanger, Gen., xi, 356; steel plate portrait, 358; xii, 291; demonstration in favor of, xii, 292.  
 Boullon, Probert and Soward, electric lamp of, viii, 303.  
 Boulton, S., obit., i, 629.  
 Boundaries, disputed, between Russia and Great Britain in Asia, x, 2, 4, 6, *et seq.*; xi, 376; Turkey and Greece, v, 688; vi, 359; war threatened, vi, 374; new line, vi, 377, 380; vii, 371; of Montenegro, xii, 774; Montenegro and Turkey, v, 542, 687, 688; viii,

549; Roumania and Bulgaria, v, 660; Roumania and Austria-Hungary, xii, 720; Bulgaria and Serbia, xii, 736; Switzerland and Baden, v, 677; of Canadian provinces, v, 113; vii, 216; ix, 264-266; United States and British America, i, 382; Mexico and Guatemala, iii, 415; iv, 462; vi, 379; official documents, vi, 570; settled, vii, 375; Honduras and Salvador, xii, 360; Costa Rica and Colombia, v, 113; vi, 112; Colombia, Brazil, and Bolivia, ii, 74; Colombia and Venezuela, viii, 139; Bolivia and Chili, iv, 29, 32; Bolivian treaties, xii, 68; Brazilian, ix, 96; Chili and Argentine Republic, ii, 28; iii, 12, 20, 22; iv, 137; settled, vi, 25; Chili and Peru, viii, 121; Peru and Ecuador, xii, 661; of Guiana, viii, 66; arbitration of United States, vi, 777, 778; between New York and Connecticut, v, 195; New York and New Jersey, viii, 564; xii, 548; Delaware and New Jersey, iii, 286; Maryland and Virginia, i, 502; vii, 507; Georgia and Alabama, ii, 12; of Texas, vii, 794; European nations in Africa, xii, 303, 304. See also Africa and Afghanistan.  
 Bourbeau, L. O., obit., ii, 594.  
 Bourbourze, M., ix, 477.  
 Bourchardat, Apollinaire, obit., xi, 710.  
 Bourée, Nicolas Prosper, obit., xi, 710.  
 Bourgeoise, Charles Arthur, obit., xi, 711.  
 Bourget, I., obit., x, 657.  
 Boussingault, J. B. J. Diendoné, obit., xii, 624.  
 Boutaric, E. P., obit., iii, 651.  
 Boutell, Rev. O., obit., ii, 594.  
 Bouton, Nathaniel, sketch, iii, 59.  
 Bove, Lieut., expedition, vi, 333; xii, 624.  
 Bovy, F. A., obit., ii, 594.  
 Bowditch, H. P., experiments, vi, 751; xi, 46; xii, 671.  
 Bowen, James, obit., xi, 666.  
 Bower, invention by, vii, 533; ix, 473.  
 Bowers, G. V., obit., iii, 632.  
 Bowler, Mrs. A. K., obit., 613.  
 Bowles, Sir George, sketch, i, 75.  
 Bowles, Samuel, sketch, iii, 59.  
 Bowman, Francis C., obit., ix, 608.  
 Bown, George, invention by, iv, 134.  
 Boxwood, Cape, x, 185.  
 Boyce, Rev. James, obit., i, 613.  
 Boycotting conspiracy in Illinois, xii, 375.  
 Boyd, Sir H. H., sketch, i, 75.  
 Boyd, Percy, obit., i, 629.  
 Boyer, Léon, obit., xi, 711.

- Braamcamp, A. J., obit., x, 657.  
 Brachvogel, A. E., obit., iii, 651.  
 Brackett, C. F., xi, 46.  
 Bradego, M. G. B., x, 381.  
 Bradford, J. Rose, xii, 678.  
 Bradford, Penn., xii, 119.  
 Bradlaugh, Charles, case of, in Parliament, v, 384; vi, 365; vii, 365; viii, 409; ix, 372; x, 453; xi, 399.  
 Bradley, Chief-Justice, opinions by, x, 272.  
 Bradshaw, Dr., residence of, in Africa, iv, 407.  
 Brady, Alexander, obit., iv, 692.  
 Brady, Mrs. R., obit., ii, 576.  
 Bragdon, Charles D., obit., i, 618.  
 Bragg, Braxton, sketch, i, 75.  
 Brahe, Tycho, statue of, i, 280.  
 Brahmanism, reform of. See Brahma Somaj.  
 Brahmans, conspiracies of, vi, 428.  
 Brahma Somaj, the, sketch, iv, 89; v, 389; vi, 65.  
 Brain, chemistry of the, i, 89; localization in the function of, vi, 748; surgery of, ix, 742, 749. See also Cerebral Localization, viii, 98.  
 Brainerd, Cape, ix, 85.  
 Brake, electric, vi, 255.  
 Brame, J. L. J., obit., iii, 651.  
 Bramtot, Alfred H., x, 862.  
 Brandt, drill invented by, vi, 820.  
 Brashear, John A., xi, 46, 55.  
 Brassais, St. Marc, obit., iii, 651.  
 Brassey, Lady Annie, obit. and portrait, xii, 70.  
 Bratiano, M., attempted assassination of, xii, 719.  
 Braun, Alexander, obit., ii, 594.  
 Braunau, Bohemia, illustration, i, 55.  
 Bravard, J. P., obit., i, 629.  
 Brayton, G. A., obit., v, 590.  
 Brazier, Prof., x, 161.  
 Brazil, statistics, government, etc., in every volume; slavery in, i, 76; vi, 73; viii, 67; ix, 97; x, 102; xi, 97; immigration to, i, 77; ii, 74; viii, 68; ix, 97; boundary questions, ii, 74; ix, 96; foreign debt, ii, 77; coffee production, iii, 62; vi, 70; famine in, iii, 64; electoral reform bill, v, 65; vi, 71; cotton manufacture, vii, 72; valuable woods, viii, 72; diamond-mines, viii, 72; explorations, ix, 850; x, 104; xii, 74; valuable new plants, xii, 78; growth of industries, xii, 78; naturalization bill, viii, 68.  
 Brazilein, crystalline, vii, 88.  
 Brazilian ox, illustration, iii, 63.  
 Brazza, S. de, explorations by, ii, 333; iv, 401; vi, 328; vii, 336; viii, 385; ix, 165, 168; x, 392; xi, 372.  
 Bread, alum in, iii, 86.  
 Breadstuffs, commerce in, iv, 165.  
 Breakwater at Ceará, xii, 260.  
 Breese, S., obit., iii, 632.  
 Bregenz, illustration, i, 59.  
 Brenontier, M., experiments by, x, 338.  
 Brennan, Margaret, obit., xii, 573.  
 Brent, Henry J., obit., v, 590.  
 Brentano, August, obit., xi, 666.  
 Bresnik, capture of, x, 729.  
 Brestel, R., obit., vi, 691.  
 Breton, J., x, 367; xi, 344, 347; xii, 280.  
 Brevoort, James Carson, obit., xii, 573.  
 Brewer, J. S., obit., iv, 698.  
 Brewster, B. H., portrait, vii, 812.  
 Brewster, Sir David, xi, 565, 569, 570.  
 Brewster, Henry, obit., xii, 573.  
 Bribery, charges of, iv, 718; law in New Jersey, v, 561; trial for, v, 621; case of Sessions, vi, 648.  
 Brice, O. and A., experiments by, xii, 107.  
 Brickman, Arthur O., obit., xi, 666.  
 Bridge construction, x, 328.  
 Bridgeport, xi, 161.  
 Bridges, new, i, 256, 257; over the Kentucky, ii, 278; over the Ohio, ii, 278; v, 244; in California, ii, 273; over the Tay, ii, 274; x, 328, xii, 253; disaster at the Tay, v, 344; report on, v, 244; over the Severn, ii, 275; iii, 288; iv, 340; over the Erewash, ii, 275; at Buda-Pesth, ii, 275; over the Douro, ii, 276; iii, 288; East River, iii, 280; vi, 245; vii, 582; viii, 311; upper East River, vii, 282; over the Missouri, iii, 282; v, 242; over the Volga, iv, 342; in America, iv, 342; over the Nile, iv, 342; Forth, vii, 283; viii, 315; ix, 312; x, 328; Kinzua valley, vii, 283; Niagara Cantilever, viii, 313; Garabit viaduct, viii, 316; renewal of Niagara, vi, 245; Blaaw-Krantz, x, 329; railroad in United States, v, 242; use of steel for, iv, 342; at Oporto, illustration, xi, 318; and viaduct in Russia, illustration, 315; in Mexico, illustration, 316; at Verona, x, 330; at Poughkeepsie, xii, 252, illustration, xii, 253; at Taranto, illustration, xii, 254; stiffened suspension, with diagrams, xii, 254; at Oak Park, xii, 255; at St. Louis, xii, 229.  
 Bridgman, Frederick, x, 363.  
 Brierley, J. T., x, 154.  
 Brig, prehistoric boat discovered at, xi, 85.

Brigandage in Italy, i, 422; in Thessaly and Epirus, v, 690; in Egypt, ix, 286.  
 Briggs, Charles F., sketch, i, 79.  
 Briggs, Mrs. H. H., obit., i, 613.  
 Briggs, Jeremiah, obit., i, 613.  
 Bright, John, sketch, v, 65; ix, 375.  
 Brighton, illustration, iii, 400.  
 Brignoli, P., obit., ix, 603.  
 Brin, M. M., experiments by, x, 159.  
 Brinkerhoff, J., obit., v, 590.  
 Brinsmade, H. N., obit., iv, 692.  
 Brinton, Daniel G., xii, 14.  
 Brinz, Aloiz von, obit., xii, 624.  
 Brion, G., obit., ii, 595.  
 Brisbane, W. H., obit., iii, 633.  
 Brisson, Henri, x, 27, 875; sketch, 376.  
 Bristol, dock at, iii, 287.  
 Bristow, E., obit., i, 630.  
 British colonies, table of areas, etc., x, 460.  
 British Columbia, viii, 72; ix, 270; boundaries, ix, 264, 265; x, 104; xi, 98; Chinese question in, x, 104.  
 British Honduras, ix, 803.  
 British ministry, change of, x, 446.  
 British politics, in India, v, 383.  
 Britton, Winchester, obit., xi, 666.  
 Broadway street railroad franchise, x, 641.  
 Broca, Paul, sketch, v, 66.  
 Brockhaus, H., obit., ii, 595.  
 Brockton, xi, 161.  
 Brockway, G. R., xii, 703.  
 Brodie, Sir B. O., obit., v, 598.  
 Brodie, J. H., ix, 478.  
 Broglie, Duc de, message of, ii, 311; sketch of, ii, 319; x, 375.  
 Bromfield's iron process, vii, 529.  
 Bromide of ethyl, v, 94.  
 Bromine, discovery of, see Balard, i, 61; manufacture of, v, 89.  
 Bromley, V. W., obit., ii, 595.  
 Brongniart, A. J., sketch, i, 80; ix, 273.  
 Bronzes and brasses, new methods, vi, 542; investigation of strength of, ix, 477; silicious bronze, x, 578.  
 Bronzino, sale of picture by, x, 366.  
 Brooklyn, xi, 162; Atlantic dock at, illustration, i, 606; theatre burned, i, 605.  
 Brooks, C. T., obit., viii, 587.  
 Brooks, D., invention, iv, 347.  
 Brooks, Elisha, obit., i, 613.  
 Brooks, E. P., obit., iii, 633.  
 Brooks, Erastus, obit., xi, 667.  
 Brooks, Horatio G., obit., xii, 573.  
 Brooks, Joseph, obit., ii, 576.

Brooks, Lewis, obit., ii, 576.  
 Brooks, W. R., observations by, vii, 85; discoveries, viii, 24; ix, 51; x, 51; xi, 57; xii, 45.  
 Broome, Sir F. N., ix, 60; x, 60, 65.  
 Brophey, George, obit., v, 590.  
 Brougham, John, sketch, v, 66.  
 Brown, Barrington, ix, 589, 540.  
 Brown, B. Gratz, obit., x, 646.  
 Brown, Dyer D. S., obit., xii, 573.  
 Brown, D. S., obit., ii, 576.  
 Brown, H. A., obit., iii, 633.  
 Brown, H. S., obit., i, 614.  
 Brown, John, monument to, ii, 417.  
 Brown, John, obit., ix, 603.  
 Brown, Joseph E., sketch, v, 311.  
 Brown, J. G. L., obit., iii, 633.  
 Brown, S. G., obit., x, 646.  
 Brown, Sir Thomas Gore, obit., xii, 625.  
 Brown, William, obit., i, 630.  
 Brown, W. F., obit., vi, 679.  
 Browning, O. H., sketch, vi, 73.  
 Brownlow, William G., sketch, ii, 79.  
 Brownson, O. A., sketch, i, 81.  
 Brücke, investigations by, ix, 657; illustration of his magnifier, ix, 500; xii, 674.  
 Brückner, E., xii, 491.  
 Bruges, bells of, x, 611; belfry of, illustration, i, 72.  
 Brüggemann, K. H., obit., xii, 625.  
 Brugière picric powder, x, 346.  
 Brugsch, E., researches of, vii, 261; x, 35, 36.  
 Brühl, M., obit., ii, 595.  
 Brunet, J. M., sketch, ii, 320.  
 Brünninghausen, C., obit., i, 614.  
 Brunswick succession, ix, 359; death of the duke, ix, 624; x, 418; regent, x, 418.  
 Brunton, T. L., ix, 655, 660.  
 Brush, O. F., electric light, vi, 258; experiments, vii, 266; storage-battery, vii, 273; street-lamp, illustration, ix, 307.  
 Brussels, exhibition, xi, 346; illustration, ii, 69.  
 Bryant, W. C., sketch and portrait, iii, 64.  
 Bubastis, great temple of, xii, 19; illustration, xii, 20.  
 Bâbûn sacked, ix, 558; x, 150.  
 Buccleuch, Duke of, obit., ix, 615.  
 Buchan, Alexander, xi, 542.  
 Buchan, Mr., x, 120.  
 Buchanan, J. N., xii, 104.  
 Buchanan, Mr., xi, 540.  
 Buchanan, R. C., obit., iii, 633.  
 Bucharest, illustration, i, 759.

- Buchholtz, Reinhold, sketch, i, 81.  
 Buck, Dr. G., sketch, ii, 79.  
 Buckingham, Lieut., observations by, ix, 554.  
 Buckingham, William A., statue of, sketch, ix, 281; x, 861.  
 Buckland, F. T., obit., v, 598.  
 Buckminster, W. J., obit., iii, 638.  
 Bucknell College Observatory, xii, 40.  
 Buckner, Gen. Simon B., x, 428.  
 Buda, Hungary, view of, i, 387.  
 Budberg, Baron, obit., vi, 691.  
 Budd, Dr. C. A., obit., ii, 576.  
 Budd, O. H., obit., v, 590.  
 Budde, Dr., viii, 528.  
 Buddhism, in Japan, i, 428.  
 Buddicom, William Barber, obit., xii, 625.  
 Budington, W. I., iv, 94.  
 Budrtzki, R. O. von, obit., i, 680.  
 Buell, Gen. Don Carlos, x, 424.  
 Buenos Ayres, financial crisis in, i, 85; project for a port, iii, 20; view of the city of, ii, 31; of the bank of, vii, 25.  
 Buffalo, or bison, extermination of the, xii, 74.  
 Buffalo, N. Y., xi, 162; view of, i, 601.  
 Buffum, James N., obit., xii, 574.  
 Buford, Thomas, iv, 541.  
 Bugbee, S. C., obit., ii, 576.  
 Building and Loan Companies, viii, 85.  
 Bulas, tribe of the, v, 291.  
 Bulgaria, iii, 65; map, ii, 722; in the Berlin Treaty, iii, 256; first Parliament, iv, 95; election of prince, iv, 97; disturbances, iv, 98; national debt, v, 67; Constitution annulled, vi, 73; vii, 73; viii, 74; ix, 101; x, 105; conflict with Serbia, ix, 102, 733; revolution, x, 107; Servian action, x, 109; Greek, x, 109; Turkish, x, 110; of the great powers, x, 111; union with East Roumelia, ix, 103; conference to settle, x, 752-755; victory of England, x, 754; xi, 100; Alexander dethroned, xi, 103; restored, xi, 104; abdication, xi, 104; the regency, xi, 106; treaty of friendship with Serbia, xi, 108; the Russians in, xi, 391; election of Ferdinand, xii, 80; new Cabinet, xii, 80.  
 Bulgarian costumes, illustration, i, 757.  
 Bulgaria, D., obit., iii, 651.  
 Buli Dupis, tribe of, vi, 330.  
 Bull, dephosphorization process, viii, 521.  
 Bull-fights, motion for schools for toreadors in Spain, v, 671; xii, 504.  
 Bulloch, W. H., ix, 502, 503, 505, 513.  
 Bullock, R. B., ex-Gov. of Georgia, trials of, iii, 372.  
 Bull Run, battle of, x, 652.  
 Bull-terrier, the, ix, 260.  
 Bulow, Herr von, x, 419.  
 Buloz, F., obit., ii, 595.  
 Bulwer, Sir Henry, x, 137.  
 Bunda, Gen., iv, 727.  
 Bunge, Dr. A., ix, 348; xii, 816.  
 Bunker, D. M., prize to, x, 367.  
 Bunsen, Baroness, obit., i, 680.  
 Bunsen, Robert W., xi, 412.  
 Bunzl, Julius, obit., xii, 574.  
 Buoys, v, 451; signal, viii, 721, 722.  
 Burch, J. O., sketch, vi, 76.  
 Burdach, E., obit., i, 630.  
 Burdon-Sanderson, Dr. J., ix, 660; x, 150.  
 Burgers, T. F., obit., vi, 691.  
 Burgess, Henry, obit., xi, 711.  
 Buringin, invention of, vi, 253.  
 Burial, regulations for, in Great Britain, i, 360; of the unbaptized, i, 23; of dissenters in parish church-yards, ii, 17, 66; iii, 13; v, 16, 17; discussed in Parliament, v, 341.  
 Burke, T. H., obit., vii, 645. See Phoenix Park Murders.  
 Burke, T. M., obit., viii, 597.  
 Burleigh, C. C., obit., iii, 633.  
 Burleigh, J. H., obit., ii, 576.  
 Burleigh, Lord, x, 722.  
 Burlingame, A., ambassador from China, iii, 810; treaty, vii, 387.  
 Burmah, iv, 98; v, 68; xi, 110; map, iv, 99; xi, 111; Chinese influence in, iv, 143; British in, vii, 416; x, 112; state barge, illustration, x, 118; conflict with Great Britain, x, 114; a Burmese colonel, illustration, x, 114; relations with France, x, 114, 115; annexation by Great Britain, x, 115; conflict with China, x, 115; xii, 81; warfare in, xii, 81, 83; English rule established, xii, 82; petroleum in, xii, 84; ruby-mines, xii, 84.  
 Burnaby, Frederick G., ix, 304; sketch and portrait, x, 115.  
 Burne-Jones, Edward, x, 360; xi, 345; xii, 277, 278.  
 Burnes, Alexander, xi, 2.  
 Burnett, Sir J. H., obit., i, 630.  
 Burnett, W. B., obit., ix, 603.  
 Burnham, S. W., discoveries and experiments by, iii, 38; v, 36; vii, 36; viii, 26.  
 Burnhem, G. W., obit., x, 646.  
 Burns, Rev. J., obit., i, 630.  
 Burns, Robert, his cottage, i, 357.  
 Burnside, Ambrose E., sketch, vi, 76; statue of, xii, 280.

- Burnside, John, sketch, vi, 77.  
 Burnside Will Case, vii, 486.  
 Burr, D. J., obit., i, 614.  
 Burrell, Sir Percy, sketch, i, 82.  
 Burril, observations by, vi, 669.  
 Burritt, Elihu, sketch, iv, 102.  
 Burroughs, William, obit., i, 614.  
 Burrows, Sir J. C., obit., i, 680.  
 Bursian, O., obit., viii, 598.  
 Burstal, Edward, obit., xi, 711.  
 Burt, W. A., x, 401.  
 Burtis, Divine, obit., xii, 574.  
 Burton, Capt., theory of, iii, 861.  
 Burton, Harry, x, 454.  
 Burton, J. R., obit., i, 680.  
 Burton, Nathaniel J., obit., xii, 574.  
 Buschmann, J. K. E., obit., v, 598.  
 Bushmen, illustration, ii, 86.  
 Bushnell, Horace, sketch, i, 82.  
 Busk, George, obit., xi, 711.  
 Buss, F. J. von, obit., iii, 651.  
 Bustard, Australian, illustration, ii, 51.  
 Butcher, Samuel, sketch, i, 82.  
 Butler, Gen. B. F., x, 427, 428.  
 Butler, Mrs. B. F., obit., i, 614.  
 Butler, B. I., obit., vi, 679.  
 Butler, George B., obit., xi, 667.  
 Butler, T. L., obit., v, 590.  
 Butler, W. O., sketch, v, 70.  
 Bütner, Dr., xi, 878.  
 Butt, Isaac, sketch, iv, 108.  
 Butte City, Mon., copper works at, x, 577.  
 Buxime, xi, 290.  
 Buxton, D. W., xii, 674, 679.  
 Buye-Ballot, xi, 539; iv, 798.  
 Byron, Henry J., obit., ix, 615.
- Oaballero, Fernan, sketch, i, 82; ii, 595.  
 Oabanel, Alexandre, x, 862; xii, 275.  
 Cable-railways, xi, 122; illustrations, 122-125.  
 Cables, Atlantic, viii, 888; International Protection of Submarine, viii, 76; ix, 339.  
 Cabrera, Count, sketch, i, 82.  
 Cabul, map, iv, 18; view of, ii, 5.  
 Caceres, Gen., ix, 649; x, 686, 687.  
 Cadmium, atomic weight of, vi, 98.  
 Cæsium, isolation of, vii, 97.  
 Caffarel, Gen., xii, 294.  
 Caffre War, the, ii, 85; iii, 7, 81; iv, 128, 129.  
 Caffres, the. See Basutos, Bechuanaland, etc.  
 Caillaux, Eugène, ii, 819.  
 Caillet de Poncy, experiments by, vi, 751.  
 Cailletet, M. Le, liquefaction of gases by, ii, 89; ix, 434; x, 152; illustration, ii, 89.

- Cairn, Richard Harvey, obit., xii, 575.  
 Cairns, Hugh MacCalmont, Earl, land act of, x, 457; obit., x, 657.  
 Cairns, Robert, obit., i, 614.  
 Cairo, street in, illustration, i, 246.  
 Calcutta exhibition, ix, 407; view of buildings and monument in, i, 404.  
 Caldecott, Randolph, obit., xi, 711.  
 Calderon Centenary, vi, 819.  
 Calderon, G., vi, 788. See Peru, Chili, and the United States, vi, 788.  
 Calderon, Philip H., x, 864; xi, 845.  
 Caldwell, C. H. B., obit., ii, 576.  
 Calendar, the Gregorian, vii, 371.  
 Calendar-stone, Aztec sacrificial, ix, 17, 18; illustration, ix, 18.  
 Caley, Dr., operation by, x, 742.  
 Calhoun, John C., statue of, xii, 280.  
 Calhoun, S. H., obit., i, 614.  
 Calico-printing, xii, 109.  
 California, government, statistics, etc., in every volume; map of Yosemite Valley, iii, 80; views in, ii, 81, 82; iii, 71, 72; railroad questions, i, 85; iv, 112, 117; vii, 78; taxation, i, 86, 87; vi, 80, 84; labor questions, iii, 69, 73; iv, 109; v, 77; irrigation, iii, 73; ix, 104; x, 118; contested land-titles, v, 77; new constitution, v, 77; petroleum and asphaltum, xii, 88; wines and fruits, iii, 80; iv, 119; vi, 79; x, 117; xi, 128; disposal of *débris*, iii, 72; v, 78; vi, 78; vii, 75; ix, 105; cod-fishing, x, 118; project to divide into two states, xii, 88; Chinese in. See Chinese in United States, the.  
 Calverley, Charles S., obit., ix, 615.  
 Calvin, John, proposed monument to, ix, 667.  
 Cam, Diego, ix, 168; xii, 806.  
 Cambier, explorations, iii, 361.  
 Cambodia, ix, 839; x, 118; insurrection in, x, 118.  
 Cambridge, xi, 163.  
 Cambyzes, x, 607.  
 Camden, xi, 163.  
 Cameron, plan for exploration, ii, 329.  
 Cameron, D., observations, vii, 39.  
 Cameron, J. Donald, sketch, i, 88.  
 Cameroons, ix, 864, 865; x, 119; xi, 129; complications with England, x, 119; revolt against the German government, x, 121; mountain districts, x, 122; Mahin district, x, 123; compromise with England, x, 123, 395.  
 Cammarota, F., obit., i, 630.  
 Camoens, tercentenary of, v, 628.

- Campagna, view of the, i, 419; reclamation of, viii, 454.
- Campbell, Sir George, xi, 48.
- Campbell, J. A., obit., v, 591.
- Campbell, John Lyle, obit., xi, 667.
- Campbell, J. F., x, 588.
- Campbell, Judge, x, 325.
- Campbell, Margaret W., iv, 598.
- Campbell, T. O., obit., ii, 576.
- Camponon, Gen., xi, 25, 375, 376.
- Campero, Gen., ix, 88.
- Camphausen, W., obit., x, 658.
- Campos, Martinez, ix, 741.
- Cana in Galilee, stone from, x, 37.
- Canada. See Dominion.
- Canada, Clem, obit., v, 591.
- Canadians, attempt to repatriate, ix, 676.
- Canals, interoceanic, i, 117, 253; iii, 105; iv, 340; v, 200; vi, 662; vii, 279; viii, 581; ix, 592; see also Interoceanic Canal, iv, 503; and Panama Canal, vi, 714; xii, 188; obligations of United States, v, 379; Suez, i, 244, 247, 355; ii, 268, 270; iii, 268; enlargement, viii, 307; xii, 240; proposed, to the Sahara, i, 254; Chinese Grand, iii, 291; Ob to Yenesai, iii, 358; Krah, vi, 244; projected in Germany, Austria, and Holland, vi, 244; v, 249; the North Sea, i, 253, 254, 588; x, 417; xi, 388; Corinth, vi, 243; viii, 308; proposed Zuyder Zee, i, 254; in Switzerland, iii, 291; Black Sea to Caspian, i, 253; Volga-Don, xi, 378; proposed Mississippi, v, 379, 719; vi, 410; vii, 381; proposed Florida, iv, 377; vii, 312; viii, 309; proposed Cape Cod, v, 247; xii, 459; proposed Hudson and East River, iii, 291; v, 250; from Lake Huron to Lake Ontario, iv, 240; proposed from Baltimore to Atlantic Ocean, iii, 239, 521; iv, 589; Columbia, ii, 627; in Canada, v, 219; Welland, vii, 215; Lachine, iv, 321; Chignecto, vi, 244; Erie, new mode for propelling boats on, iv, 345; New York Assembly on, iii, 616; abolition of tolls, vi, 651; St. Petersburg ship, x, 716; Isthmus, xi, 653; Nicaragua, xii, 568; Chesapeake and Ohio, xii, 456.
- Canaria, C., obit., ii, 595.
- Canby, Gen., x, 431.
- Canceling machines, xii, 689.
- Cancer, alleged cures for, x, 298, 299.
- Candahar, battle near, v, 7, evacuated by the British and taken by Ayoub, vi, 3; map, v, 7; proposal to cede, to Turkey, x, 12; illustration, iii, 5.
- Candia, insurrection in, i, 2.
- Cannabinon, x, 299.
- Canned provisions, ix, 2; their wholesomeness, 106.
- Canning, Sir S. See Stratford de Redcliffe.
- Canoes, ix, 107; Papuan double, ix, 116; Feejee, ix, 117; illustrations, ix, 116, 117, 118.
- Canovas, retirement of, vi, 818; ix, 741; x, 140, 143.
- Cantagel, F. F. J., obit., xii, 625.
- Canterbury, J. H. T. M. S., Viscount, obit., ii, 595; archbishop of, viii, 6, 57; convocation of. See under Anglican churches in every volume.
- Canterbury Cathedral, illustration, iii, 401.
- Cantilever bridge, viii, 313.
- Canton, view of, i, 111; riots in, viii, 128.
- Cantwell, J. O., x, 400.
- Canvas, decoration with, ix, 245.
- Capalti, Cardinal, obit., ii, 596.
- Cape Colony, and South Africa, in volumes ii to ix; map, iv, 122; view in, ii, 85; natives, illustration, 86; diamond-fields, ix, 110; x, 135; question of federation, iv, 128; Whale Bay annexed, v, 79; wars in, see Caffre War, Basutos, Bechuanaland, Boers, Transvaal, and Zulus. See Cape of Good Hope.
- Cape Horn, view of, iii, 12.
- Cape of Good Hope, x, 134; xi, 133; observatory at, ix, 47, 53; diamonds at, x, 135; forests, x, 135; xii, 91; annexation of Zululand and disfranchisement of natives, xii, 92. See Cape Colony.
- Cape Robert Lincoln, ix, 34.
- Cape Sabine, an island, ix, 36.
- Cape Town, view of, ii, 85.
- Capello, B., explorations by, iv, 405; v, 298.
- Capello, Hermenegildo, x, 394.
- Capen, Nahum, obit., xi, 667.
- Caperton, A. T., sketch, i, 88.
- Capital punishment, abolition of, i, 420; crime before and after, in the Netherlands, vi, 627; commission on mode of, xii, 548.
- Capitol at Washington, illustration, i, 784.
- Capponi, Marquis, sketch, i, 88.
- Capriles, Señor, x, 140, 141.
- Capron, S. M., obit., iii, 634.
- Carboazotine, x, 143.
- Carbolic acid, test for, iii, 92; poisoning by, viii, 752.
- Carbon, water on alloys containing, iii, 91; in iron, vi, 97; saturation capacity of, ix, 424; study of compounds of, x, 148, 149.
- Carbon bisulphuret, new compounds, iii, 84.

Carbon disulphide, v, 88.  
 Carbon sulphobromide, vii, 88.  
 Carbonate of potash, new process, x, 154.  
 Carbonate of soda, process for extracting, xii, 108.  
 Carbonic acid, in the air, viii, 120.  
 Carbonic oxide, experiments on, xii, 108.  
 Cardinals, creation of, i, 708; iv, 778; vii, 724; the first American, x, 568.  
 Cardozo, L. F., sentence and pardon of, iv, 820.  
 Cardozo, T. W., impeachment, i, 561.  
 Cardwell, Edward, obit., xi, 712.  
 Carey, A. D., xii, 810.  
 Carey, H. C., obit., iv, 129.  
 Carey, murder of, viii, 416.  
 Carillon chimes, x, 811.  
 Carinthia, archæologic discovery in, ix, 23.  
 Carl Anton, Prince, obit., x, 658.  
 Carl, Prince, obit., viii, 598.  
 Charles, W. R., x, 897.  
 Carlile, John S., obit., iii, 634.  
 Carlisle, John Griffin, Speaker, sketch, with portrait, viii, 93.  
 Carlisle, James M., obit., ii, 576.  
 Carlist War, the, x, 656.  
 Carlist, War, close of the, i, 261, 728; party, v, 673.  
 Carlyle, Thomas, letter on the Eastern question, ii, 865; sketch, vi, 89.  
 Carmichael, Dr., experiments by, ix, 728, 729.  
 Carnarvon, Earl of, x, 419, 455; portrait, x, 451; sketch, 449.  
 Carné, Count de, sketch, i, 88.  
 Carnegie, Andrew, quoted, xi, 867.  
 Carnelly, T., discoveries by, vi, 405; ix, 119; xii, 100, 111.  
 Carnochan, John Murray, obit., xii, 575.  
 Carnot, Marie François Sadi, v, 281; sketch and portrait, xii, 93, 289, 297.  
 Caro, Elme Marie, obit., xii, 625.  
 Caroline, Duchess, obit., i, 680.  
 Caroline Islands, x, 138; map, x, 139; gateway on Strong's Island, illustration, x, 141; the King's house, illustration, x, 143; discovery of, x, 138; Spanish claim to, x, 140; German flag planted, x, 141; diplomatic correspondence, x, 142; ruins in, x, 140; mediation by the Pope, x, 144; rebellion, xii, 741.  
 Caroline, Queen, obit., vi, 691.  
 Caron, A. P., knighted, x, 129.  
 Caron, R. E., obit., i, 630.  
 Carpender, E. W., obit., ii, 576.  
 Carpenter, Henry, obit., xii, 575.

Carpenter, Lant, x, 144.  
 Carpenter, Mary, obit., ii, 596.  
 Carpenter, M. H., sketch, vi, 91.  
 Carpenter, Philo, obit., xi, 668.  
 Carpenter, W. B., sketch, x, 144; portrait, 145.  
 Carpets, viii, 94; wools, 96.  
 Carr, Comyns, x, 847.  
 Carré, M., invention by, iii, 270.  
 Carriers, mechanical, illustrated, xii, 94.  
 Carrington, Col., engagement with Basutos, v, 81, 82.  
 Carruthers, R., obit., iii, 652.  
 Carruthers, William, xi, 48.  
 Carter, B., on eye-sight, vi, 272.  
 Carter, Sir J., obit., iii, 652.  
 Carter, Oscar C. S., x, 158.  
 Cartter, David Kellogg, obit., xii, 575.  
 Carvalho, H. de, xi, 371.  
 Cary, J. C., obit., ix, 604.  
 Casamajor, P., experiments by, vi, 352; viii, 12.  
 Casamicciola destroyed, viii, 285.  
 Casanova, Antonio, xi, 848.  
 Casanova, Ricardo, Archbishop, expulsion of, from Guatemala, xii, 347.  
 Casati, Capt., x, 394.  
 Caselli, invention by, vi, 256.  
 Casey, T. L., ix, 798.  
 Cash's experiments, vi, 750, 753.  
 Cashgar, illustration, i, 776. See Kashgaria.  
 Cashmere, Maharajah of, obit., x, 658.  
 Cassagnac, Paul de, trial for violation of press laws, ii, 805.  
 Casserly, Eugene, obit., viii, 587.  
 Castelar, Emilio, ix, 742, 743.  
 Castella, Gen., obit., x, 658.  
 Castellani, A., obit., viii, 598.  
 Castelnau, A., obit., ii, 596.  
 Castillo, Lieut. del, xii, 315.  
 Cast-iron, sea-water on, vi, 97.  
 Castle government, ix, 376.  
 Castles on the Bosphorus, illustration, i, 762.  
 Castner, Hamilton Y., xi, 536.  
 Caswell, A., D. D., obit., ii, 577.  
 Catacombs of Paris, illustration, i, 316; of Thebes, illustration, iii, 267.  
 Catalyst, function of a, x, 148.  
 Catamaran, ix, 115; x, 793.  
 Catania, cyclone in, ix, 416.  
 Cataracts, in Africa, ii, 331.  
 Caterini, P., Cardinal, obit., vi, 692.  
 Cathartic acid, x, 299.  
 Cathedral, a floating, viii, 67.  
 Catholicism. See Roman Catholic Church.  
 Catholicos, election of a, ix, 280, 763.

- Catskill Mountains, height of, ix, 588.  
 Cattegat and Skager-Rack, annual loss of life in, x, 417.  
 Cattle-plague, vii, 486; ix, 706.  
 Caucasus, exploration in the, xii, 313.  
 Cauchy, E., obit., ii, 596.  
 Cauver, Carl, obit., x, 658.  
 Cavagnari, L., iv, 10, 11, 13, 491.  
 Cave-dwellings, Buddhist, x, 38; Mexican, ix, 17; African, ix, 847.  
 Cavendish, F. O., obit., vii, 645. See Phoenix Park Murders.  
 Caventon, J. B., obit., ii, 596.  
 Caves in Austria, discovery of, xii, 313.  
 Cavour, Count, on the Roman question, vii, 627.  
 Cazot, T. J. J., sketch, iv, 386.  
 Ceará Breakwater, xii, 260; illustrations, 260.  
 Cecil, Lord Robert. See Salisbury.  
 Cedar Creek, battle of, x, 428.  
 Celernius Vitalis, inscription by, ix, 22.  
 Celibacy, priestly, abolished by Old Catholics, iii, 669.  
 Celluloid, iii, 459.  
 Cellulose, production of, i, 97.  
 Cemeteries, bill in Chili to secularize, viii, 122; early Christian, at Alexandria, xii, 21. See Burials.  
 Censorship of the press, ix, 708.  
 Census of the United States, v, 83; vi, 848; with maps, showing density of population, and of foreign and colored population, vii, 815.  
 Centaurs, peculiar representations of, ix, 25.  
 Centennial Exposition. See Exhibition, Centennial.  
 Central America, i, 89; v, 85; hidden tribes in, v, 298; proposed union, viii, 97; union decree, x, 464; xii, 348.  
 Central America, loss of the, xi, 44.  
 Ceramic wares, v, 91.  
 Cereals, United States, production, vii, 85; commerce in, vii, 112.  
 Cerebral hemispheres, lesions of, ix, 661.  
 Cerebral localization, vii, 688; viii, 98.  
 Cerebrum, effects of extirpation of, in rabbits, ix, 653.  
 Cernagora, viii, 549.  
 Cerruti, Signor, xi, 192, 455.  
 Cervical ganglion, function of, xii, 671.  
 Cesnola, Count di, explorations of, i, 28, 31.  
 Cetewayo, King, iv, 121; restoration of, vii, 85; portrait, *ibid.*; defeat, viii, 91; ix, 114; x, 186; obit., ix, 615.  
 Cézaune, E., obit., i, 630.  
 Chacornac, Mr., xi, 56.  
 Chadbourne, Paul A., sketch, with portrait, viii, 102.  
 Chadhelism, x, 316.  
 Chaffanjon, M., xii, 314.  
 Chaffee, Jerome B., obit., xi, 668.  
 Chaix d'Est Ange, G. L. V. A. C., sketch, i, 89.  
 Chaka, first king of the Zulus, iv, 352.  
 Chalchualpa, engagement at, x, 466.  
 Chaletenango, capture of, x, 467.  
 Challen, J., obit., iii, 634.  
 Chalmers, explorations, v, 135.  
 Chalybeate springs, x, 579.  
 Cham (A. de Noé), obit., iv, 698.  
 Chamberlain, D. H., claim as Governor of South Carolina, i, 725.  
 Chamberlain, Joseph, sketch, v, 85; xi, 399, 400, 401.  
 Chamberlain, J. A. D., observations by, vi, 401.  
 Chamberlain, J. P., obit., iii, 634.  
 Chamberlain, Sir N., iii, 4.  
 Chamberlain, N. B., obit., iii, 634.  
 Chamberlin, T. C., x, 404.  
 Chambers, M., obit., v, 591.  
 Chambers, William, sketch, viii, 103.  
 Chambers, W. H., obit., vi, 679.  
 Chambord, Count de, speech of, ii, 205; celebration, iv, 394; sketch, with portrait, viii, 103.  
 Chamois, illustration, i, 739.  
 Chamond, O., invention, i, 519.  
 Champerico, growth of, viii, 427.  
 Champion Hill, battle of, x, 425.  
 Chance, experiments by, viii, 115.  
 Chancellorsville, battle of, xi, 416.  
 Chandler, J. R., obit., v, 591.  
 Chandler, S. C., Jr., observations by, iii, 87, 38; vii, 38; ix, 54; x, 55; xii, 35.  
 Chandler, William E., portrait, vii, 809.  
 Chandler, Zachariah, sketch, iv, 129.  
 Changarnier, Gen., obit., ii, 596.  
 Channing, W. H., obit., ix, 604.  
 Chanute, O., xi, 46.  
 Chanzy, A. E. A., sketch, with portrait, viii, 107.  
 Chapin, Dorcas, obit., xi, 668.  
 Chapin, Edwin H., sketch, v, 85.  
 Chapin, H., obit., iii, 634.  
 Chaple y del Corral, J. F., obit., xi, 712.  
 Chaplin, Jeremiah, obit., xi, 668.  
 Char Aimak, the, or Four Tribes, x, 8.  
 Chareton, J. J. V. de, obit., iii, 652.  
 Charities, report on, in Massachusetts, ii, 486;



- in New York, iv, 672; organization, x, 145; street beggars, 148.
- Charles I, Prince of Roumania, iii, 739; sketch, ii, 87.
- Charles II, of Parma, obit., viii, 598.
- Charles of Hesse, obit., ii, 596.
- Charleston, S. C., view of, i, 723; x, 737; xi, 168; earthquake in, xi, 300.
- Charnay, D., explorations by, v, 298; vii, 337.
- Charrier, Henri, xi, 843.
- Chase, Harry, prize to, x, 367.
- Chase, Pliny Earle, obit., xi, 668; observations by, iii, 39.
- Chasles, M., obit., v, 599.
- Châteauvillain, affair at, xi, 358.
- Chatham, new docks at, illustration, i, 364.
- Chattanooga, battle of, x, 426.
- Chatterton, S. S., obit., i, 614.
- Chaul Mong, King of Anam, x, 32.
- Chavannes, Puvis de, ix, 245; x, 358; xi, 275, 279, 343.
- Chavée, H. J., obit., ii, 597.
- Cheatham, Benjamin Franklin, obit., xi, 668.
- Cheese-poisoning, xii, 106.
- Chefkin, C. V., i, 322.
- Cheik Said, bought by Germany, ix, 365.
- Chelius, M. J., sketch, i, 89.
- Chelmsford, Baron, obit., iii, 652.
- Chelsea, xi, 163.
- Chemical processes, new, vi, 94; viii, 11; x, 152; xii, 106; analysis of foods, viii, 34; nomenclature and philosophy, viii, 110; ix, 118; x, 148; xi, 141; new substances, ix, 425, 808-809; x, 153; xii, 104.
- Chemistry, industrial, analytic, synthetic, vegetable, etc., development and prospects, in every volume.
- Chemists, association of official, ix, 130; eminent, xi, 136-148.
- Chenery, T., obit., ix, 615.
- Cheney, Margaret S., experiments by, ii, 502.
- Cheney, Person O., i, 588, 589.
- Cheney, Ward, obit., i, 614.
- Chenu, J. C., obit., iv, 698.
- Cherau, capture of, x, 429.
- Chernoff, M. D., ix, 473.
- Chesbrough, Ellis Sylvester, obit., xi, 669.
- Chesney, Col. Charles O., obit., i, 630.
- Chesterhope, Roman building in, ix, 22.
- Chetwood, George R., obit., xii, 575.
- Chevalier, M., sketch, iv, 137.
- Chicago, xi, 163; Anarchist riots in, xi, 12; before the fire, illustration, i, 392.
- Chicago "Times," the, ix, 612.

- Chicopee, Mass., xii, 120.
- Chigi, Cardinal, death of, x, 713.
- Chilcott, G. M., sketch, vii, 109.
- Child, Lydia M., sketch, v, 96.
- Childers, H. C. E., sketch, v, 97; x, 446.
- Childers, R. C., obit., i, 630.
- Children, labor of, i, 510; iii, 524; iv, 659; vi, 575; ix, 571.
- Chili, statistics, government, etc., in every volume; map, iv, 139; guano in, i, 104; mining industries, iii, 95; view in, ii, 99; navigation law, iii, 95; conflict between church and state, iii, 96; Patagonian dispute with Argentine Republic, iii, 96; iv, 139; commercial relations with U. S., vi, 103; Peruvian bonds, vi, 104; the Araucanians, vii, 99; new pass over the Andes, discovered, viii, 123; new provinces in, ix, 130; xii, 315; government of, 131; great guano consignment, x, 164; nitrate-of-soda production, x, 164; claims against, x, 164; attempt on the president's life, x, 165; civil-marriage law in, x, 164; condors in, x, 165; contract with Peru, xii, 114.
- Chilian War, the, iv, 727; v, 98, 625; vi, 734, 737, 738; vii, 681; inquiry as to U. S. action, vii, 698; viii, 158; terms of treaty, viii, 121; peace, viii, 64; ix, 649; President Arthur on, viii, 64; the guano contracts, viii, 628; x, 164; American trade commission, x, 164.
- Chimborazo, ascent of, ix, 541; view of, i, 241.
- Chimes, mechanical, x, 611.
- China, in every volume; map of Cochin-China, i, 109; maps, i, 109; ix, 141; Margary murder, i, 107; views in, illustrations, i, 110, 111; ii, 100, 101, 108; iii, 98, 100; iv, 146; ix, 139, 142; dispute with Germany, i, 109; trouble with Portugal, i, 109; v, 103; treaty with Portugal, xii, 117; with Kashgaria, i, 109; iii, 96; see Kashgaria; rebellion, i, 110; iv, 145; attacks on Christians, i, 110; iii, 101; xi, 155; new policy toward them, xii, 117; new ports opened to commerce, i, 110; ii, 102; first line of railroad in, i, 3; ii, 102; famine, ii, 100; iii, 98; religious war in, ii, 101; attempt to convert Mohammedans, iv, 146; troubles with Russia, iii, 97; iv, 144; v, 101; vi, 107; ix, 714; negotiations with, xii, 118; opium trade, iii, 100; vi, 109; x, 174; first steam cotton-mill, iv, 143; diamonds in, iv, 143; insurrection, iii, 101; iv, 143, 144; restoration of Kulja, iv, 144; v, 101; vi, 107; diplomatic service, iv,

- 46; statistics of missions in, iv, 147; x, 169; trouble with Spain, v, 108; relations with other powers, v, 104; treaties with United States, v, 105; death of the regent, vi, 107; riots in Canton, viii, 128; floods, viii, 128; political crisis, ix, 187; British occupation of Port Hamilton, xi, 155; xii, 118; war with France, ix, 187; x, 170; see also Tonquin; treaties with France, xi, 154; xii, 117; representation at the Vatican, xi, 154; gold-mines, x, 169; newspapers, x, 169; suzerainty over Indian states, xii, 383.
- China, great wall of, illustration, ii, 103.
- China Merchants' Steam Navigation Company, vii, 101.
- Chincha islands, illustration, i, 662.
- Chinese, the, in United States: in California, i, 84; ii, 80; iii, 71, 74, 76; iv, 107; v, 71, 78, 78; viii, 78; ix, 195; xi, 126; riot against, in Colorado, v, 120; in Nevada, iv, 657; in Oregon, iii, 676; iv, 712; in Wyoming Territory, x, 787; in Washington Territory, xi, 836; embassy of, iii, 810; immigration to United States, vii, 887; ix, 195; transit across, vii, 891; Frelinghuysen's letter, vii, 192; alleged letter of Garfield, v, 576; letter of G. F. Seward, i, 281; citizenship question, ix, 427, 762; x, 787; President's message on, xi, 254.
- Chinese, the, troubles with Russia, Portugal, and Spain, v, 101; threatened war with Russia, vi, 107; ix, 714; anti-European riots, viii, 128; superstition of, vii, 101; in Brazil, vii, 70; in Cuba, iv, 822; in Australia, ii, 51; v, 37; in British Columbia, x, 104; in Tonquin, x, 24; excluded from Costa Rica, xii, 211; from Colombia, xii, 140.
- Chinese flower-boat, illustration, i, 110.
- Chinese fort, illustration, ix, 189.
- Chinese indemnity fund, x, 241.
- Chiniquy, Father, ix, 676.
- Chisholm, Mrs. C., obit., ii, 597.
- Chisholm, Judge, murder of, by a mob, ii, 528.
- Chittenden, R. H., investigations by, v, 92; vi, 95; vii, 90, 690; viii, 119, 635; x, 694; xii, 675.
- Chlorates, improvement in manufacture of, vii, 95.
- Chlorine, in water, i, 99.
- Chloroform, xii, 106.
- Chlorohydric acid, i, 100.
- Chlorophyl, physiological function of, vi, 110; ix, 128; x, 153.
- Chlorotribromide, xii, 769.
- Cholera, in Asia, i, 44; spread by pilgrims, iv, 494; in Egypt, viii, 298; ix, 143; in France, ix, 845; in Corea, xi, 271; in Japan, xi, 458; germs of, ix, 143, 497; epidemics of, x, 796; inoculation for, 797; in Chili, xii, 114; study of causes and treatment, xi, 156. See also Epidemic Diseases, vii, 286; viii, 817; Zymotic Diseases, x, 796, *et seq.*, and Microorganisms.
- Cholesterin, xii, 108.
- Choline, x, 299.
- Cholula, great mound of, illustration, ix, 17.
- Chopin, xi, 481.
- Choppin, S. P., sketch, v, 106.
- Oho-Sen. See Corea.
- Choubly, Mr., experiments by, xi, 534.
- Christian churches, xii, 118.
- Christian Connection, i, 113; ii, 103; iii, 101; vii, 102; xi, 158.
- Christian IX of Denmark, iv, 811.
- Christian IX Land, x, 398.
- Christian Union, i, 113; iii, 102.
- Christian, William Henry, obit., xii, 575.
- Christiani, experiments by, ix, 658.
- Christianity, growth of, viii, 128.
- Christians, massacre of, in Tonquin, x, 81; persecution in China, i, 110; iii, 101; xi, 156.
- Christianstad, illustration, i, 737.
- Christides, obit., ii, 597.
- Christie, Daniel M., obit., ii, 577.
- Christie, Samuel T., obit., i, 680.
- Christie, W. H. M., observations by, vii, 38; viii, 26.
- Christina Maria, dowager-Queen of Spain, iii, 102.
- Chromium compounds, iii, 85.
- Chronology, prehistoric, xii, 14.
- Chrysophan, xi, 290.
- Chrystal, G., x, 46.
- Chufas, iii, 472.
- Chun, Prince, x, 28.
- Chung Kwoh. See China.
- Chunder Sen, iv, 90, 91; vi, 65.
- Church, Albert E., obit., iii, 634.
- Church Army, the, ix, 11.
- Church, Pharcellus, obit., xi, 672.
- Church, Sanford E., death of, v, 569.
- Church Union, xi, 17.
- Church and State, relations of, ix, 18, 22; in Chili, ix, 135; x, 164; in Russia, ix, 278; in Ecuador, ix, 281; in France, x, 712; in Italy, xi, 455; xii, 899. See Disestablishment, and Anglican Churches.

Church of God, iii, 50.  
 Church of Jesus, the, Mexican Protestant Episcopal, iv, 611.  
 Churches: burials act, see Burial; liability of property; see Bishops; church and state, ii, 21, 22; iii, 14, 96; vi, 15; vii, 18, 18; heresy trials, i, 672; ii, 648; iii, 698, 698, 700; v, 694; vi, 767, 769; Protestant Episcopal appellate court proposed, vi, 773; patronage question, vii, 19; question of union, i, 22; iii, 14; vii, 587; viii, 658; of fellowship, i, 496; vi, 521; viii, 654; proposed revision of creeds, iii, 188, 184; v, 188; vi, 185; viii, 657, 660; of the Prayer-Book, viii, 671, 672; Anglican, on confession, iii, 15; Reformed, on secret societies, viii, 682; United Presbyterian, on instrumental music, vi, 766, 769, 770; viii, 656, 660; on dancing, i, 668; iv, 784; Lutheran, on predestination, vi, 521; ritualism in Anglican, see Ritualism; use of "Rev." by dissenters, see Keet; doctrinal qualifications for theological professorships, vii, 122; relation of Roman Catholic to European governments, see Papacy; monastery in Scotland, i, 706; decrees against religious orders, v, 628, 658; insult to Catholics in France, vii, 324; disturbances in Marseilles, iii, 349; building-fund commission, xii, 706; work in Mexico, xii, 706; documents affecting the Reformed, xii, 709; Unitarian, xii, 774. See also Church and State, Disestablishment, and Germany.  
 Churchill, Henry Adrian, obit., xi, 712.  
 Churchill Lord Randolph, ix, 875; portrait, x, 453; sketch, 449.  
 Churchill, T. J., v, 26.  
 Ciamician, experiments, v, 95.  
 Cibot, F. B. M. E., obit., ii, 597.  
 Cider, experiments on, x, 159.  
 Cigar law, tenement-house, ix, 431.  
 Cilley, Joseph, obit., xii, 576.  
 Cimon, wall of, x, 86.  
 Cinchona-Bark, cultivation of, viii, 427; in Bolivia, xi, 91; in Colombia, vii, 105; in Ecuador, viii, 289; xii, 69, 140; discovery and name of, vii, 105. See also Peruvian Bark.  
 Cincinnati, xi, 164; fountain at, see Kreling, i, 442; riots in, ix, 680; election, x, 204; illustrations, i, 647, 648.  
 Cinematics, experiments in, i, 515.  
 Ciparin, Timoteo, obit., xii, 625.  
 Cipher code-system, for telegraphing astronomical discoveries, x, 55.

Cipher telegrams, the, iii, 717.  
 Cipriani, xi, 454.  
 Circulation of animals, action of inorganic substances on, vi, 99; in the brain, vii, 691; contraction of the ventricle, *ibid.*; circulatory system, the, ix, 654; x, 692; xii, 678.  
 Circumnutation, v, 107.  
 Cissey, E. L. O. de, obit., vii, 645.  
 Cisterns, v, 867.  
 Cities, American, recent growth of, xi, 159, *et seq.*; xii, 118, *et seq.*  
 Cities, population, i, 239; ii, 260.  
 Citric acid on minerals, v, 98.  
 Civil-rights act, vii, 459; provisions of, vii, 695; cases, vii, 102; opinions on, viii, 129.  
 Civil service, instruction in languages for, ii, 868; President Hayes on, ii, 665; v, 641.  
 Civil-service reform, President Arthur on, vi, 785; viii, 164; bill on, in Congress, viii, 165; text of, viii, 183; provisions of, on political assessments, vii, 695; see Reform, etc., viii, 682; in New York, viii, 566; ix, 690; x, 689, 759; law, xi, 474, 826.  
 Claësson, experiments, viii, 112.  
 Claffin, Horace B., obit., x, 646.  
 Clagne, pictures of, iv, 532.  
 Clairin, George, x, 862; xii, 275.  
 Clamegeran, M., x, 376.  
 Clam-Martinitz, Count Heinrich, obit., xii, 626.  
 Clanricarde, Harriet, Marchioness of, obit., i, 681.  
 Clanricarde, Lord, xii, 339.  
 Clapp-Griffiths steel process, x, 574.  
 Clarendon, Earl of, x, 2.  
 Clarinet-Player, x, 613.  
 Clark, cotton-cleaner of, vi, 265.  
 Clark, Alvan, sketch and portrait, xii, 137.  
 Clark, Alvan, Jr., ix, 53; x, 52, 54.  
 Clark, J. W., invention by, x, 583.  
 Clark, Patrick, obit., xii, 576.  
 Clark, Rufus Wheelwright, obit., xi, 670.  
 Clark, Sarah, obit., vi, 680.  
 Clark, Thomas, obit., i, 631.  
 Clark, William Smith, obit., xi, 670.  
 Clark, Walter, ix, 653.  
 Clark, William Audley, obit., xii, 576.  
 Clarke, O. Cowden, obit., ii, 597.  
 Clarke, Col., in Basutoland, x, 84.  
 Clarke, Edward H., obit., ii, 577.  
 Clarke, F. W., investigations by, vi, 42; vii, 89; x, 149, 404.  
 Clarke, Joseph T., ix, 25.  
 Clarke, William T., obit., viii, 587.  
 Clarkson, R. H., obit., ix, 604.

- Clarksville, xi, 165.
- Claude, sale of works of, x, 861.
- Clausen, H. N., obit., ii, 597.
- Olay, Clement O., sketch, vii, 102.
- Olay, Henry, his public policy, x, 438.
- Olay and Randolph case, vii, 198.
- Clayden, A. W., xi, 542.
- Claypole, observations by, v, 86.
- Clayton-Bulwer Treaty, vii, 818; viii, 278.  
See Panama Canal, vi, 714.
- Clearing-houses. See Finances and Financial Review.
- Clemandot, M., ix, 472.
- Olemenceau, M., ix, 844; x, 875.
- Olements, invention, iv, 638.
- Olemmer, Mary, obit., ix, 604.
- Cleopatra's Needle, iii, 283; vi, 659.
- Olerical laws in Prussia, v, 689.
- Olésinger, J. B. A., obit., viii, 598.
- Oléve, discovery by, iv, 137; experiments, viii, 117; x, 156.
- Oleveland, Ohio, xi, 165.
- Oleveland, Chauncey Fitch, obit., xii, 576.
- Oleveland, E. H., obit., iii, 684.
- Oleveland, Grover, sketch and portrait, vii, 611; ix, 145; steel portrait, ix, front; letters of acceptance, vii, 610; ix, 148; letter on the silver question, x, 755; messages, xi, 211, and xii, 158.
- Oleveland, J. F., obit., i, 614.
- Oleveland, Moses, statue of, xii, 280.
- O Clifford, Sir A., obit., ii, 597.
- O Clifford, J. H., sketch, i, 114.
- O Clifford, Nathan, sketch, vi, 111.
- O Climate, influence of forests on, xi, 544.
- O Clinch, C. P., obit., v, 591.
- O Clinchant, Gen., obit., vi, 692.
- O Clinton, A., obit., iii, 684.
- O Clinton, J. J., sketch, vi, 112.
- O Cloez, Prof., experiments, iii, 91.
- O Closson, M., process for obtaining magnesia, vi, 94.
- O Clothing materials, improved preparation of, v, 89.
- O Clôture, the, vii, 208, 864; Gladstone's resolutions, vii, 206; in France, vii, 208.
- O Clouds, genesis of, see Fogs and Clouds, v, 275; height of, x, 588; observations on, xi, 542; nomenclature and iridescence of, xii, 489; auroral, xii, 490; distribution, motion, and height of, xii, 490.
- O Cloué, Vice-Admiral, v, 281.
- O Clubs, prominent, of England, France, and America, ix, 150.
- Coal, ii, 108; spontaneous combustion of, i, 98; in China, iii, 101; monopoly, iii, 619; commerce in, iv, 178; mining with caustic lime, vii, 104; bituminous, in United States, vii, 103; in Colorado, ix, 159; Alabama, ix, 7; in Mexico, ix, 498; in Washington Territory, x, 780; in Asia, xi, 874; discovered in Colombia, xii, 140.
- Coal gas, injury to books by, v, 87.
- Coal-tar colors, x, 158.
- Coan, Titus, obit., viii, 588; ix, 275, 389.
- Coango River, exploration, v, 294.
- Coanza River, exploration, v, 294.
- Coates, Benjamin, obit., xii, 577.
- Coates, Reynall, obit., xi, 671.
- Cobalt, magnetic, i, 250; bronze, ix, 478.
- Cobb, Carlos, obit., ii, 577.
- Cobb, Rufus W., ix, 16.
- Cobb, Stephen A., obit., iii, 684.
- Cobb, Sylvanus, Jr., obit., xii, 577.
- Cobbett, J. M., obit., ii, 597.
- Cobden, Mrs., obit., ii, 597.
- Coca-leaf, xi, 91, 752.
- Cocaine, hydrochlorate of, ix, 271.
- Cochery, L. A., sketch, iv, 886.
- Cochin-China, insurrection in, x, 119; the French in, xii, 806.
- Cockburn, Lord, v, 112.
- Cocke, William Archer, sketch, i, 298.
- Cockshott and Jowett, alloy produced by, viii, 525.
- Cocoa, xii, 281; in Ecuador, viii, 289.
- Cocaine, ix, 271.
- Cocoa-matting, viii, 97.
- Codeine, experiments with, vii, 87.
- Codrus, temple of, x, 86.
- Coercion bills, Gladstone's, vii, 204; act passed, xii, 848. See Ireland.
- Cœur d'Alene, desire of Montana to annex, xi, 577.
- Coffee, increasing demand, i, 80; adulteration, i, 96; duty on, in Austria, iii, 42; culture in Brazil, iii, 62; vi, 70; parasite of, iii, 62; rise in, viii, 71; making, illustration, xii, 651.
- Coffin, Levi, obit., ii, 577.
- Coffin, Robert Barry, obit., xi, 671.
- Coffin, W. R., xi, 846.
- Coggia, discoveries by, ii, 46; iii, 86; iv, 51; v, 84.
- Cogswell, Elliot Colby, obit., xii, 577.
- Cohen, Judith, x, 606.
- Cohoes, N. Y., xii, 120.
- Coinage, ix, 216, 782. See also Finances of U. S., x, 246.

Coins, Anglo-Saxon, excavated in Rome, ix, 27.  
 Coit, Thomas W., obit., x, 647.  
 Cojutepec, capture of, x, 467.  
 Coke, treatment of, viii, 872.  
 Cola-nuts, x, 299.  
 Colbert, Commander, x, 119.  
 Colburn, J. E., obit., iii, 634.  
 Colchicin, x, 299.  
 Cold, artificial, v, 88; as a chemical agent, v, 93.  
 Cold Harbor, battle of, x, 427.  
 Cole, Henrietta H., xii, 650.  
 Coleman, L., obit., vii, 635.  
 Colenso, J. W., sketch, viii, 185.  
 Coleridge, Sir J. T., sketch, i, 114.  
 Colet, Louise R., sketch, i, 114.  
 Colfax, Schuyler, sketch, x, 175.  
 Colladon, drill of, vi, 820.  
 College-discipline, iv, 842.  
 Collegiate Reformed Church in New Jersey,  
 250th anniversary of, iii, 720.  
 Colley, the, ix, 260.  
 Colley, Sir G. P., sketch, v, 80.  
 Collier, John, picture by, x, 864.  
 Collier, John Payne, obit., viii, 598.  
 Collier, Sir Robert, obit., xi, 712.  
 Collin, Edward, obit., xi, 713.  
 Collin, Raphael, x, 858; xi, 43.  
 Collings, Jesse, xi, 399-401.  
 Collins, E. K., obit., iii, 634.  
 Collins, Frances, obit., xi, 713.  
 Collins, Jennie, obit., xii, 577.  
 Collins, Mortimer, sketch, i, 114.  
 Collins, T. W., sketch, iv, 147.  
 Collisions, marine, viii, 136.  
 Colomb, Gen., obit., xi, 713.  
 Colombia, statistics, government, improve-  
 ments, etc., in every volume; map, iii, 106;  
 views in, i, 115; ii, 107; revolutionary out-  
 breaks, i, 118; ii, 108; iv, 149; v, 116; ix,  
 156; x, 179; xi, 192; boundary dispute  
 with Costa Rica, v, 118; xi, 192; steamship  
 lines, vi, 116; railways, vi, 116; vii, 106;  
 ix, 155; x, 179; quinine product, vii, 105;  
 newspapers, ix, 153; alcohol monopoly, xi,  
 190; description of Bogotá, xi, 192; discov-  
 ery of coal and phosphates, xii, 140; emerald-  
 mines, x, 179; diseases, xii, 140; English  
 in, xii, 140; Panama Canal, see Panama  
 Canal.  
 Colon-Aspinwall, burned, x, 179.  
 Colonia powder, x, 845.  
 Colonial extension, movement for, of European  
 nations, viii, 81.  
 Colonies, British, viii, 405; table of, ix, 381;

x, 460; federation of, ix, 380, 381; x, 57;  
 Portuguese, viii, 650; French and English  
 government of, ii, 14; Bismarck's theory of,  
 x, 143; French, xi, 860.  
 Colorado, admitted as a State, i, 118; consti-  
 tution, i, 118, *et seq.*; mines of, i, 121; iii,  
 112; iv, 154; v, 119; viii, 143; irrigation,  
 iii, 111; iv, 151; ix, 158; xii, 142; mineral  
 springs, iii, 114; Indians in, iv, 150; v, 116;  
 vi, 117; outbreak of Utes, xii, 143; suffrage  
 question, iv, 152, 153; growth of Leadville,  
 iv, 156, 161; railroad contests, iv, 158, 159;  
 anti-Chinese riot in Denver, v, 120; coal,  
 iron, and petroleum, vi, 118. Statistics, gov-  
 ernment, elections, etc., under Colorado in  
 each volume.  
 Coloration of animals, xii, 670.  
 Color-blindness, report on, iii, 526.  
 Color-hearing. See Hearing.  
 Color-sensations, ix, 657.  
 Coloring principle, a new, vi, 97.  
 Colors, for cloth, v, 90; permanence of, ix, 124;  
 of chemical compounds, ix, 119; coal-tar, x,  
 158; new coloring matters, xi, 139; xii, 105.  
 Colquitt, A. H., Governor of Georgia, charges  
 against, iii, 367-369.  
 Colson and Gauthier, xii, 107.  
 Colt, John, obit., ii, 577.  
 Colton, J. S., obit., iii, 635.  
 Columbia, capture of, x, 429.  
 Columbia River, improvements of, v, 614; x,  
 676.  
 Columbus, Christopher, canonization of, so-  
 licited, vi, 792; statue of, x, 361; remains  
 of, buried in Genoa, xii, 217.  
 Columbus, Ohio, xi, 166.  
 Comber, T. J., obit., xii, 626.  
 Combes, Commandant, xi, 874.  
 Combs, L., obit., vi, 680.  
 Comets, in every volume, under Astronomical  
 Progress and Discovery; origin of, iii, 36;  
 announcements of discovery, vii, 39; ix, 51;  
 x, 50; xi, 50; spectroscopic examination,  
 vii, 38; periodicity, viii, 25; table of the  
 periodic ones, x, 52. See Electricity, i, 248.  
 Comma-bacillus, the, ix, 143, 497; x, 797, 798.  
 Commerce, International, ii, 109; iv, 161;  
 treaties, vii, 864, 438, 441; viii, 649.  
 Commerce of the United States, in first five  
 volumes and vol. ix, 160; and finance in  
 1882, vii, 110; and navigation of, ix, 161;  
 tables of exports and imports, x, 183-189;  
 xi, 195; xii, 143; bill on interstate, vi, 172;  
 ix, 160; x, 181, 206; xii, 173.

- Commercial routes, map showing the great, iv, 506, 507.
- Committees, grand, in Parliament, viii, 409.
- Common, A., discoveries by, v, 85; vii, 87; x, 49; xi, 51, 52.
- Commune, amnesty to, i, 815.
- Communion, deprival of. See Anglican Churches, i, 24.
- Communism in Russia. See Bakunin, i, 60.
- Competitive system, the. See Civil-Service Reform.
- Compressed air, as a motor, i, 478, 516; injuries from, vi, 753; drills, vi, 820.
- Comstock mine, the, vi, 88.
- Comstock, S. M., obit., iii, 635.
- Corder, C. R., explorations of, i, 327; ix, 27; xii, 25.
- Corder, Lieutenant, researches of, vii, 264.
- Condon, S., obit., vi, 680.
- Condors, increase of, in Chili, declared enemies, x, 165.
- Condurango, x, 299.
- Conessine, xi, 290.
- Confederate flags, order for restoration of, xii, 777.
- Confederate monument, iii, 372; xi, 8; xii, 9.
- Confederate soldiers, amnesty bill, i, 182; artificial limbs provided for, v, 308; claim of Mrs. Page, vi, 145.
- Confederate States, preservation of the archives of, iii, 571; decision on bank-notes, iii, 784.
- Confederation, a South-African, project for, i, 8.
- Conference, International Monetary. See Bi-metallic Standard.
- Conger Mountains, ix, 84.
- Congo Free State, ix, 165; x, 189; xi, 202; constitution of, x, 191.
- Congo River, Stanley's voyage, ii, 332; his map, ii, 333; course and tributaries, iii, 363; iv, 408; explorations, vii, 336; viii, 385; x, 392; claims of Portugal, viii, 651; International Association of (and map), ix, 165; partition of the lower, x, 191; stations in the valley of, x, 192; missionaries on, x, 198; proposed railroad, x, 193.
- Congo royal guard, illustration, ii, 8.
- Congregationalists, in every volume; fiftieth anniversary of union, vi, 136.
- Congress of churches, xi, 208.
- Congress, United States, in every volume; disciplinary power, vii, 194; criminal jurisdiction of, vii, 196; pairing off in, vii, 199.
- Congress, Sanitary, xii, 663.
- Conkling, Roscoe, sketch, iv, 295; resignation, vi, 644.
- Connecticut, legislative proceedings, state officers, elections, etc., in every volume; views in, illustrations, ii, 222, 224, 225, 226; iii, 223; iv, 298; height of principal mountain points in, ii, 227; act on married women's property, ii, 223; iv, 299; breaking away of Stafford dam, ii, 227; judicial department, iii, 215; new capitol, iii, 219; iv, 297; growth of population in fifty years, vi, 198; fish-culture, viii, 255; ix, 232; statue of Gov. Buckingham, ix, 231; constitutional amendment, ix, 232; Rhode Island boundary settled, xi, 269.
- Conner, James Madison, obit., xii, 578.
- Connolly, Michael, obit., i, 614.
- Connolly, R. B., sketch, v, 198.
- Conrad, C. M., obit., iii, 635.
- Conrad, T. A., obit., ii, 577.
- Conroy, G., obit., iii, 652.
- Conscience, H., obit., viii, 598.
- Consent, age of, x, 452, 453.
- Conservatism, proposed triple alliance in the interest of, v, 47.
- Consolati, Count, obit., i, 631.
- Conspiracies in India, vi, 423.
- Constable, John, xi, 345.
- Constans, J. A. E., v, 281.
- Constant, Benjamin, pictures by, x, 359, 362; xii, 276, 343.
- Constantine, Algeria, view of, ii, 14.
- Constantinople, Russian occupation, and British fleet sent to, iii, 793; riot in, iii, 795; patriarchate of, ix, 277, 279; view of, i, 768.
- Constitutional Amendments, proposed, xi, 266.
- Constitutions, national, proposed revision of French, viii, 253; new, in Guatemala, iv, 464; proposed change in Netherlands, viii, 557; proposed amendments to United States, i, 133, 138, 172, 180; vii, 462; 13th and 14th, viii, 180; ix, 226; centennial anniversary, xii, 780.
- Constitutions, State, new, in California, iv, 103; effects of, v, 77; amended, xii, 86; new, in Louisiana, v, 478; convention to frame, in Dakota, viii, 266; amended, Arkansas, iv, 25; viii, 18; Connecticut, vi, 196; ix, 232; Delaware, viii, 272; xii, 221; Georgia, ii, 338; Indiana, ii, 395; iv, 496; v, 393; vi, 425; viii, 444; Iowa, v, 396; vi, 439; vii, 428; viii, 445; Kentucky, vi, 468; ix, 423; Maine, ix, 463; Massachusetts, vi,

535; Michigan, ii, 514; vi, 574; viii, 540; Minnesota, ii, 525; vi, 595; viii, 542; Missouri, ii, 529; viii, 546; Nevada, viii, 557; ix, 563; New Hampshire, viii, 561; New Jersey, iv, 663; v, 562; New York, ii, 568; North Carolina, v, 586; Ohio, iv, 703; Oregon, v, 611; South Carolina, ii, 697; Texas, vi, 836; West Virginia, iv, 846; Wisconsin, vi, 876; California, xii, 86.

Consuls, jurisdiction of, vi, 778.

Consumption, parasitic theory of, ix, 668.

Consumpt of legislative authority, x, 261.

Contraband of war, food made, x, 172.

Contracts, damages for prospective profits on, iv, 676.

Convallaria Maialis, viii, 256.

Convention of London, the, ix, 111.

Convict-labor, iv, 819; v, 374; in Alabama, v, 11; vi, 7; vii, 4; ix, 9; xi, 7; in California, v, 76; in Connecticut, v, 196; in Florida, v, 272; in Georgia, vi, 884; vii, 840; in Kentucky, vi, 470; in Massachusetts, v, 495; in New Jersey, v, 563; vi, 636; in New York, viii, 566; ix, 582; x, 636; in North Carolina, v, 583; in South Carolina, vi, 818; vii, 745; in Texas, v, 685; in West Virginia, iv, 845; prohibited in the United States, xii, 207.

Convicts, colonization of, ix, 842; proposed, in Saghalien, x, 897.

Conway, Hugh. See Fergus, F. J.

Conway, Thomas William, obit., xii, 578.

Conyngnam, Jane, Marchioness of, obit., i, 631.

Conyngnam, T. N., Marquis of, sketch, i, 212.

Cook, Capt. James, ix, 275-276.

Cook, Mt., ix, 545.

Cook, Paul, obit., xi, 718.

Cooke, H. D., obit., vi, 680.

Cooke, John Esten, obit., xi, 671.

Cooke, J. P., experiments by, v, 87; xii, 102.

Cooke, Phineas Baldwin, obit., xii, 578.

Cooking-schools, xii, 233.

Coolies, exportation of, to Cuba, v, 103; to Peru, x, 688.

Coombs, N., obit., iii, 636.

Cooper Institute, i, 212.

Cooper, James, obit., xi, 672.

Cooper, Peter, nomination of, i, 781; sketches, i, 212; viii, 256, with steel-plate portrait.

Cooper, William White, obit., xi, 713.

Copan, Monuments of, xi, 24, 25.

Cope, Edward D., ix, 45.

Copeland, Dr. Ralph, x, 53.

Copenhagen, proposed fortification of, viii, 275.

Copenhagen, University of, celebration of its 400th anniversary, iv, 314.

Copenhagen, Wellington's horse, epitaph on, ix, 624.

Copper, method for welding, i, 523; determination of, ii, 92; from pyrites, ii, 500; hardening, ii, 500; preparation, vii, 532; removal of arsenic, etc., viii, 118; extraction, viii, 521; ix, 477; market, 474; in Africa, ix, 362. See also under Metallurgy.

Copra, trade in, x, 139.

Coptic Church, ix, 279.

Copyright, commission on, iii, 223; laws of, and discussion on, iii, 223-227; treaty, France and Germany, viii, 397; international, xi, 811; conference on, x, 746; xii, 755.

Cora, R. de la, x, 361.

Corano, madonna of, x, 506.

Corder, H., observations by, iii, 36; vii, 39.

Cordova, meteorological stations in, xii, 315.

Corea, i, 425; v, 413; vii, 175; viii, 257; in-surrection in, vii, 176; American treaty, vii, 176; viii, 259, 260, 455; ix, 238, 418; x, 268; map, x, 264; outbreak of 1884, x, 266; guilds, the six magazines and the six warehouses, x, 266; xi, 271; gold in, 272; cholera, 271.

Coreans, in the United States, xi, 271.

Corfu, Greece, illustration, ii, 370.

Corinth, Greece, illustration, ii, 370.

Corinth, Miss., evacuation of, x, 424.

Corinth canal, viii, 308; ix, 312.

Cormon, Fernand, pictures by, x, 358; xii, 275.

Cornaro, Louis, obit., xi, 718.

Cornell, John Black, obit., xii, 578.

Cornell University, illustration, i, 599.

Corning, H. K., obit., iii, 635.

Cornly, James Madison, obit., xii, 579.

Corn-silk, drug made from, ix, 272.

Cornutine, x, 299.

Cornwall, H. B., investigations, v, 95; xii, 107.

Corona, observations of the, iii, 34; photographing, x, 47.

Coroners, office abolished in Massachusetts, ii, 488.

Coronini, Count, sketch, iv, 301.

Corot, B. C., xi, 347.

Corporations, liability, iv, 21, 720.

Corps Législatif, under Louis Napoleon, vii, 208.

Correlation theory, xii, 672.

Corrigan, Archbishop, x, 563; xii, 717.

Corrosive sublimate, use of, in surgery, ix, 747.

- Cort, F. de, obit., iii, 652.  
 Corundum, production of, ii, 93.  
 Corvée, abolition of, in Egypt, xii, 248.  
 Corwin, the, cruise of, v, 301; vi, 828, 824.  
 Corwine, A. B., obit., v, 591.  
 Cosmic Dust, viii, 526; ix, 58.  
 Cossacks, illustration, i, 710.  
 Costa, Sir M., obit., ix, 615.  
 Costa Rica, government, statistics, etc., in every volume; map, ii, 228; view of the capital, vii, 177; hostility to Nicaragua, i, 218; ii, 229; v, 200; outbreak in, ii, 229; fruit trade, iii, 228; education, iii, 228, 229; iv, 302; xi, 274; without a constitution, v, 200; finances of, vi, 199; vii, 177; Jesuits in, ix, 235; Protestantism in, x, 268; minerals found in, xi, 274; Chinese excluded, xii, 211; boundary dispute. See Colombia.  
 Coster, Maurice I, ix, 477, 478.  
 Cotopaxi, Mount, ix, 541; eruption, 281; x, 203; view of, iii, 260.  
 Cottenot, discovery by, iii, 86.  
 Cotterill, discovery, iii, 668.  
 Cottey law, the, iv, 644.  
 Cotton, i, 213; ii, 229; iii, 229; vi, 200; vii, 178; production and value of, iv, 638; seed-cotton, iv, 688; manufacture, ii, 120; iv, 143, 820; v, 180; vii, 502; commerce, iv, 171; weighing by sizing, iii, 229; Atlanta exposition, vi, 260; statistics, vii, 118; factories in South Carolina, viii, 785; large yield in, xii, 738; in Mexico, xi, 555; cultivation of, in Japan, xii, 402.  
 Cotton-tree, flour from the, x, 100.  
 Cotton-worm, see Cotton, vi, 200; illustration, ii, 232.  
 Coudreau, H., xii, 314.  
 Coulson, Dr. William, obit., ii, 598.  
 Coulthurst, W., obit., ii, 598.  
 Coumoundouros, resignation of, vii, 370.  
 Coupon cases, x, 268.  
 Courbet, Admiral, ix, 57, 141, 142, 343; x, 172, 173; obit., x, 659.  
 Courbet, Gustave, sketch, iii, 280.  
 Courcy, Gen. Roussel de, x, 27, 30, 31; obit., xii, 626.  
 "Courier and Enquirer," the, ix, 618.  
 Courtenay's fog-signal, v, 449.  
 Courtney, J. M., v, 449.  
 Courtat, Louis, picture by, x, 363.  
 Court of claims bill, xii, 189.  
 Courts, three rival, in Spain, i, 781.  
 Courts, United States and State, see Criminal Jurisdiction, vii, 179; crowded, v, 649; in Connecticut, iii, 215; v, 196; cost in North Carolina, v, 584; bill on jurisdiction of circuit, and to regulate removal of causes, v, 137-150.  
 Coutance, H. A., experiments, ix, 661.  
 Covington, Ky., xi, 166.  
 Cow-boys, the, vi, 782.  
 Cowgill, Clayton A., sketch, i, 298.  
 Cowles, E. H. and A. H., x, 578; xi, 585.  
 Cowley, Earl, obit., ix, 615.  
 Cox, Mr. Bell, case of, xii, 13.  
 Cox, E. T., discovery of mines by, v, 18.  
 Cox, E. W., obit., iv, 698.  
 Cox, Hannah, abolitionist, obit., i, 614.  
 Cox, Hannah, centenarian, obit., vi, 680.  
 Cox, S. H., obit., v, 591.  
 Coxe, Sir J., obit., iii, 652.  
 Cozzens, W. C., obit., i, 614.  
 Crab-farming, xi, 274.  
 Crabs, symbolism of, ix, 600.  
 Craig massacre, the, xii, 48.  
 Craig, Sir W. G., obit., iii, 652.  
 Craik, Dinah Maria Mulock, sketch and portrait, xii, 212.  
 Crampton, C. A., xii, 107.  
 Crampton, Sir John F. T., obit., xi, 713.  
 Cranborne, Lord. See Salisbury.  
 Cranbrook, Viscount, portrait, x, 441; sketch, 449.  
 Crane, Rev. J., obit., ii, 577.  
 Crane, Walter, x, 365.  
 Cranston, H., obit., ii, 577.  
 Crape-stone, ix, 235.  
 Craven, A. W., obit., iv, 692.  
 Craven, Thomas Tingey, obit., xii, 579.  
 Crawford County plan for elections, xii, 247.  
 Crawford, David, obit., i, 614.  
 Crawford, Earl of, obit., v, 599.  
 Crawford, Thomas, xi, 847.  
 Creasy, Sir E. S., obit., iii, 652.  
 Creedmoor, international rifle-match at, ii, 234.  
 Creeda. See Churches.  
 Creighton College observatory, xii, 40.  
 Cremation, i, 216; iv, 442.  
 Cremer, Camille, sketch, i, 218.  
 Cremieux, I. A., sketch, v, 200.  
 Cressbrook collection, xi, 345.  
 Cresson, Dr. J. C., obit., i, 614.  
 Crete, insurrection in, iii, 411; article on, in Berlin Treaty, iii, 257; union with Greece, iii, 793; troubles in, iv, 834; viii, 774; discovery in, x, 87; disturbance in, x, 752; xii, 773.  
 Crevaux, Dr., explorations by, ii, 330; iii, 365.



Crime, punishment of, in North Carolina, i, 611.  
 Crimean war, the, ix, 761.  
 Crimes Act, the, x, 451, 454, 455.  
 Criminal Code Bill, British, viii, 411.  
 Criminal Jurisdiction in the United States, vii, 179; of consuls, case of O'Neill, vii, 442.  
 Crinoline, ix, 388.  
 Crispi, Signor, xii, 398, 399.  
 Criticism, recent works of. See Literature in every volume.  
 Crittenden, G. B., obit., v, 591.  
 Crivoscia, insurrection in, vii, 55; viii, 548.  
 Croatia, dissatisfaction in, v, 370; viii, 48; ix, 70; insurrection in, about escutcheons, ix, 71; peasants of, illustration, ii, 58; home-rule party in, broken up, xii, 54.  
 Crocker, Uriel, obit., xii, 579.  
 Crocker, W. M., description of the Milanows by, vi, 880.  
 Crofters, Scottish, ix, 378, 404, 405; x, 527; xii, 342.  
 Crofton, Sir Walter, xii, 701.  
 Crofton system, the, xii, 708.  
 Croix, Marie de la, ix, 774.  
 Croll, James, on nebulae, iii, 88; calculations by, vi, 349.  
 Crommelin, William Arden, obit., xi, 713.  
 Cronin, E. A., obit., iii, 635.  
 Cronstadt, view of, i, 709.  
 Crookes, William, observations, viii, 526; xi, 47; xii, 101, 109.  
 Crops, vi, 851; viii, 835; ix, 327. See Finances and Financial Review.  
 Crosby, Dr. A. B., obit., ii, 577.  
 Crosby, J. P., obit., i, 614.  
 Crossman, G. H., obit., vii, 635.  
 Cross, Gen. O., obit., i, 614.  
 Cross, Sir Richard Assheton, portrait and sketch, x, 449.  
 Crosswell, Charles M., i, 552; iii, 562; obit., xi, 672.  
 Croton aqueduct, ix, 314; illustration, i, 602; xii, 555; illustrations, 556, 557, 559, 560.  
 Crow-Bar Oase, the, viii, 101.  
 Crozier, Capt., x, 186.  
 Crozier, L. N. F., x, 125.  
 Crudeli, Tommasi, ix, 271, 658.  
 Cruikshank, George, obit., iii, 658.  
 Cruls, Dr., discovery by, vii, 87.  
 Cruto, electric lamp of, viii, 308.  
 Cryptogamia, the higher, ix, 94.  
 Crystals, quartz, artificially produced, iv, 417.  
 Cuba, viii, 261; demand for United States prod-

ucts, vi, 817; war in, i, 729, 782; ii, 700; iii, 774; iv, 468, 822; v, 672; results of, viii, 262; ix, 286; virtual slavery in, ix, 237; suspension of newspapers in, ix, 237; emancipation, xii, 215; x, 273; xi, 275; xii, 214.  
 Cubango river, source of, iv, 405.  
 Cuckoo Clock, x, 618.  
 Cudaby, Michael, invention by, x, 734.  
 Cuffee, Paul, xii, 417.  
 Cullen, Cardinal, sketch, iii, 230.  
 Cullom, S. M., sketch, i, 395.  
 Cummings, Ebenezer Edson, obit., xi, 672.  
 Cummins, G. D., sketch, i, 218.  
 Cummins, G. W., experiments by, x, 694.  
 Cuneiform literature, ix, 18; antiquity of, xii, 16.  
 Cunningham, H., obit., iii, 635.  
 Cunningham, James, x, 454.  
 Curaçoa. See West Indies.  
 Currency, paper, of Turkey, iv, 832; law in Canada, v, 211; of Argentine Republic, vi, 29; of Japan, vi, 455.  
 Currency, United States, ii, 285; v, 646; vi, 127; discussed in Congress, iii, 188, 175; bill to redeem fractional, i, 202. See also Finances of the United States in each volume, and Indebtedness, etc., vii, 392; bimetallic, x, 275; charts, x, 276, 278, 279, 281.  
 Curry, Daniel, obit., xii, 579.  
 Curry, G. L., obit., iii, 685.  
 Curtains, ix, 247; improved fixtures, illustration, xii, 658.  
 Curtis, George William, ix, 691.  
 Curtis, N. M., indicted, vii, 694.  
 Curtis, W. E., sketch, v, 201.  
 Curtius, G., obit., x, 659.  
 Curwen, Rev. John, ix, 546.  
 Cushing, Caleb, sketch, iv, 308.  
 Cushman, Charlotte, sketch, i, 218.  
 Cust, Sir E., obit., iii, 658.  
 Custance, William, obit., xi, 713.  
 Custer, Gen. George A., sketch, i, 219; death of, i, 22, 43.  
 Cuthbert, J. A., obit., vi, 681.  
 Cut-Knife Creek, engagement at, x, 128.  
 Cutter, Stephen, obit., xi, 672.  
 Cutting Case, the, xi, 625.  
 Cutting, Jonas, obit., i, 615.  
 Cutts, Richard M., obit., xi, 673.  
 Cuvillier-Fleury, A. A., obit., xii, 626.  
 Cuyler, Theodore, obit., i, 615.  
 Cuypers, Josef, x, 866.  
 Cyanogen compounds, ix, 308.

- Cyclamose, xi, 189.  
 Cyclone in India, i, 405; in Minnesota, viii, 543; in Sicily, ix, 416.  
 Cyclones, phenomena of, xii, 491.  
 Cyclorama, xi, 278.  
 Cyprus, iii, 281, 401; vi, 202; articles on, in Berlin Treaty, iii, 259; finances, v, 836; Cesnola's explorations, i, 81; Phœnician inscription from, xii, 17.  
 Cyril II, Patriarch of Jerusalem, i, 878; obit., ii, 598.  
 Czajkowski, Michael, obit., xi, 714.  
 Czar, the, attempts on the life of, iv, 776, 778; v, 662, 665; xii, 723; precautions taken, ix, 712; x, 69; visit of, to the Cossacks, xii, 725. See Alexander.  
 Czechs, the, v, 44, 45; vi, 49, 50; viii, 45; x, 71; language and university, 71; agitation, 72.  
 Czermak, J., obit., iii, 653.  
 Czernagora, ix, 536.
- Daboll, C. L., fog-signal of, v, 447.  
 Daft, Olivia, obit., v, 592.  
 Daggett, O. E., obit., v, 592.  
 Dagnerre, ix, 651.  
 Dahl, M., xii, 484.  
 Dahlen, Gen. von, vii, 58.  
 Dahomans, the king's dance, illustration, ii, 8.  
 Dahomey, war with, i, 8.  
 Dai Nippon. See Japan.  
 Dakin, T. S., obit., iii, 685.  
 Dakota, i, 219; ii, 245; vi, 202; viii, 265; new capital, 266; Constitution, 267; x, 283; census, x, 287; division of, xii, 219; ix, 240; x, 282; xi, 279.  
 Dalai Lama, the, x, 896.  
 D'Albertis, explorations by, iii, 864; iv, 398, 408.  
 Dalhousie, Lord, in Burmah, xi, 114.  
 Dall, Charles H. A., obit., xi, 678.  
 Dall, W. H., exploration by, v, 289; vi, 325; x, 404.  
 Dallinger, W. H., ix, 510.  
 Dallman, Capt., xi, 382.  
 Dalmatia, i, 757.  
 Damien, Father, xii, 850.  
 Damour, experiments by, ii, 501.  
 Dams, famous, xii, 255.  
 Dana, Alexander Hamilton, obit., xii, 580.  
 Dana, R. H., the elder, sketch, iv, 804.  
 Dana, R. H., the younger, sketch, vii, 182.  
 Danakil, tribe of the, ii, 2.  
 Danby, A. G., obit., i, 615.  
 Dancer, John Benjamin, obit., xii, 626.  
 Dancing, churches on, i, 668; iv, 784.  
 Dandanga, ix, 170.  
 Danenhower, J. W., portrait, vii, 833; obit., xii, 580.  
 Danforth, Charles, obit., i, 615.  
 Daniel, R. T., obit., ii, 578.  
 Dannat, W. F., x, 858.  
 Danube, European Commission of the, i, 753; vii, 728; viii, 266; ix, 702; Kilia question, vii, 729; underground connection with the Aach, iii, 722; the Iron Gate, ii, 691; viii, 309, 696; ix, 702; map of provinces of the, iii, 789.  
 Danvers Hospital, ii, 488.  
 Daoud Pasha, vii, 261.  
 Darby, John, obit., ii, 578.  
 Dardanelles, the, illustration, i, 765.  
 D'Arenal, Donna Concepcion, xii, 704.  
 Dar-es-Salam, port of, x, 796.  
 Dargan, E. S., sketch, iv, 804.  
 D'Arlingcourt, invention, vi, 256.  
 D'Arsonval, Dr., xii, 671.  
 Dartmouth College, illustration, i, 591.  
 Darwaz, State of, x, 2.  
 Darwin, Charles, experiments by, v, 106; on earth-worms, vi, 224; sketch of, vii, 183.  
 Darwin, Francis, experiments by, iii, 444; iv, 86; v, 106.  
 Darwin, G. H. and H., observations by, vii, 228; xi, 47.  
 Dash Kepri, x, 9.  
 Daubigny, Charles F., obit., iii, 653.  
 Daubigny, Karl, obit., xi, 714.  
 Daubrée, experiments by, iv, 417.  
 Daucher, L., obit., iii, 635.  
 Davenport, Edward L., sketch, ii, 246.  
 Davey, Chalon F., obit., iii, 635.  
 David, Ernest, obit., xi, 714.  
 David, F. C., sketch, i, 220.  
 Davidis, Henrietta, obit., i, 781.  
 Davidson, G. S., obit., vi, 681.  
 Davidson, R., obit., i, 615.  
 Davidson, T. G., obit., viii, 588.  
 Davie, Winston Jones, obit., xii, 580.  
 Davies, Charles, sketch, i, 220.  
 Davies, H. E., sketch, vi, 204.  
 Davis, Alexander K., impeachment, i, 560.  
 Davis, Charles H., Admiral, sketch, ii, 246.  
 Davis, Charles H., painter, xi, 846.  
 Davis, David, sketch, ii, 383; obit. and port., xi, 281.  
 Davis, George T., obit., ii, 578.  
 Davis Island dam, x, 833.

Davis, Jefferson, amnesty to, discussed, i, 183-192; Mississippi resolutions on portrait of, v, 528; action of Congress, x, 235; charge by Gen. Sherman against, x, 235.

Davis, Joseph A., obit., xi, 673.

Davis, Mrs. P. W., obit., i, 615.

Davis, William M., xii, 493.

Davitt, Michael, viii, 413; xii, 338.

Davy, Alfred, invention by, x, 580.

Davy, E. W., discovery by, iii, 92.

Dawant, Albert Pierre, x, 362.

Dawes, Henry L., sketch, vi, 536.

Dawson, Arctic voyage, viii, 383.

Dawson, Dr. G. M., xii, 314.

Dawson, Henry, obit., iii, 653.

Dawson, Dr. J. W., x, 407.

Dawson, Sir William, xi, 47.

Day, Horace H., obit., iii, 635.

Dayan, Charles, obit., ii, 578.

Dayton, Ohio, xi, 166.

Daza, Hilarion, sketch, iv, 305.

Deaconesses, v, 638; viii, 4.

Deak, Francis, sketch, i, 221.

Dearborne, Frederick M., obit., xii, 580.

Deas, Sir David, obit., i, 631.

Death penalty, in Ecuador, xii, 232.

De Bar, Benedict, obit., ii, 578.

Debeb, Abyssinian robber, xi, 455.

De Bort. See Bort.

De Brazza. See Brazza.

Deb Rajah, the, x, 496.

Debsul, J. P., obit., iii, 636.

Débris from mines. See Mines.

Debts, of United States, of the various States, and of other nations. See Indebtedness of the United States, etc., vii, 392, with maps and diagrams. See also under titles of States and Countries; of Cities, iv, 339.

Debus, H., theory of, x, 343.

Decaisne, J., obit., vii, 645.

Decanter, musical, x, 609.

Decatur, Stephen, sketch, i, 222.

Decazes, Louis Charles, Duc de, ii, 320; obit., xi, 714.

Decazeville, strike at, xi, 358.

Deccan Company, the, xii, 388.

Dechy, M., xii, 313.

Decipium, vi, 93.

Decristoforis, Col., xii, 2, 3.

Decorative art in America, ix, 242.

Decorations, sale of, in France, xii, 294.

Dederick, cotton-press, vi, 265.

Deeds and titles, record of, in Great Britain, x, 457.

Deep-sea dredgings, x, 145.

Deer-hound, the, ix, 310.

Deer in the United States, x, 387.

Defenses, system of, in United States, iii, 31; v, 647; of Switzerland, v, 676; vii, 774.

Defoer collection of pictures, xi, 344.

De Forest, Lockwood, ix, 249.

Defrees, J. D., obit., vii, 636.

Defregger, Franz, x, 367; xii, 279.

Degenfeld-Schönburg, Count von, sketch, i, 222.

De Kalb, Baron, statue of, xi, 347.

De Koven, James, sketch, iv, 305.

Delacroix, Eugène, x, 364; xii, 279.

Delafontaine, M., discovery by, iii, 86; experiments, vi, 93.

Delafosse, Gabriel, obit., iii, 653.

Delafosse, M., x, 26.

Delane, John T., sketch, iv, 305.

Delany, James J., obit., xi, 673.

Delany, P. B., ix, 310.

De la Rive, theory of, viii, 28.

Delaware, statistics, conventions, elections, etc., in each volume; old Swede Church, illustration, ii, 247; apportionment in, iii, 237; project for ship-canal, iii, 239; iv, 310; tramp act, iv, 306; divorce laws, iv, 306, 307; railroad commissioners' bill, iv, 308; limits of Federal and State authority, v, 203; election riot, v, 204; vi, 205; constitutional amendments, ix, 251.

Delbœuf, M. J., ix, 657.

De Lesseps, v, 16.

Delhi, illustration, i, 405.

Deligeorgis, obit., iv, 698.

De l'Isle, Gen. Brière, x, 24 *et seq.*

Delitzsch, Johannes, sketch, i, 225.

Deloncle, F., x, 397.

De Long, Charles E., obit., i, 615.

De Long, G. W., expedition of, v, 288; vi, 322; vii, 381; sketch, vii, 189; portrait, vii, 331.

Delord, Taxile, obit., ii, 598.

Delorme, explorations by, vi, 329.

Delphi, site of illustration, ii, 369; contemplated excavations at, xii, 22.

De Lunes, C., obit., iii, 636.

Delyannis, xi, 409.

Demarcy, M., xii, 101.

Dembowsky, prize to, iii, 39.

Demidoff, Prince, obit., x, 659.

Demmeni, Col., x, 625.

Denfert-Rochereau, obit., iii, 653.

Denison, Andrew W., obit., ii, 578.

Denison, Samuel D., obit., v, 592.

- Denmark, statistics, legislative proceedings, etc., in each volume; views in, illustrations, i, 228; ii, 250; debates on military defenses, i, 227-230; v, 207; army reorganization, iv, 313; indictment of ministers, ii, 249, 250; social Democrats, ii, 250; Santa Cruz insurrection, iii, 242; treaty of Prague, iv, 313; University of Copenhagen celebration, iv, 314; relations with Germany, v, 208; constitutional crisis, vi, 209; vii, 191; viii, 275; ix, 253; x, 290; peculiar political condition, vi, 210; land system, vi, 211; attempt to assassinate the prime minister, x, 293; xi, 285; trial of Herr Berg, xi, 285; colonies, xii, 223.
- Dennett, observations by, iv, 52.
- Denning, W. F., observations by, iii, 36; vi, 39; viii, 20, 23, 26.
- Dennis, John S., obit., x, 659.
- Dennison, William, obit., vii, 636.
- Denominations, Religious, numbers of, viii, 129. See articles on the various denominations, in each volume.
- De Normanville, W., invention by, ii, 499.
- Dent, Mr., xii, 313.
- D'Entrecasteaux Islands, x, 681.
- Denver, xi, 167.
- Denza, F. P., observations, v, 36.
- Denzin, K. F. von, obit., i, 631.
- Depauw, observations by, viii, 436.
- De Pauw, Washington O., obit., xii, 581.
- Deposit and Trust Companies, x, 293; list of, in U. S., 294, 295.
- Depretis, Agostino, v, 406; xi, 453, 454, 455; sketch, xii, 223; retirement of, 397.
- De Puy, H. W., obit., i, 615.
- Derby, Lord, x, 58, 59, 419.
- Derby, Mrs. L. F., obit., v, 592.
- Derby, Orville A., ix, 475.
- De Rossi, observations of, vii, 223.
- Déroulède, Paul, arrest of, xii, 296.
- Dervish Pasha, sketch, ii, 250.
- De Saussure, Wilnot Gibbs, obit., 673.
- Desbordes, Col., x, 27.
- Deschamps, Cardinal, obit., viii, 599.
- Desert, Great American, vi, 203.
- Desgodin, Abbé, travels of, ii, 327.
- Designollo powder, x, 346.
- Desjardins, Ernest, obit., xi, 714.
- Des Moines, Iowa, xi, 167; river lands, xi, 248.
- Despois, E. A., sketch, i, 230.
- De Stael, M., x, 16, 17.
- Detectives, measure for regulating work of, ix, 345.
- Detlef, Karl. See Bauer, i, 68.
- Detmold, Christian E., obit., xii, 581.
- Detroit, Mich., illustration, ii, 5, 9; xi, 167.
- Detwiller, Henry, obit., xii, 581.
- Deutsch, S., obit., ii, 598.
- Devens, Charles, sketch, ii, 251.
- Devereux, John Henry, obit., xi, 674.
- De Vico's comet, ix, 52.
- Deville, E. H. S. O., sketch, vi, 212; ix, 120, 809.
- Deville and Debray, experiments by, iii, 89.
- Devin, T. C., obit., iii, 636.
- Devolution, in Parliament, ix, 372.
- Devrainville, M., invention by, x, 612.
- Devrient, P., obit., ii, 598.
- Dew, theory of, xi, 541.
- Dewar, James, apparatus for producing liquefaction, ix, 435; illustration, 434; experiments, x, 152, 161; xi, 138.
- Dewing, T. W., ix, 245; xii, 278.
- De Witt, R. M., obit., ii, 578.
- Deye, Col., i, 4.
- Deyrolle, invention by, iii, 725.
- Dharma Rajah, the, x, 496.
- Dhuleep Singh, xii, 7.
- Diamonds in China, iv, 143; artificial, v, 86; the trade, viii, 277; mines in South Africa, ix, 110; x, 135; in Brazil, viii, 72.
- Diaz, Eugene, i, 230.
- Diaz, Porfirio, sketch, i, 547; government of, established, ii, 511; recognized by U. S., iii, 12, 551; x, 367.
- Diaz de la Pena, sketch, i, 230.
- Dick, A., experiments by, viii, 524.
- Dick, F. W., xi, 537.
- Dickens, Inspector, x, 129.
- Dickinson, Donald McDonald, sketch and portrait, xii, 776.
- Dickson, J. B., obit., i, 631.
- Dickson's expedition, iii, 354.
- Didot, A. F., sketch, i, 230.
- Diehl, M., x, 37.
- Dieringer, Rev. F. X., obit., i, 631.
- Diestel, L. von, obit., iv, 698.
- Diet, while in training, xii, 668.
- Dietl, Joseph, obit., iii, 653.
- Dieulafait, discovery by, iv, 419.
- Dieulafoy, M., xi, 26.
- Diez, F. C., sketch, i, 230.
- Digby, Kenelm H., obit., v, 599.
- Digestibility of various substances, xii, 676.
- Digestion, new agent in, vi, 96; experiments, vi, 749; vii, 94, 690; viii, 635; xi, 760.
- Digestive system, the, ix, 653; x, 693.
- Dilettanti, society of, x, 36.

Dill, Louis, x, 578.  
 Dillon, John, xii, 386.  
 Diman, J. Lewis, obit., vi, 681.  
 Dindorf, W., obit., viii, 599.  
 Dingaan, iv, 853.  
 Dingelstedt, F. von, obit., vi, 692.  
 Dinizulu, King, ix, 114, 115; x, 136, 137.  
 Dinsmore, S. P., obit., vii, 686.  
 Dion, C., obit., iii, 636.  
 Diorrexine, x, 343, 346.  
 Diphtheria, drug for, x, 801.  
 Diplomatic Service in China, iv, 146.  
 Diplomatic Correspondence and Foreign Relations of the U. S., i, 231; ii, 251; iii, 242; vi, 212; vii, 192; viii, 278.  
 Disasters in 1835, x, 295; in 1836, xi, 237; in 1837, xii, 227.  
 Disciples of Christ, in every volume but viii and ix.  
 Disciplinary Power of Legislative Assemblies, vii, 194.  
 Disease, germ theory of, ix, 495, 653, 663; see also Germ Theory; progress in study of, vi, 552; new, xi, 608.  
 Disestablishment, church, viii, 9; x, 22, 196, 456.  
 Disinfectants, new, i, 93; ix, 272.  
 Dissocioscope, Tommasi's, vii, 92.  
 Disraeli, Benjamin, sketches, ii, 251; vi, 213; portrait, ii, 354; effect of death of, vi, 359.  
 Disraeli ministry, South African policy of, ix, 346.  
 Diston, H., obit., iii, 636.  
 Distilled water, experiments with, xii, 675.  
 Distilling, illicit, v, 308.  
 Disturnell, J., obit., ii, 578.  
 Dittmar, assaying, i, 524; ix, 662; invention by, x, 344.  
 Divers, experiments by, viii, 111.  
 Divine, G. R., invention by, x, 346.  
 Divorce, in Connecticut, iv, 301; viii, 254; in Delaware, iv, 306; in Vermont, v, 708; in Massachusetts, vi, 535; viii, 519; in Maine, viii, 509; in New Hampshire, viii, 562; bill on, in France, vi, 311; ix, 342; in Rhode Island, viii, 691; ix, 698; in Pennsylvania, ix, 645; in Kansas, xi, 462.  
 Dix, Dorothea Lynde, obit., xii, 581.  
 Dix, John A., sketch, iv, 315.  
 Dix, J. W., obit., ii, 578.  
 Dixon, Archibald, obit., i, 615.  
 Dixon, Harold, experiments by, xii, 106, 112.  
 Dixon, N. F., obit., vi, 681.  
 Dixon, W. H., sketch, iv, 316.  
 Djalyeen, taken by Gordon, ix, 301.

Djehad, law of, x, 316.  
 Doberck, on binary stars, iii, 37.  
 Docks, improvements to, ii, 279, 280; Thames, in London, v, 244; in South Wales, v, 245; at Hartlepool, v, 244; floating, xii, 257.  
 Dodé, invention by, iv, 184.  
 Dodge, Norman W., xi, 346.  
 Dodge, W. E., sketch, with portrait, viii, 232; statue of, x, 367.  
 Dodworth, Thomas, obit., i, 615.  
 Doelsch process, viii, 522.  
 Doering, Prof., xii, 815.  
 Doggett, D. S., obit., v, 592.  
 Dogs, decision as to tax on, ii, 711; article on best breeds, with illustrations, ix, 254; the Chinese edible, ix, 263.  
 Dog-running, ix, 262.  
 Dokpaa, the, x, 397.  
 Dolbear, invention by, vi, 258.  
 Dollinger, Dr., iv, 647; xii, 644.  
 Dollo, observations by, viii, 436.  
 Dolphin, case of the, x, 760.  
 Domenichino, sale of pictures of, x, 361.  
 Dominion of Canada, statistics, legislative proceedings, etc., in every volume; map of Western Provinces, viii, 80; boundaries of provinces, ix, 264-266; attempt to repatriate natives of, ix, 676; veto power of government, ix, 266; exploration in, ix, 349; climate of, x, 583, rebellion in the northwest, x, 124; elective franchise, x, 130; fisheries, x, 132.  
 Dom Pedro, Emperor of Brazil, steel-plate portrait, ii, 75.  
 Donaldson, H. H., experiments, vi, 95; viii, 632.  
 Donavan, M., obit., i, 631.  
 Don Carlos, defeat of, i, 729.  
 Don, Laura, obit., xi, 674.  
 Donders, experiments by, vi, 272.  
 Dondoukoff Korakoff, Prince, x, 9, 10.  
 Donnelly, Dr., x, 455.  
 Dong-son, forts at, battle, x, 25, 27.  
 Dongola, defense of, ix, 297.  
 Doniphan, Alexander W., obit., xii, 582.  
 Donkin, Mr., xii, 318.  
 Donnelly, Terence O., iv, 675.  
 Donyo Egaré, Mount, ix, 347.  
 Doomsday-Book, The New, i, 365.  
 Doomsday-Book, illustration, xi, 407.  
 Doomsday Celebration, xi, 406.  
 Doran, John, obit., iii, 653.  
 Doré, Gustave, sketch, with portrait, viii, 233.  
 Dorides, Count, xi, 454.

- Döring, T., obit., iii, 654.  
 Dörpfeldt, W., ix, 23; x, 37; xi, 84.  
 Dorsey, J. W. See Star-Route Trial, vii, 753.  
 Dorsey, Sarah A., sketch, iv, 323.  
 Dosseh, interdiction of the ceremony, vi, 239.  
 Dost Mohammed, family of, v, 3; relations with the British, v, 4; x, 1.  
 Doton, Hosea, obit., xi, 674.  
 Douck Hanh, King of Anam, x, 82.  
 Dougall, John, obit., xi, 674.  
 Dougall, J. D., x, 153.  
 Dougherty, John, obit., xi, 675.  
 Douglas, Frederick, v, 585.  
 Douglas, James, Jr., x, 577.  
 Douglas, Sir James N., xi, 43.  
 Douls, Camille, explorations by, xii, 305.  
 Doumet, M., x, 155.  
 Dove, H. W., obit., i, 698.  
 Dove, John, obit., i, 615.  
 Dow, Moses A., obit., xi, 675.  
 Dow, Neal, viii, 664.  
 Dowden, Bishop, xi, 21.  
 Dowell, J. R., obit., i, 615.  
 Dowling, Benjamin, obit., i, 615.  
 Dowling, John, obit., iii, 636.  
 Dowling, Joseph, obit., i, 615.  
 Doyle, John, xi, 347.  
 Doyle, Richard, obit., viii, 599.  
 Dragoman Pass, fighting at, x, 728, 730.  
 Dragomiroff, Gen., sketch, ii, 259.  
 Drainage, works for, iii, 288; ix, 717; diagram showing faults of, ix, 718.  
 Drais, Baron von, bicycle invented by, ix, 83.  
 Draisine, the, illustration, ix, 83.  
 Drake, Sir F., x, 138.  
 Drake, Friedrich, obit., vii, 645.  
 Drama, the recent. See Literature, in every volume.  
 Draper, Henry, experiments by, iv, 180; sketch, vii, 218; prize in honor of, ix, 55; xii, 112.  
 Draper, John C., obit., x, 647; xii, 112.  
 Draper, J. W., experiments by, iii, 84; viii, 378; sketch, vii, 219; xii, 36.  
 Dreber, A., obit., i, 631.  
 Dresser, Horace, obit., ii, 579.  
 Drenteln, assassination of, iv, 683.  
 Dreutlin, Gen., iv, 777.  
 Drew, Mrs. Daniel, obit., i, 616.  
 Drift, investigation of, x, 406.  
 Driggs, J. F., obit., ii, 579.  
 Drilling-scow, illustration, x, 470, 471.  
 Driven-well patent, xii, 650.  
 Drouyn de L'Huys, obit., vi, 692.  
 Dropsy, new drug for, ix, 272.  
 Droysen, J. G., obit., ix, 616.  
 Drugs, New, ix, 271; x, 298; xi, 289; physiological action of, ix, 654.  
 Druggists, Association of. See Pharmacy.  
 Drummond, J., obit., ii, 598.  
 Drysdale, Alexander T., obit., xi, 675.  
 Dualine, x, 344.  
 Duallas, the, x, 121.  
 Dubois, Rev. John, x, 562.  
 Du Boie-Reymond, experiments by, x, 692.  
 Dubs, J., obit., iv, 699.  
 Dubuclet, A., contested election of, i, 498; ii, 467.  
 Dubuque, xi, 168.  
 Duchesne, Col., x, 173.  
 Ducks, in United States, x, 387.  
 Duck Lake, engagement near, x, 125.  
 Duclaux, E., experiments by, x, 157.  
 Duclerc ministry, vii, 326.  
 Ducrot, A. A., obit., vii, 646.  
 Dudevant, Madame. See Sand.  
 Dudley, Thomas U., obit., i, 616.  
 Dudley, W. L., discovery by, iv, 137; v, 94, 95; ix, 476.  
 Dudley, William Henry, obit., xi, 675.  
 Duels, challenges to, parliamentary discipline for, vii, 201; punishment for, in the Russian army, x, 20.  
 Duem, battle of, x, 318.  
 Duer, Lillie, iv, 598.  
 Dufaure, Jules Armand Stanislas, Cabinet of, ii, 320; sketch, vi, 222.  
 Duff, Alexander, obit., iii, 654.  
 Dufferin, Lord, in Canada, iii, 246; in India, x, 13, 309, 497.  
 Duffield, Samuel Willoughby, obit., xii, 582.  
 Dufresne, experiments by, vi, 750.  
 Duganne, A. J. H., obit., ix, 604.  
 Dulcigno, contest for, v, 543; surrender, and sketch of, v, 545.  
 Dullert, W. H., obit., vi, 692.  
 Dulles, John Welsh, obit., xii, 582.  
 Dulong, law of relativity, vi, 41.  
 Duluth, Minn., xi, 168.  
 Dumas, J. B. A., obit., ix, 273; experiments by, vi, 42; with Benoit, invention by, iii, 279.  
 Dumbreck, Sir D., obit., i, 631.  
 Dumont, Gabriel, x, 125, 129.  
 Dumont, Léon, obit., ii, 598.  
 Dumoulin, M., xii, 680.  
 Du Motay, C. T., sketch, v, 222; inventions, v, 88; viii, 375.  
 Dunant, Henry, xi, 783.  
 Duncan, Thomas, obit., xii, 583.

- Duncker, Maximilian Wolfgang, obit., xi, 714.  
 Dundas, Sir D., obit., ii, 598.  
 Dunham, Dr. C., obit., ii, 579.  
 Dunkarda. See Baptists.  
 Dunn, John, governor, iv, 126; ix, 114.  
 Dunn, John, in Chinese service, xii, 117.  
 Dunn, William McKee, obit., xii, 588.  
 Dunwoody, H. O., tables, viii, 528.  
 Dupanloup, sketch, iii, 248.  
 Dupin, Charles, characteristics of, vii, 208.  
 Dupin, Jean Henri, obit., xii, 626.  
 Duplay, M., x, 332.  
 Duplessis, Joseph, xi, 347.  
 Dupont, Admiral S. F., statue of, x, 362.  
 Düppel, siege of, x, 382.  
 Dupra, experiments by, x, 157.  
 Duprat, Pierre P., obit., x, 659.  
 Dupré, Admiral, obit., vi, 692.  
 Dupré, Giovanni, obit., vii, 646.  
 Dupuis, Sir J., obit., i, 631.  
 Dupuy, Eliza, obit., vi, 631.  
 Duran, Carolus, xii, 276.  
 Durand, Asher Brown, obit. and port., xi, 292.  
 Durand-Faudel, Dr., classification of mineral waters by, x, 595; xi, 546.  
 Durbin, J. P., D. D., sketch, i, 237.  
 Dürer, portrait by, x, 366.  
 Durgee, G., invention by, vii, 530.  
 Durham, Joseph, obit., ii, 598.  
 Düringsfeld, Ida von, sketch i, 238.  
 Duruy, Albert, obit., xii, 626.  
 Du Saule, Henri Legrand, obit., xi, 715.  
 Dusch, A. von, obit., i, 631.  
 Dussard, Hippolyte, sketch, i, 238.  
 Düsseldorf, illustration, ii, 658; exhibition at, v, 321; xii, 346.  
 Dust-shell of the earth, the, ix, 539.  
 Duties, demand for, in Belgium, v, 55; in Colombia, excessive, v, 16; reduction of, in India, vii, 416; evasions of, viii, 148.  
 Duties, United States, viii, 195, 788; articles duty free, viii, 207; proposed treaty with Mexico, vii, 546.  
 Dutton, Capt. C. E., x, 404.  
 Dutrieux, explorations, iii, 361.  
 Duval, Raoul, obit., xii, 626.  
 Duvergier de Hauranne, L. P. E., obit., ii, 598.  
 Duyokinck, E. A., sketch, iii, 249.  
 Dwellings, construction of, v, 357; laborers', vii, 220.  
 Dwight, George S., x, 580.  
 Dyeing, by electricity, vii, 90; dyes, viii, 114; fustic, viii, 141; improved, v, 90.  
 Dyer, C. V., obit., iii, 636.  
 Dynagraph, xi, 294.  
 Dynamica, ix, 305.  
 Dynamite, manufacture, vi, 228; plots, viii, 415; ix, 377; gun, with illustration, ix, 273; in London, x, 234; x, 344, 454.  
 Dynamo-electric machine, illustration, vi, 253.  
 Dynamogen, x, 346.  
 Eadie, J., obit., i, 632.  
 Eads, J. B., his design for a ship-railway, ix, 313; sketch and portrait, xii, 228.  
 Eames, Dr., invention by, x, 575.  
 Earle, Maj.-Gen. William, obit., x, 660.  
 Early, Gen. Jubal, x, 427, 8, 9.  
 Earth, the, i, 288; ii, 259; iii, 249; v, 222; vii, 221; mass of, ii, 43; theory of solidity, iv, 419; density of, vii, 35.  
 Earths, new. See under Chemistry.  
 Earthquakes, in Austria, i, 59; in Switzerland, v, 677; in Ischia, vi, 451; in Ecuador, viii, 288; in Nicaragua, x, 642; at Lima, ix, 649; in Mexico, x, 590; xii, 504; in Spain, x, 741; in United States, xi, 296.  
 Earthquakes and volcanic disturbances in 1833, viii, 284; at Guayaquil, xii, 232; map showing the extent of, xi, 296; earthquakes of 1668, 1727, 1744, 1755, 1811, 1812, xi, 296-299; illustrations of the Charleston, xi, 300, 301; theories of, xi, 301; observations, xi, 302; instruments for recording illustrations, xi, 308.  
 Earth-tremors, vii, 223.  
 Earth-worms, Darwin on, vi, 224.  
 Easter Island, ix, 275.  
 Eastern Churches, ix, 277.  
 Eastern question, the, ii, 261; iii, 252; v, 224; maps, i, 751, 754; iii, 722, 789; v, 225; conference on, i, 771; ii, 281, 723; Russia's declaration of war, ii, 282; policy of France, ii, 307; iii, 344; contest for Dulcigno, v, 543; new phase, vi, 339; Turkey and Germany, vii, 302; discussed in Hungary, ii, 379; in Italy, ii, 409; iii, 458; iv, 526; in England, ii, 362, 367; iii, 397; v, 331, 333, 335, 343; enforcing reforms in Asia Minor, iv, 333; Turco-Grecian dispute, v, 345; Montenegrin frontier, v, 542; in Austria, ii, 55; iii, 43, 44; xi, 69; in Germany, iii, 378; in Greece, iii, 408; relation to Bulgaria, iii, 67; to Persia, iv, 724; Berlin Congress, iii, 255; treaty between England and the Porte, iii, 258; Russia held by the European League, viii, 705.  
 Eastern Roumelia, iv, 324; Constitution of, v,

- 227; proposed union with Bulgaria, v, 67, 68, 228; insurrection in, v, 229; x, 108, 714.
- Eastman, Harvey G., obit., iii, 636.
- Eastman, Joel, obit., xi, 675.
- Eastman, M. E., obit., ii, 579.
- East Harbor, Me., cottage at, illustration, xii, 364.
- East River Bridge, viii, 311; illustration, iii, 281.
- Eaton, Amos B., obit., ii, 579.
- Eaton, Hosea Ballou, obit., xii, 583.
- Eaton, Margaret L., sketch, iv, 326.
- Eberhard, Rt. Rev. M., obit., i, 632.
- Eberlin, x, 398.
- Ebers, George, x, 35, 36.
- Ebersberg, Ottokar Franz, obit., xi, 715.
- Ecclesiastical courts, viii, 8.
- Ecclesiastical funds, rights over the Bernard affair, viii, 57.
- Eclipse of the sun, vii, 33; viii, 20; x, 49; xi, 49; xii, 41.
- Economical Council, created in Prussia, v, 640.
- Ecuador, statistics, government, in every volume; sectional jealousy, i, 241; rebellion, 241; map, ii, 267; views in, illustrations, i, 241; iii, 260; revolutionary warfare in, i, 242; ii, 266, 268; iii, 260; vii, 225; viii, 287, 288; ix, 281; eighth constitution of, vii, 225; volcanic eruptions, ii, 268; x, 308; xi, 306; earthquake, viii, 288; xi, 281; xii, 282; awarding of contracts, iv, 328; closing of schools, v, 231; debt, vi, 228; brutality to prisoners, x, 303; treatment of foreigners, x, 303; xi, 304; gold-mines, xi, 305; religious intolerance, ix, 282.
- Eddy, H. T., ix, 44.
- Eddystone lighthouse, undermined, ii, 276; the new, iii, 286; iv, 343; vii, 283.
- Edgell, Admiral H. E., obit., i, 632.
- Edhem Pasha, sketch, ii, 268.
- Edison, T. A., sketch, iii, 261; analysis of his genius by G. B. Prescott, iii, 262; inventions by, i, 518; the phonograph, ii, 638; vi, 252, 256; improvements by, viii, 304; electric railway, viii, 677; observations by, iii, 34; the megaphone, iii, 537; microtasimeter, iii, 563; lamp, iv, 335; ix, 305; steam dynamo, with illustration, ix, 306; vii, 270, 275.
- Edmonds, Richard, obit., xi, 715.
- Edmondstone, John, obit., xi, 715.
- Edmunds, George F., sketch, v, 231.
- Edmunds law, ix, 791; x, 764, 773.
- Edmunds-Tucker act, the, xii, 789.
- Edoux, M. L., invention, vi, 246.
- Edson, Franklin, ix, 589; x, 640.
- Education, and illiteracy in the United States, statistics, etc., vii, 225; technical, in Saxony, vi, 229; technical, in Pennsylvania, iii, 680; iv, 719; vi, 549; in Massachusetts, xii, 233; in New Jersey, v, 564; xii, 238; vi, 410; iv, 663; reform in Russia, viii, 708; religious, i, 67, 364, 583, 704; iii, 579; iv, 77, 773, 825; v, 44, 54, 56; vi, 58, 828; vii, 591, 775; Old Catholics on, ii, 622; Leo XIII on, vi, 792; Bible-reading in schools, ii, 182; v, 380; reactionary law in Austria, viii, 47; Ferry bill in France, iv, 390; v, 281; denounced, iv, 394; Episcopal, v, 638; in Ireland, iii, 403; iv, 453; new law in Japan, iv, 529; higher, vi, 49; vii, 31, 339, 481, 508, 536, 796; Magyar school, v, 370; Greek and Bulgarian, ii, 372; Indian, i, 400; Afghan, iv, 7; colored schools, ii, 697; iv, 538, 563, 588; vi, 7, 727; Boston system, iv, 602; New York system, iv, 677; xii, 234; in Missouri, xii, 236; in Illinois, 236; in Ohio, 236; in Maryland, 237; in Pennsylvania, 237; North Carolina bill, iv, 688; qualifications of teachers, iv, 577; v, 564; vi, 574; normal schools, iii, 621; iv, 845; vi, 470; reform schools, v, 567; vi, 463; free high-schools, iii, 511; in Canada, viii, 539, 585, 610; changes in Great Britain, vi, 373; right to exclude pupils, iii, 430; case in Philadelphia, vi, 793; in New Mexico, xii, 544; geography in, xii, 316; industrial, xii, 232; bequest for, xii, 663; of Indians, 386; compulsory, in Germany, xi, 890; in Hawaii, xii, 850; in Nebraska, xii, 576; attitude of Mormons toward, in Idaho, xii, 372; conscience clause of, ix, 12; secularization of, in Belgium, ix, 78; of women, recent progress in, xi, 306; national aid to, 263; in India, xii, 382.
- Education, Industrial, xii, 232.
- Education, recent works on. See Literature, in every volume.
- Edward, Thomas, obit., xi, 715.
- Edwards, Amelia B., x, 35.
- Edwards, Henri Milne-, obit. and portrait, x, 304.
- Edwards, Sir B., obit., i, 632.
- Edwards, W. W., obit., i, 616.
- Eels, James, obit., xi, 676.
- Egan, W. B., obit., iii, 636.
- Egerton, invention by, ii, 498.
- Eggert, F. X., sketch, i, 242.
- Eggertz, experiments by, vi, 97.
- Egleston, T., ix, 477.



Egypt, in every volume; maps, vii, 252; viii, 291; ix, 287; aims of the powers in, ix, 290, 291; brigandage in, ix, 286; religion in, ix, 279; benefits of English rule in, xii, 242; finances of, and exploration in, see Egyptian Chronology, Egyptian Exploration, and Egyptian Finances.

Egyptian Chronology, vii, 255.

Egyptian Conference, ix, 289.

Egyptian exploration, ix, 20; exploration fund, x, 85; xi, 27; xii, 18. See Archæology.

Egyptian Finances, i, 244; ii, 269; iii, 268; iv, 329; Khedive's decree, iv, 331; v, 233; vi, 232; ix, 232, *et seq.*; French and English intervention, vii, 236, 250; new scheme, vii, 363; Italian feeling on, vii, 437; viii, 292; Anglo-French agreement, ix, 288. See Egyptian War.

Egyptian Monuments, vii, 258; ix, 19.

Egyptian War, the, causes leading to, vii, 232; intervention of French and English, 236; bombardment of Alexandria, 244; conference at Constantinople, 244, 248; campaign, 251; Egyptians defeated, 254; questions of settlement, viii, 289-297; political trials, 297; amnesty, 298; ix, 292, *et seq.*

Egyptians, modern, illustration, ii, 271.

Egyptological and Assyriological Research, vii, 255.

Ehrbar, F., invention by, i, 518.

Ehrenberg, C. G., sketch, i, 248.

Ehrenfeuchter, obit., iii, 654.

Ehrlich, L., x, 159.

Eichens, F. E., obit., ii, 599.

Eichwald, K. E., obit., i, 632.

Einwald, Herr, x, 137.

Eira, cruise of, vi, 325; vii, 334.

Ekmann, G., obit., i, 632.

Ekmeen, relics at, ix, 22; necropolis of, x, 33.

Elatea, inscribed stone found at, x, 37.

Elbers, H. D., invention by, xi, 537.

Elbirin-Kir Mountains, x, 67.

El Coco, engagement at, x, 466.

Elder, John, x, 62.

Elder, Robert, obit., xii, 583.

Eldridge, Dr. E., obit., i, 616.

Election laws, x, 321.

Election sermons, vi, 584.

Elections: presidential, of 1876, i, 298, 779; of 1868, x, 432; of 1880, v, 702; of 1884, ix, 149, 210, 774; x, 228; proposed amendment regarding, i, 132, 158; Pres. Grant on, i, 685; disqualifications of candidates, i, 702; bill on counting votes, ii, 187; iii, 167; iv,

207; vi, 176; ix, 210; debate on rights at, iv, 194, 226; on marshals, v, 152; electoral vote, x, 228; regulation for counting the electoral vote, xii, 165; bill on counting votes, ii, 187; President's message on, ii, 163; work of Electoral Commission, ii, 169; ix, 627; xi, 820; reports on frauds, iii, 712; Tilden on, iii, 717, 802; Anderson trial, iii, 494; of Greek patriarch, xii, 773; special, in Rhode Island, xii, 714; Crawford County plan of, xii, 247; Clarion County plan of, xii, 248; Australian system, vii, 246.

Election riots, i, 71; v, 22, 204, 275.

Elections, contested, i, 297; ii, 455, 694, 748; iii, 834; iv, 894, 532, 532; v, 486; vii, 564; proceedings in, xii, 384, 386; State acts to prevent frauds and corruption, ii, 515, 572, 748; iv, 108, 497, 601; v, 202, 418, 717; vi, 205, 535; viii, 410, 567; power of Congress touching, viii, 474; Federal interference, ii, 710; iv, 561; primary, New York, bill, vii, 600.

Elections, Laws, Customs, and Theories of, xii, 244; of Austria, vii, 46; of Italy, vii, 438.

Electrical energy, storage, vii, 264.

Electrical Exhibition, ix, 304.

Electricity, i, 248; dimensions of iron in current, i, 251; applications of, i, 518-520, 740; ii, 497, 498; effect on plants, iii, 725; exhibition at Paris, vi, 252; recent theories, vi, 239; measurement, vi, 259; possible applications, vi, 548; xi, 545; xii, 494; applied to the treatment of ores, 485; x, 578; in welding, xii, 486.

Electric Light, nitric acid from, iv, 185; vegetation under, v, 237.

Electric Lighting, iii, 269; v, 288; illustrations, v, 239, 240; Edison's, iv, 335; systems, vi, 252; ix, 304, 515; progress of, vii, 268; act of Parliament on, vii, 366; progress, viii, 302; use in France, i, 520; candles and lamps, illustrations, iii, 271-274; the alliance machine, illustrations, iii, 275-278.

Electric Motors, i, 251; ix, 307, 309.

Electric railways, viii, 675; ix, 310.

Electroplating, ii, 498; vii, 538; with aluminum, xii, 438.

Elements, new, iii, 86; iv, 137; xi, 139; nature of, iii, 91; iv, 133; vi, 240; constitution of the, ix, 120; table of atomic weights, vi, 41; families, vi, 42.

Elephants, Indian, use of, in African exploration, iii, 362.

El Hadsh, sketch, i, 570.

- Elio, Joaquin, sketch, i, 252.  
 Eliot, George, sketch, v, 241.  
 Eliot, S. H., xi, 545.  
 Elliot, William Greenleaf, obit., xii, 584.  
 Elizabeth, N. J., xi, 169; bankrupt, iv, 669.  
 Elkin, observations by, viii, 26; ix, 47.  
 Ellet, Mrs. E. L. F., sketch, ii, 272.  
 Elliott, J., observations, iii, 37.  
 Elliott, J. H., D. D., obit., ii, 579.  
 Elliott, Judge John M., murder of, iv, 541.  
 Elliott, H. W., vii, 7.  
 Ellis, Sumner, obit., xi, 676.  
 El Mahdi. See Mahdi.  
 Elmira, N. Y., xi, 169; Reformatory, xii, 708.  
 Elmore, H. M., obit., iv, 698.  
 El Obeid, taken by El Mahdi, viii, 800.  
 Elsberg, Louisa, obit., x, 647.  
 Elsinore, Kronborg castle at, illustration, ii, 250.  
 Elssler, Fanny, obit. and portrait, ix, 810.  
 El Teb, battle of, ix, 293, 295.  
 Elton, Capt., discovery, iii, 363.  
 Eltzbacker, experiments by, x, 157.  
 Elwart, A. A. E., obit., ii, 599.  
 Ely, J. S., experiments by, vii, 690; viii, 635.  
 Ely, Nathan C., obit., xi, 676.  
 Emancipation, in Brazil, viii, 67; xii, 73; in Cuba, x, 215.  
 Emanuel, M., obit., v, 592.  
 Embezzlement, act on, in Connecticut, iii, 216.  
 Embroidery, ix, 248.  
 Emerald, the largest, x, 179.  
 Emerson, Ralph Waldo, sketch, vii, 277.  
 Emery-wheels, xii, 248.  
 Emigration, German, vii, 348; to Palestine, viii, 614; state-aided, from Ireland, viii, 418; of coolies from India, viii, 440; from Italy, viii, 449. See Chinese and Exodus.  
 Emin Paasha (Dr. Schnitzler), x, 394; xi, 312, 367; xii, 250, 301.  
 Emma Kaleleonalani, obit., portrait, and house, x, 326.  
 Emmerich, Dr., x, 800.  
 Emmons, S. F., x, 404; xi, 538.  
 Emmonsite, new mineral, xii, 106.  
 Emott, J., obit., ix, 604.  
 Emperors, meeting of three, ix, 64, 356; xi, 391; meeting of two, x, 69, 70.  
 Employers' liability, ix, 379, 432.  
 Emu, the, illustration, ii, 51.  
 Eneke, his estimate of the sun's distance, ix, 49; his comet, x, 50.  
 Endicott, William C., sketch, x, 757; portrait, 759.  
 Engel, Prof., x, 154; invention by, 345.  
 Engelhard, J. A., sketch, iv, 339.  
 Engelmann, T. W., ix, 517.  
 Engineering, in every volume.  
 Engines, solar, vi, 251; improvements in steam, ii, 494, 495; vi, 545; the water-gas, x, 384.  
 English, the, in Asia, vi, 732; ix, 714; in Africa, ix, 363; x, 137, 795-796; in Sumatra, ix, 558; benefits of their rule in Egypt, xii, 242. See also under Africa and Asia in articles on Geographical Exploration.  
 English Channel Tunnel Panic, vii, 284.  
 English, J. E., sketch, i, 203.  
 Engravings, famous collection of, xii, 277.  
 Enliedjian, Abbé, obit., xi, 715.  
 Enlistment Act, British foreign, x, 171.  
 Eno, John C., ix, 329.  
 Enraght, Rev. W., case of, vii, 17.  
 Ensilage. See Silos, vi, 808; an analysis of, ix, 127.  
 Entail, law of, changes, x, 457, 522.  
 Entero-Chlorophyl, ix, 658.  
 Envelopes, paper, xi, 734; illustrations, xi, 735, 736, 737; stamped, special-request, and letter-sheet, xii, 686.  
 Eolian Harp, x, 607.  
 Eosin, i, 102.  
 Epidemic Diseases in 1883, viii, 317; sanitary control of, vii, 286; maps of infected districts, vii, 291, 292; prevention of the spread of, x, 506.  
 Equalla Jim, chief, x, 121.  
 Equatorial Coudé, the, ix, 47.  
 Equites Singulares, barracks of, xi, 35.  
 Erichsen, A. L. von, obit., i, 632.  
 Erie Custom-House, illustration, xii, 120.  
 Erk, Ludwig, obit., viii, 599.  
 Erman, G. A., obit., ii, 599.  
 Ersari Turkomans, the, x, 7.  
 Erskine, Admiral, ix, 639, 640.  
 Eruptions, volcanic, xi, 66, 306, 557, 653.  
 Erysipelas, viii, 753.  
 Erythro-cerallioides, xi, 140.  
 Escourt, Sir T. H., obit., i, 632.  
 Escurial, the, illustration, i, 728.  
 Esmonde, Sir J., obit., i, 632.  
 Espana, Capt., x, 141.  
 Espartero, Duke, sketch, iv, 348.  
 Espen, T. E., observations by, vi, 39; vii, 40; viii, 27.  
 Esquiline Hill, necropolis at the, xi, 34.  
 Esquiros, H. A., sketch, i, 253.  
 Este, D. K., obit., i, 616.

Estee, M. M., sketch, vii, 82.  
 Estorge, J. L., obit., v, 592.  
 Estrup, J. B. S., ix, 253; x, 290, 292; attempt to assassinate, 293.  
 Etherization, rectal, ix, 747; in cholera, x, 800.  
 Ethnology, bureau of, xii, 15.  
 Ethylene, for liquefying oxygen, x, 152.  
 Etna, eruption of, viii, 286; xi, 360; new crater, 380.  
 Ettmüller, E. L., obit., ii, 599.  
 Eulenberg, Count, obit., vi, 692.  
 Eulenberg, Prof., investigations by, x, 689.  
 Eulexia, x, 151.  
 Eponym, x, 299.  
 Euphorbia pilulifera, x, 299.  
 Europe, in volumes i to v inclusive.  
 Evangelical Alliance, the, i, 261; ii, 282; iv, 350; on intolerance in Bohemia, iv, 351; ix, 316.  
 Evangelical Association, in every volume but ix and xi.  
 Evangelical Union of Scotland, iii, 294.  
 Evans, Marian. See Eliot, George, v, 241.  
 Evans, William, obit., iii, 654.  
 Evanston, University Hall at, illustration, ii, 385.  
 Everts, William, obit., iii, 636.  
 Everts, W. M., sketch, ii, 284; etched portrait, ii, 284; speech on Seward, i, 717.  
 Eve, Dr. P. F., obit., ii, 579.  
 Events of 1883, viii, 321; of 1884, ix, 317; of 1885, x, 334; of 1886, xi, 323; of 1887, xii, 262.  
 Everest, not the highest mountain, ix, 349, 543, 544.  
 Everett, experiments, ii, 500.  
 Everglades, the, viii, 342.  
 Evictions, in Ireland, xii, 339.  
 Ewald, Prof., experiments, x, 693.  
 Ewer, F. C., obit., viii, 588.  
 Ewing, Charles, obit., viii, 588.  
 Examinations for civil service. See Reform in the Civil Service, viii, 684; ix, 690.  
 Exchange, Copenhagen, illustration, i, 228.  
 Exercise, physiology of, vii, 688; of infants, 689.  
 Exhibition, Centennial, i, 22, 262, 685, 778; appropriation for, 193-202; illustrations of, 264, 265, 272, 273, 275, 277, 278, 279; leather, in Berlin, ii, 352; paper, in Berlin, iii, 381; arts, in Japan, ii, 414; Australian, ii, 52; iv, 55; v, 39, 40; Paris, iii, 294; Egyptian contribution to Paris, iii, 268; appropriation of Denmark, ii, 249; of electricity at

Paris, vi, 252; Atlanta cotton, vi, 260; Southern, at Louisville, viii, 464; in Santo Domingo, viii, 713; in Calcutta, ix, 407; New Orleans, ix, 573; Colonial, xi, 60; in Antwerp, x, 91; in Hungary, x, 78; Paris, of 1889, xii, 297.  
 Exhibitions, picture. See Fine Arts.  
 Exner, experiments by, vi, 748; vii, 688.  
 Exodus of colored people, iv, 354, 537, 634; v, 417; vi, 812.  
 Explorers, see under Geographical Exploration, in every volume; murder of, iv, 6.  
 Explosions, boiler, causes and prevention of, vi, 259; experiments, vii, 296.  
 Explosives, ii, 626; iii, 98; iv, 181; German law on, ix, 357; x, 342; new, x, 158; xi, 140.  
 Exposition, Centennial. See Exhibition, Centennial.  
 Exposition, International Cotton, at Atlanta, vi, 260.  
 Exposition, New Orleans, ix, 573.  
 Exposition, Paris, iii, 294.  
 Express companies, liability of, ii, 753; v, 14.  
 Extradition treaties, i, 232, 361, 733; difficulty with Mexico, ii, 513, 712; with Spain, ii, 699; decisions on, iii, 473; v, 585; case of Randazzo, vi, 451; United States and Belgium, vii, 67; viii, 157. See Winslow.  
 Eyck, Jan van, xi, 346.  
 Eye, the human, attempts to replace, x, 742.  
 Eye-sight, its defects and treatment, vi, 271.  
 Eyttinge, experiments by, vii, 33.  
 Fabbrizzi, N., obit., x, 660.  
 Faber, P. C. F., obit., ii, 599.  
 Factory-inspection, in New York, xii, 549.  
 Fahlberg, Dr. C., xii, 109.  
 Fahnejeim, invention by, x, 344.  
 Failures in business, 1883, viii, 327.  
 Faience, viii, 641.  
 Fairbanks, Horace, i, 797.  
 Fairbanks, Thaddeus, obit., xi, 676.  
 Fairchild, Charles Stebbins, sketch and portrait, xii, 775.  
 Fairfield, Francis Gerry, obit., xii, 585.  
 Fairlie, R. F., obit., x, 660.  
 Fair Oaks, battle of, x, 558.  
 Fair-Trade League, xi, 328.  
 Fairy rings, ix, 127.  
 Faith-Cure, xi, 329.  
 Fakoos, x, 36.  
 Falchi, Dr. I., archæological discovery, xi, 35.

- Falk laws, the, iii, 736; iv, 773; vi, 792; vii, 857, 858 (note); viii, 895.
- Falke, J. F. G., obit., i, 632.
- Falk, Prof., xii, 678.
- Falkenhayn, Count, iv, 60.
- Falkland Islands, vi, 274.
- Fall River, Mass., xi, 169.
- Fallières, M., viii, 366.
- Fallows, Samuel, sketch, i, 698.
- Falls, M. N., obit., i, 616.
- False Prophet, the. See Mahdi.
- Famines, in China, i, 110; ii, 100; iii, 98; in India, i, 404; ii, 42, 392; iii, 486; iv, 494; vi, 419; in Brazil, iii, 64; in Egypt, iv, 384; caused by goats, in India, ix, 406; in Asia Minor, xii, 774.
- Famine, in Persia, v, 623; in Turkey, v, 690; in Iceland, vii, 191; in Highlands, viii, 418.
- Fanfani, P., obit., iv, 699.
- Faneuil Hall, illustration, i, 512.
- Faralep Island, x, 139.
- Fargo, William O., obit., iii, 636.
- Fargo, William G., obit., vi, 682.
- Fargus, F. J., obit. and portrait, x, 847.
- Faris, Ahmed Effendi, obit., xii, 627.
- Farley, J. T., sketch, ii, 285; obit., xi, 677.
- Farmers', Minn., Board of Trade, iv, 623; Cal., convention of, vii, 82; xi, 806; congress, xi, 330.
- Farms and live-stock in the United States, vii, 298.
- Faroe Channel, ridge in, vii, 331.
- Farr, E. W., obit., v, 592.
- Farre, Arthur, obit., xii, 627.
- Farre, Gen., sketch, iv, 386.
- Farrell, Thomas, obit., v, 592.
- Farrelly, Philip., obit., iii, 636.
- Fata Morgana, the, illustration, xi, 565.
- Fat-cells, vii, 689; controversy on the formation of, ix, 273.
- Fathers of the Holy Spirit, the, x, 712.
- Fatigue, experiments on the laws of, xii, 676.
- Faucher, Julius, obit., iii, 654.
- Faulkner, Charles J., obit., ix, 605.
- Faure, O. A., inventions by, vi, 254; vii, 265.
- Faurie, G. A., new process with alumina, xii, 482.
- Faustle, Johann, obit., xii, 627.
- Favre, A., experiments by, iv, 379.
- Favre, J. O. G., sketch, v, 255.
- Favre, L., work on the St. Gothard Tunnel, iii, 290.
- Fawcett, Henry, sketch and portrait, ix, 323.
- Fawcett, Millicent G., ix, 323.
- Fawkes, Capt. H., obit., i, 633.
- Fawsitt, Miss Amy, obit., i, 616.
- Fay, F. B., obit., i, 616.
- Fayetteville, capture of, x, 429.
- Fazy, J. J., sketch, iii, 314.
- Featherstonehaugh, G. W., x, 401.
- Fechter, O. A., sketch, iv, 358.
- Federal jurisdiction. See Law, vi, 477.
- Federation, British scheme of, ix, 380.
- Feeding-stuffs, digestibility of various, xii, 676.
- Feejee, cannibalism in, i, 58; war-canoe, illustration, ix, 117; controversy over land-titles, x, 419.
- Fehling, H., obit., x, 660.
- Feld, E., obit., i, 633.
- Felzi Pasha, sketch, ii, 285.
- Felkin, Mr., on technical education in Saxony, vi, 229.
- Fellows, John F., obit., xii, 585.
- Fenians, supposed conspiracy of, vi, 370; intended raid into Canada, x, 431.
- Fenn, Mary, obit., xi, 677.
- Fenton, Reuben E., obit., x, 348.
- Fenyés, A., sketch, i, 281.
- Ferdinand, King, obit., x, 660.
- Ferdinand, Prince, xii, 80.
- Ferenz, Rev. Joseph, i, 778.
- Ferghana. See Khokan, i, 775.
- Fergus, Andrew, experiments by, ix, 728.
- Fergusson, Sir W., obit., ii, 599.
- Ferig Pasha, x, 319; his death, 320.
- Ferments in fruits, vii, 92.
- Fernkorn, A., obit., iii, 654.
- Ferna, ix, 95.
- Ferran, Dr., cholera experiments of, x, 797, 798.
- Ferranti's invention, vii, 269, 270.
- Ferrari, Giuseppe, sketch, i, 282.
- Ferrari, meteorological observations by, xi, 543; xii, 491.
- Ferrie, William, method for obtaining ammonia, viii, 114.
- Ferrier, Capt. J. M., obit., i, 616.
- Ferrier, I. P., experiments by, vi, 748; ix, 661; discovery, vii, 37.
- Ferrieri, Cardinal, death of, xii, 717.
- Ferrous sulphide, as plant food, x, 158.
- Ferry, right of the United States to acquire a, iv, 847.
- Ferry, J. F. O., sketch, iv, 387; bill of, v, 281; fall of ministry of, vii, 324; Cabinet, viii, 367; ix, 340, 341; quoted, 57; Chinese policy of his government, x, 26; Egyptian policy, x, 310, 311; resignation, x, 375; demon-

stration against and attempted assassination of, xii, 297.

Fertilizer, vi, 275; of S. C., vi, 814; phosphorite, viii, 701.

Feuchtwanger, experiments by, viii, 522.

Feud, an ancient, ix, 845.

Feuerstack, experiments, viii, 633.

Fenillée, Felix M., viii, 857.

Fetsch, E., obit., ii, 599.

Fever, action of remedies, vii, 690; new remedies, ix, 271; x, 300; xi, 289.

Fever, yellow, iii, 315; iv, 859; vii, 298; map of infected district, vii, 292. See also Health, iv, 466; Epidemic Diseases, viii, 819; and Germ Theory, iii, 387.

Fibers, tests for distinguishing animal from vegetable, xii, 110.

Fichte, I. H., obit., iv, 699.

Fiction, recent works of. See Literature in every volume.

Field, Mrs. David Dudley, obit., i, 616.

Field, George R., obit., iii, 637.

Field, S. D., inventions, viii, 677.

Fields, James T., sketch, vi, 288.

Fiertz, Dr., xii, 482.

Figner, Vera, ix, 711.

Figueroa, Gen., x, 467.

Fiji Islands. See Feejee.

Fildes, Luke, x, 365.

Fillmore, Caroline, obit., vi, 682.

Finances of Egypt. See Egyptian Finances.

Finances of India, censure of management of, iv, 492, 494.

Finances of the United States, in every volume. See also Commerce, etc., vi, 120; vii, 110; and for finances of the various countries, see articles on the countries in each volume.

Financial crisis over the world, ii, 109.

Financial review of 1883, viii, 332; of 1884, ix, 323; of 1885, x, 348; of 1886, xi, 332; of 1887, xii, 264.

Financial depression, in Peru, i, 665; in Ohili, iii, 12; in England, iv, 175; in Germany, iv, 180; cause of, iv, 168.

Fine Arts in 1884-'85, x, 358; in 1886, xi, 342; in 1887, xii, 274.

Finland, ix, 706; x, 720.

Finlay, W. H., discoveries by, vii, 87; xi, 57.

Finley, Lieut. John P., x, 581.

Finotti, J. M., sketch, iv, 370.

Finsch, Dr., x, 681.

Fique fiber, new material for textile fabrics, xii, 140.

Fire-arms, etc., Alabama law against carrying, vi, 5.

Fire-balls, xii, 494.

Fire-escape, illustrations, xii, 665, 666.

Firemen, inventions for, i, 518.

Fire-place and chimney, Galton's, illustrations, v, 360, 362.

Fires, Brooklyn Theatre, i, 605; Czech Theatre, vi, 50; Vienna Theatre, vi, 51; in Quebec, vi, 221; in Michigan, vi, 586; in Haverhill, vii, 520; in Galicia, xi, 73; in Hungary, xii, 53.

Firman, Louis, x, 381.

Firuzhuhi tribe, the, x, 8.

Fischer, Dr. G. A., x, 394; obit., xi, 715.

Fish, culture and preservation of, iv, 668; as a food, viii, 348, 791.

Fish, Asa I., sketch, iv, 370.

Fish, Benjamin, obit., v, 592.

Fish, Rev. Henry C., obit., ii, 579.

Fish Commission, U. S., viii, 791; x, 764.

Fish Creek, battle of, x, 125.

Fish-culture in the United States, with illustrations, viii, 791.

Fisher, Sir J. W., obit., i, 633.

Fisheries, Chinese, in California, iii, 71; protection in California, v, 75; salmon, in Oregon, iii, 671; vii, 670; viii, 612; shad, in Maryland, iv, 591; on the Connecticut River, vi, 639; New Jersey, vii, 598; French, in Newfoundland, xi, 406.

Fisheries of United States in 1880, vii, 309.

Fisheries, U. S., statistics, viii, 795.

Fishery Convention, International, vii, 590.

Fishery Exhibition at Berlin, v, 321; representation of United States at, v, 150.

Fishery Questions, between United States and Canada, ii, 15, 258; iii, 247; iv, 15; v, 218; vi, 776; x, 182; xi, 131; payment and protest, iii, 242; President Hayes on, v, 648; Fortune Bay outrage, v, 218; x, 132; French Shore Question, xi, 614; riots, xii, 66; bill to protect, xii, 178.

Fishery Questions, review of the subject from the time of the Revolutionary War, xii, 280-285; treaties, 281, 292; recent disputes, 282; the American case, 283; retaliatory legislation, 283; diplomatic arrangements, 284; French rights, 284; North Pacific dispute, 284.

Fitton, James, obit., vi, 682.

Fitzean, experiments by, vi, 41.

Fitzgerald, Sir J. F., obit., ii, 599.

Fitzroy, Capt., vii, 183.

Fitzmaurice, Lord E., ix, 296.  
 Five-cent-fare bill, the, ix, 147.  
 Five Forks, battle of, x, 429, 430.  
 Flagg, W. C., obit., iii, 637.  
 Flageolet-player, x, 613.  
 Flame, luminosity of, iii, 85; temperature, 93.  
 Flameng, François, x, 358, 363; xii, 275.  
 Flanders, castle of the counts of, illustration, iii, 56.  
 Flatters, G., explorations, v, 293.  
 Flaubert, G., obit., v, 599; x, 358.  
 Flavia Publicia, statue of, ix, 27.  
 Flax, culture of, xi, 532.  
 Flegel, Robert E., observations by, v, 290; ix, 348; x, 393; obit., xi, 715.  
 Fleischer, K. M., obit., i, 633.  
 Fleitman, Dr., discoveries by, vi, 542; viii, 522.  
 Fletcher, Alice C., ix, 16, 44; x, 45.  
 Fletcher, A. E., xii, 106, 108.  
 Fletcher, Thomas, experiments by, xi, 742.  
 Fleury, E. F., obit., ix, 616.  
 Flint, Austin, obit. and portrait, xi, 348.  
 Flood Rock, x, 473; illustrations of excavations, x, 473, 474; explosion, 475.  
 Floods, in China, i, 110; viii, 128; in South America, i, 333; in Germany, i, 348; viii, 397; in Hungary, i, 388; iv, 477; in Nevada, iii, 601; in France, i, 318; in Illinois, v, 380; protection against, in Mississippi, iv, 635; in Arkansas, vii, 31; in Tyrol, vii, 59; in Italy, vii, 438; in Louisiana, vii, 480; in the Ohio Valley, viii, 339.  
 Floquet, M., ix, 342; x, 376; xii, 291.  
 Florida, government, legislative proceedings, statistics, nominations, and elections, in each volume; illustrations, i, 296, 297, 300; presidential election of 1876, excitement and investigation, i, 297-306; ii, 297; State election investigations, iii, 334; iv, 374; v, 274; frauds, 275; issue of bonds, iv, 371; Indian Trust Fund bonds, v, 269; railroads, iv, 373; v, 272; vii, 312; xii, 287; climate, iii, 331, 332; ship-canal project, iv, 377; vi, 312; ix, 332; harbor improvement appropriations, v, 273; need of coast defenses, xii, 288; proposed reclamation of swamp-lands, vii, 312; viii, 342; ix, 332; xii, 287; cold weather in, xi, 350; minerals in, xii, 288; constitutional convention, x, 368.  
 Flotow, F. von, obit., viii, 599.  
 Flourens, theory of, viii, 634.  
 Floyd, Gen. John B., x, 423.  
 Floyd, Sally B., sketch, iv, 373.  
 Fludyer, Sir S., obit., i, 633.

Fluorine, free, vi, 99.  
 Flute, mechanical, x, 613.  
 Fluting-machine, extension of patent, xii, 650.  
 Fly River, explored, iv, 409.  
 Flying Dutchman, the, illustration, xi, 567.  
 Fogg, George G., sketch, vi, 301.  
 Fogs and Clouds, Genesis of, v, 275; fog-signals, v, 447; viii, 719.  
 Foix, Count of, ix, 345.  
 Foley, Thomas, sketch, iv, 379.  
 Folger, Charles J., sketch, v, 576, and ix, 334; portrait, vii, 807.  
 Folkhard, Charles W., xi, 111.  
 Foltz, Philipp von, obit., ii, 600.  
 Fontaine, locomotive of, vi, 511.  
 Fontpertuis, Ad. de, vii, 70.  
 Foo-Ohow, Chinese picture of the battle of, ix, 142.  
 Food-Preservation, vii, 315.  
 Fontes, Periera de Mello, A. M., obit., xii, 627.  
 Foods, nutritive values of, vi, 670; viii, 342; charts showing composition of, 344, 345; adulteration of, see Adulteration.  
 Foot, Samuel A., obit., iii, 637.  
 Foot-and-Mouth Disease, viii, 348.  
 Foote, Henry S., sketch, v, 276.  
 Foote, R. E., obit., iv, 693.  
 Forbes, David, obit., i, 633.  
 Forbes, George, on planets, v, 34; xi, 55.  
 Forcite, x, 345.  
 Ford, Budd G., obit., iv, 693.  
 Ford, Edward L., obit., v, 592.  
 Ford, Rev. James, obit., ii, 600.  
 Ford, Mary A., obit., i, 616.  
 Ford, Mr., xi, 49.  
 Fordyce, Sir J., obit., ii, 600.  
 Foreign Exchange. See under Financial Review, in vols. viii to xii.  
 Foreign Contract Labor, x, 231.  
 Forel, observations by, viii, 526.  
 Forestry, viii, 349; ix, 796; in Mexico, ix, 493; x, 635.  
 Forests, area of, in Europe, vii, 317; destruction of, v, 650; viii, 164; cedar and pine in Mexico, viii, 538; Adirondack, viii, 356, 576; ix, 582; influence on climate, xi, 544; preservation of, in South Africa, x, 135.  
 Forests of United States, vii, 316.  
 Formation of Mountains, iv, 379.  
 Formosa, the French in, ix, 140, 141, 338; x, 30, 171. See China, x, 171, 172.  
 Forney, John W., sketch, vi, 302.  
 Forrest divorce case, the, ix, 626.  
 Forrest, Nathan B., sketch, ii, 299.

Forsberg, G. A., ix, 478.  
 Forster, Dr. Bernhard, xii, 649.  
 Forster, Sir George, obit., i, 633.  
 Förster, Heinrich, obit., vi, 693.  
 Forster, John, sketch, i, 306.  
 Forster, W. E., sketch, v, 276; obit., xi, 350.  
 Forsyth, Col. John, obit., ii, 579.  
 Forsyth, Rev. John, obit., xi, 677.  
 Fort Donelson, siege of, x, 423.  
 Fort Fisher, siege of, x, 428, 429.  
 Fort Harrison, capture of, x, 428.  
 Fort Henry, surrender of, x, 423.  
 Fort Pitt, x, 128, 129.  
 Forts, Chinese, capture of, x, 25.  
 Forth Bridge, viii, 315; ix, 312; x, 328; illustrations, x, 329.  
 Fortune, Robert, obit., v, 599.  
 Fortune Bay outrage, v, 218; xii, 282.  
 Fossil Birds, vi, 303.  
 Foster, Abby Kelly, obit., xii, 585.  
 Foster, Charles, iv, 705; vi, 702.  
 Foster, Charles J., obit., viii, 589.  
 Foster, Joel, obit., ix, 605.  
 Foster, J. W., x, 402.  
 Foster, Lafayette S., sketch, v, 277.  
 Foucard, M., x, 37.  
 Foucault, invention by, iii, 270.  
 Foulis, Sir H., obit., i, 633.  
 Fouqué, F., experiments by, x, 156.  
 Fourneaux, invention by, x, 616.  
 Fournier, Edouard, obit., v, 599.  
 Fournier, Félix, obit., ii, 600.  
 Fournier, G., invention by, v, 93.  
 Fourtoun, Barry de, sketch, ii, 319.  
 Fowler, Orson S., obit., xii, 585.  
 Fox, Edward, obit., vi, 633.  
 Fox, George L., obit., ii, 579.  
 Fox-hound, the, ix, 258.  
 Fox-terrier, the, ix, 261.  
 Fra Angelico, painting of, x, 366.  
 France, government, statistics, elections, legislative proceedings, etc., in each volume; army law and organization, i, 309; illustrations, views in, i, 313, 314, 316, 317; ii, 308, 310, 312, 314, 316, 317; iii, 344, 346; iv, 390, 393; map of Paris, ii, 306; amnesty debate, i, 315; bill passed, iv, 389; v, 284; liberty of the press, ii, 305; Catholics in, ii, 306; iii, 348, 349; resignation of M. Simon, ii, 307; De Broglie cabinet, 308; political excitement, 307-316; political map of France published, 314; MacMahon's proclamation, ii, 315; great number of political prosecutions under De Broglie ministry, iii, 343;

resignation of MacMahon and election of Grévy, iv, 388; colportage bill, iii, 343; changes in Senate, 347; new cabinet, iv, 386; election of Gambetta, 388; stormy debate, 391; vote of condemnation of De Broglie ministry, 390; African policy, v, 280; Bas-tille celebration, v, 285; address by Gambetta, vi, 310; divorce bill, vi, 311; ix, 342; Tunis and Algeria, vi, 310; vii, 322; viii, 358; ix, 339; xii, 298; Gambetta re-elected, vii, 324; his resignation, 325; his death, 326; Freycinet ministry, 325; resignation, 326; Duclerc ministry, 326; pretenders, 326; viii, 365, 366, 367; x, 355; Duclerc's resignation, viii, 366; Ferry ministry, viii, 367; socialist agitations, 368; x, 373; labor legislation, viii, 369; anti-clerical legislation, 370; war in Tonquin and Madagascar, 370; ix, 338, see Tonquin and Madagascar; Annam, ix, 337; xii, 298; Morocco, ix, 339; annexation of Cambodia, and in Africa, 339; relations with Germany, 339; revision of the constitution, 340; recidivists, 342; x, 378; taxes on wheat and sugar, ix, 343; economic crisis, 344; silk industry, 345; change of government, x, 375; Brisson cabinet, 376; tariff war with Roumania, 377; Alsace-Lorraine, 380; colonies, 381; xi, 360; xii, 298; new cabinet, De Freycinet, xi, 352; expulsion of the princes, xi, 355; Boulanger, xi, 356; xii, 292; reconstitution of the cabinet, xi, 357; strikes, 358, 359; resignation of Grévy and election of Sadi-Carnot, xii, 288; Goblet ministry, 290; Rouvier cabinet, 291; irritation against Germany, 293; manifesto of the Count of Paris, 293; sale of decorations, 294; Wilson scandal, 294; presidential crisis, 295; Tirard cabinet, xii, 297; treaty with China, xii, 117; claims to the lower Congo, x, 191.  
 France, Robert H., obit., xi, 677.  
 Franchi, A., obit., iii, 654.  
 Franchise in Great Britain, ix, 374; x, 451, 452.  
 Francis, Charles Joseph, of Austria, obit., iii, 654.  
 Francis, Charles S., obit., xii, 586.  
 Francis Joseph, Emperor, iii, 41; silver wedding of, iv, 67; portrait on steel, xi, frontispiece.  
 Francis, Lewis, obit., ii, 580.  
 Francis, Sir Philip, obit., i, 633.  
 Franciscine, xi, 290.  
 Franclieu, Marquis de, obit., ii, 600.

- Franco-German War. See Chanzy, viii, 107.  
 Franke, M., xii, 108.  
 Franking privilege, vi, 138.  
 Frankland, Percy F., experiments, ix, 119; x, 149, 160, 161.  
 Franklin, J. R., obit., iii, 637.  
 Franklin, Sir John, search for, ii, 324; v, 298.  
 Fraser, A. T., xi, 542.  
 Fraser, J., obit., x, 660.  
 Fraternity of Jesus, the, ii, 22.  
 Frauds, alleged, of officials in Georgia, iv, 421.  
 Fraunhofer's lines, cause of, xii, 412.  
 Frederick William, Prince (emperor) of Germany, iii, 372; portrait, xii, 321; illness of, 327.  
 Frederick William, Prince of Hesse, obit., i, 633.  
 Fredericksburg, battle of, xi, 416.  
 Fredro, Count, obit., i, 633.  
 Free Church of England, i, 319; ii, 321.  
 Free Church of Scotland. See under Presbyterians.  
 Freedom of Worship bill, the, x, 634.  
 Freeman, Mrs. E., obit., i, 616.  
 Freeman, John D., obit., xi, 677.  
 Free Religious Association, vii, 326.  
 Free thinkers, Congress of, v, 55.  
 Free-Will Baptists. See Baptists.  
 Freezing mixtures, xi, 428.  
 Freiligrath, Ferdinand, sketch, i, 319.  
 Frelinghuysen, F. T., sketch and portrait, vii, 306; letter of, 192; obit., x, 648.  
 Frémentin, E., obit., i, 633.  
 French advances in Central Africa, v, 280; vii, 335, 336; ix, 168; in Eastern Africa, ix, 339; x, 392, 393; in Tonquin. See Tonquin.  
 French Artists' Exhibition. See under Fine Arts.  
 French, Daniel C., x, 362.  
 French, Capt. John, x, 126.  
 French, Rev. M., obit., i, 616.  
 French, Virginia L., obit., vi, 683.  
 French Spoliation Claims, x, 242.  
 Frere, Sir Bartle, ii, 85, 86; iv, 121, 125; sketch and portrait, ix, 345.  
 Frère, Edouard, obit., xi, 715.  
 Frère-Orban ministry, iii, 56; v, 56; ix, 78.  
 Fresend, Ernst, xii, 674.  
 Freshfield, Douglas, xii, 313.  
 Freycinet, Charles Louis de Saulces, ii, 320; sketch, iv, 394; v, 281; ministry, vii, 325; x, 376; xi, 352, 410, 411.  
 Freytag, theory of, vii, 93.  
 Frias, F., obit., vi, 693.  
 Friedberg, H., sketch, iv, 740.  
 Friedländer, I., obit., iii, 637.  
 Friedländer, Dr., xii, 671.  
 Friedrich, Carl, obit., x, 382.  
 Friendly, or Tonga, islands, treaty with Germany, ii, 58; annexation, viii, 31.  
 Friends, in every volume but v and ix; yearly meetings, reports of, in each volume; project for woman's college, ii, 322; progressive party, vi, 312; viii, 371; Evangelistic work, vii, 327; question of church ordinances, x, 383; conference of American, London, and Dublin yearly meetings, xii, 299.  
 Fries, Elias M., sketch, iii, 350.  
 Friese, Richard, x, 363.  
 Frisby, E., observations by, viii, 20, 26.  
 Frischmuth, W., ix, 476.  
 Fritel, Pierre, x, 363.  
 Frith, W. P., x, 365.  
 Fritsch, Prof., experiments, x, 694.  
 Frog Lake massacre, x, 125.  
 Frohmüller, ix, 272.  
 Frölich, Dr., ix, 49.  
 Frontier disputes. See Boundaries, disputed.  
 Frontin, Dr. P. de, xii, 314.  
 Frost, William E., obit., ii, 600.  
 Frotscher, K. H., obit., i, 633.  
 Fruit-Growers, Convention of, iii, 578.  
 Fruits, George, obit., i, 617.  
 Fry, W. and H., ix, 246.  
 Fuegos, the, x, 41.  
 Fuel, heat-value of, iii, 92; gaseous, x, 383.  
 Fuel cartridge, invention of, xii, 651; illustration, 652.  
 Führich, Joseph von, sketch, i, 321.  
 Fukusawa, the famous leather, vii, 441.  
 Fulaba, tribe of the, v, 291.  
 Fulford, Mr., xii, 310.  
 Fuller, George, obit., ix, 605.  
 Fuller, Jerome, obit., v, 598.  
 Fuller, J. B., experiments by, viii, 305.  
 Fuller, Rev. Richard, sketch, i, 321.  
 Fuller, William H., obit., iii, 637.  
 Fullerton, Lady G., death of, x, 718.  
 Fulton, E., obit., iii, 637.  
 Function, localization of, ix, 661.  
 Fungi, ix, 94, 498.  
 Funk, H., obit., ii, 600.  
 Furgusson, James, obit., xi, 716.  
 Furlonger, Arthur, x, 122.  
 Furnaces, gas, viii, 372; iron, ix, 479.  
 Fur-seals. See Alaska, vii, 7.  
 Fusion-disk, vi, 313.  
 Fyfe, R., invention by, x, 734.



Gaboon, the, ii, 7; vi, 328, 329.  
 Gage, S. F., investigations by, vii, 689.  
 Gaiffe, M., x, 576.  
 Gainsborough, sale of a, x, 365.  
 Gaines's Mill, battle of, x, 559.  
 Gakdul Wells, illustration, x, 294.  
 Galapagos Islands, xi, 304.  
 Galchos, the, x, 2.  
 Galiber, Admiral, ix, 460.  
 Galicia. See Austria-Hungary.  
 Galimart, N. A., obit., v, 599.  
 Galitzin, Prince, art collection of, xii, 278.  
 Gallaher, J. S., obit., ii, 580.  
 Gallait, Louisa, obit., xii, 627.  
 Gallatin, James, obit., i, 617.  
 Gallaudet, Mrs. S. F., obit., ii, 580.  
 Gall-bladder, extirpation of, viii, 752; secretions of the, xii, 678.  
 Galle, Dr., experiments by, vii, 36.  
 Galley, Edmund, v, 118.  
 Galliard, E. S., obit., x, 648.  
 Gallic acid, test for, v, 95.  
 Gallieni, Lieut.-Col., xii, 305.  
 Galliera, Duke of, obit., i, 638.  
 Gallipoli, illustration, ii, 736.  
 Gallium, equivalent of, iii, 89; in American blends, v, 95; discovery of, ix, 119; method of isolating, x, 159.  
 Gally, Merritt, inventions by, x, 612, 618, 619, 620.  
 Galton, Francis, invention by, iii, 726; x, 47.  
 Galveston, Texas, xi, 169.  
 Galway, Viscount, obit., i, 638.  
 Gama, Vasco da, tercentenary of, v, 628.  
 Gambetta, sketch and portrait, vi, 313; speech of, ii, 312; manifesto and prosecution, ii, 318; inaugural, vi, 310; defeat of *scrutin de liste* bill, vi, 311, 307; course and death of, vii, 326; influence of, viii, 365; scheme of, ix, 57, 341.  
 Game-laws, in Parliament, v, 341; of the United States, xi, 361.  
 Game of the United States, x, 386; preservation of, x, 391.  
 Games, old, resembling base-ball, x, 77.  
 Gamgee, Mr., invention by, i, 517.  
 Gamond, Thomé de, obit., i, 638.  
 Ganetsky, J. S., obit., xii, 627.  
 Gannett, Henry, x, 404.  
 Gansevoort, Judge P., obit., i, 617.  
 Gape, Admiral J., obit., i, 634.  
 Garabit viaduct, viii, 316.  
 Garaschanin, x, 727, 728; resignation of, xii, 735.

Garbage, burning, vi, 249.  
 Garbard, J. H., obit., i., 617.  
 Garber, Silas, i, 578.  
 Garbett, James, obit., iv, 699.  
 Garcelona, Alonzo, iii, 516.  
 Garcia, Gen., killed, x, 590.  
 Garcin, M., invention by, ix, 736.  
 Garde, Lieut., x, 398.  
 Gardiner, Addison, obit., viii, 589.  
 Gardiner, S. B., obit., vii, 636.  
 Gardner, A. K., i, 617.  
 Garfield, J. A., sketches, v, 286; vi, 317; portrait, v, 15; letter of acceptance, v, 700; inaugural, vi, 343; Blaine on policy of, vi, 345; vii, 192; memorial, the, vii, 121; Blaine's oration, vii, 127; compensation to physicians of, vii, 309; statue of, x, 367; xii, 280.  
 Garfield Mountains, ix, 84.  
 Garibaldi, sketch and portrait, vii, 328; gift to, i, 421; resignation of, v, 410; death, vii, 438.  
 Garland, A. H., ii, 35; sketch, x, 757; portrait, x, 761.  
 Garlington, E. A., relief expedition under, viii, 420; court of inquiry on, 424; ix, 38.  
 Garner, W. T., obit., i, 617.  
 Garnet, the, x, 18.  
 Garnett, Charles F. M., obit., xi, 677.  
 Garnier, J., obit., vi, 693.  
 Garnier, M. J., experiments by, viii, 113, 523.  
 Garnier-Pagès, sketch, iii, 350.  
 Garrard, K., obit., iv, 698.  
 Garrett, J. W., obit., ix, 605.  
 Garrettson, Mary R., obit., iv, 693.  
 Garrison, A. F., obit., ii, 580.  
 Garrison, O. K., obit., x, 648.  
 Garrison, J. Linwood, experiments by, xi, 533.  
 Garrison, S., obit., iii, 637.  
 Garrison, W. L., sketch, iv, 396; on woman suffrage, iv, 598; statue of, xi, 347.  
 Garthwaite, J. O., obit., viii, 589.  
 Garvim, S. B., obit., iii, 637.  
 Gas, viii, 372; a heating, iii, 88; Lowe's process, i, 517; other water processes, viii, 374; illustrations, 374, 375, 378-379, 380, 381; natural, 377; illustration, xi, 366; in Ohio, xii, 642, 219; map of natural-gas region, xi, 367; burner, i, 91; xii, 652; illustration, 652; improved apparatus, 111.  
 Gas-engines, viii, 377.  
 Gases, in ocean-water, ix, 662; specific heat of, x, 151; explosion of, xii, 112; liquefaction of, ii, 87.

- Gaskell, W. H., experiments by, viii, 861; ix, 654.
- Gas-lighting, regenerative system of, viii, 377.
- Gas-lime, regeneration of, iii, 89.
- Gas-stoves, viii, 376; x, 886.
- Gastein, meeting of two emperors at, x, 70.
- Gates, inventions of, illustrated, xii, 654.
- Gates, E., indictment of, iii, 575.
- Gaucha, illustration, iii, 21.
- Gaudoin, M., invention by, iii, 270.
- Gaul, Gilbert, xi, 346.
- Gaule, experiments by, viii, 632.
- Gaume, Mgr., obit., iv, 774.
- Gauntlett, H. J., sketch, i, 322.
- Gaurisankar, Mount, highest in the world, vi, 332.
- Gauss, statue of, ii, 353.
- Gauthier, M., experiments by, ix, 658.
- Gautier, M. F., experiments by, xi, 537.
- Gautier, Raoul, x, 51.
- Gaurie Pasha, x, 107, 108.
- Gaylor, G. R., obit., i, 617.
- Gear, John H., iv, 520; sketch, ii, 401.
- Geddes, experiments by, iv, 37.
- Geddes, James, obit., xii, 586.
- Geese, in the United States, x, 387.
- Gegenbaur, J. A., sketch, i, 322.
- Geiseler, M., ix, 275.
- Geissler tubes, iii, 279.
- Gelatine, blasting, iv, 131; ix, 124.
- Gelatine dry plates, ix, 651.
- Gelatine dynamite, and military explosive gelatine, x, 845.
- Geldart, Rev. J. W., obit., i, 634.
- Gelosine, xi, 290.
- Gemmill, W. D., obit., vii, 637.
- Genast, Wilhelm, obit., xii, 627.
- Gene, Gen., xii, 2, 3.
- Genesta, the yacht, x, 791.
- Geneva, illustration, i, 739.
- Genin S. N., obit., iii, 637.
- Geodetic conference, viii, 454; ix, 54.
- Geographical Progress and Discovery, in every volume; Congress, i, 73; geographical names, xi, 382; geography in education, xii, 316.
- Geological Surveys, State, New Hampshire, ii, 548, 557; Georgia, iii, 366; Indiana, iv, 501; New Jersey, iv, 670; of United States, x, 401; appropriations for, x, 405; publications, x, 405; the drift, x, 406; map of the terminal moraine of the second glacial epoch, x, 404; State surveys, x, 406.
- Geologists, x, 401 *et seq.*
- Geology, fossils in Oregon, ii, 628; glacial pe-
- riod, vi, 349; explorations in Asia, iii, 359; formation of mountains, iv, 379; Favre's experiments, iv, 379; fossil birds, vi, 308; the iguanodon, viii, 436; recent discoveries, ix, 636; Hayden's work, xii, 356; experimental, iv, 417.
- George V, ex-King of Hanover, death, iii, 384; obit., iii, 654.
- George, Duke of Mecklenburg-Strelitz, obit., i, 634.
- George, Henry, imprisoned, x, 454.
- Georgia, statistics, elections, government, legislative proceedings, etc., in each volume; views in, ii, 340; Confederate monument unveiled, iii, 372; impeachment of Comptroller-General, iv, 425; gold-mines in, v, 308; artesian wells, vii, 348; death of Gov. Stephens, viii, 387; Oglethorpe celebration, viii, 389; temperance in, x, 409; convicts, xii, 318.
- Gerard electric lamp, illustration, ix, 305, 306.
- Gerber, experiments by, vi, 42.
- Gerken, John, obit., i, 617.
- Gerlach, E. L. von, obit., ii, 600.
- Gerlach, Franz, sketch, i, 388.
- German Centralism in Austria, vii, 48.
- German emigration, vii, 348.
- German Evangelical Church, xi, 864.
- German Government, in Polynesia, ii, 53; colonial policy of, ix, 362; annexation in Papua, ix, 640.
- German National Monument, illustration, viii, 399.
- German Parliament, vi, 337.
- German Provinces, Russification of, viii, 708.
- German Railroads, vii, 349.
- Germanium, xi, 139, 140.
- Germany, statistics, government, legislative proceedings, etc., in every volume; map, i, 345; views in, i, 346, 347; ii, 347, 350, 351, 352; political crimes, in the penal code amendment, i, 344; law against copying works of art, 344; particular parliaments, 344, 345; protests against railroad acquisition by the Imperial Government, 344; Catholics and Radicals, 344, 347; judicial bills, 346; the Emperor on unification of the laws, 347; the Eastern question, i, 347; iii, 378; resignation of Delbrück, i, 345; diplomatic complications with Spain and China, 347-348; Arnim's conviction, 348; floods, 348; viii, 398; election of Frockenbeck, ii, 349; Alsace-Lorraine, 349, 352; iv, 438; made a State of the Empire, iv, 439; vii,

359; viii, 397; ix, 359; Supreme Tribunal at Leipsic, ii, 350; difference between Bismarck and Gen. von Stosch, 350; war estimates, 350; speech of Von Moltke, 351; patent bill, 351; diets of Bavaria, Saxony, and Württemberg, 351, 352; meeting of Emperors, 352; seventieth anniversary of the Emperor's entrance into the army, 352; shoe and leather exhibition, 353; statue of Gauss, 353; tobacco duty, iii, 378; vii, 356; antagonism of German and Prussian Governments, 378; anti-Socialist bill, iii, 380, 381, 383, 384; v, 318; ix, 356; attempts to assassinate the Emperor, iii, 381; Hodel and Nobiling, 381; royal marriages, 381; paper and pasteboard exhibition, 381; letter from the Pope, and negotiations, 381-382; relations with France, 383; Hanoverian succession, 384; the fleet, 384-385; destruction of the Grosser Kurfürst, 385; officers court-martialed, iv, 441; American products, iii, 386; dispute with Nicaragua, 386; Westphalian coal-fields, 387; question of raising the revenue, 386; tariff debate, iv, 435, 437, 438; refusal of Parliament to imprison Socialist members, 435; announcement of new policy, 435-436; parliamentary discipline bill rejected, 438; historical details of unification, 439; Socialists refuse homage to the Emperor, 440; motion for disarmament, iv, 440; treaty of Prague and position of Schleswig-Holstein, 441; the Egyptian debt, 441; judicial reorganization, 441; the Samoan Islands, 442; army bill, v, 317, 318; South Sea Trading Company, 319; suburbs of Hamburg annexed, 319, 320; stamp-duty conflict, 320, 321; fishery and industrial exhibitions, 321; foreign relations, 321; defection of National Liberals, 322; Cologne cathedral, 322; workingmen's accident insurance bill, vi, 344; vii, 354; ix, 357; xii, 328; Bismarck defeated on tax and biennial budget bills, vi, 344; his conflict with Benjigsen, 345; Liberal gains in elections, 345; speech of Eugene Richter, 346; Hamburg forced into the customs union, 346; meetings of emperors, 346; vii, 355; ix, 356; concessions to the papal power, vi, 346; marriage of Prince William, 346; struggles over laws relating to ecclesiastical offices, vii, 355, 358; the Guelph fund, vii, 358; the reptile fund, 358; rescript of the Emperor, vii, 393; biennial budget voted, 393; state socialism, 393; Cabinet changes, 395; Prus-

sia and the Vatican, 395; American pork, 396; treaty with Spain, 396; copyright treaty, 397; relations with France, 397; attempt to banish French from the schools of Alsace-Lorraine, 397; monument near Rudesheim, 399; hygienic and art exhibitions, 399; French feeling toward, ix, 339; ecclesiastical policy, ix, 356; the explosives law, 357; accident-insurance and joint-stock laws, 357-358; Niederwald anarchist plot, 358; Kraszewski trial, 358-359; the Laaker incident, 359-360; Bismarck succession, 359-360; fusion of Liberal factions, 360; general election, 360; the new Reichstag, 361; post steamship subventions, ix, 361; steamship subsidies, x, 415; colonial policy, 363; African colonies, x, 363-364, 387, 393, 795; annexations in the Pacific, 365; xi, 60; Caroline Islands, x, 141; in Papua, 679-681; relations with England, 120 *et seq.*; flag insulted in Spain, 142; officers in the Tonquin War, 170; tariff revision, 416; state lotteries, 417; North Sea and other canals, 417; xi, 388; socialism, x, 417; xi, 399; murder of Herr Rumpff, x, 417; shipping law, 420; Russian Poles expelled, 418; Americans, 419; the Feejee controversy, 419; telegraph conference, 420; imprisonment of Herr Bebel, xi, 389; working-women's society dissolved, 389; repeal of the May laws, 390; Heidelberg festival, 391; emperors' league, xi, 391; new King in Bavaria, 391; Bismarck demands the increase of the army, xii, 323; May laws amended, 325; frontier troubles, 326; colonies, 329; treason trials at Leipsic, 326; the Raon incident, 327; illness of the Crown Prince, 327; the triple alliance, 328; founding of the Empire, 319; German spies in France, 298.

Germer, Edward, obit., xii, 586.

Germ Theory, and Spontaneous Generation, iii, 387; theory of disease, iv, 442; vi, 347, 551; vii, 286; ix, 498; in tuberculosis, vii, 798; ix, 497; vaccination, vi, 347. See Epidemic Diseases, viii, 320; and Micro-Organisms in Disease, ix, 495.

Gérôme, pictures by, x, 358, 363.

Gescheidt, Dr. L. M., obit., i, 617.

Gesellschaft, E., obit., iii, 654.

Gessi, Signor, explorations of, i, 330, 331.

Gettysburg, battle of, xi, 446.

Geuther, experiments, xii, 106.

Ghillany, F., obit., i, 634.

Ghilzai Revolt, xii, 4.

Gholain Hussein Khan, obit., vi, 693.  
 Gholain Hyder Khan, xii, 5.  
 Gibbons, Cardinal, xii, 716, 717.  
 Gibbons, Sir S., obit., i, 684.  
 Gibbs, Wolcott, ix, 46.  
 Gibson, Edward, sketch, x, 450.  
 Gibson, Walter M., xii, 852.  
 Gidman, Joseph, invention by, ix, 736.  
 Giebri Bey, i, 4.  
 Giegler Pasha, viii, 299; x, 817.  
 Giers, M. de, x, 4, 6, 8, 10.  
 Giers, N. O., sketch, vii, 734; ix, 64.  
 Gifford, O. L. O., obit., ii, 580.  
 Gifford, Sir Hardinge, portrait, x, 488; sketch, 449. See Halsbury, Lord.  
 Gifford, R. Swain, prize to, x, 867.  
 Gifford, Sandford R., sketch, v, 822.  
 Gilbert, Alfred, xi, 845.  
 Gilbert, G. A., obit., ii, 580.  
 Gilbert, Grove K., x, 404.  
 Gilbert, R. H., obit., x, 649.  
 Gilbert islands, German protectorate over the, x, 188, 415.  
 Gilchrist, S., invention by, v, 208.  
 Gilchrist, Thomas, steel process, x, 575.  
 Gilder, Col. William H., xii, 816.  
 Giles, Ernest, in Australia, i, 330.  
 Gill, Capt., iii, 359.  
 Gill, David, observations by, vii, 86, 87; viii, 26; prize, vii, 41; xi, 48.  
 Gillespie, Elvia, obit., xii, 586.  
 Gillette, A. D., obit., vii, 687.  
 Gilpin, E. W., i, 225; obit., i, 617.  
 Ginzel, J. A., obit., i, 634.  
 Ginzel, M., x, 54.  
 Girardin, E. de, sketch, vi, 848.  
 Giseke, B. L., obit., i, 684.  
 Giskra, K., obit., iv, 699.  
 Gittings, E., obit., v, 598.  
 Gjess, G., invention by, vii, 580.  
 Glacial Period, vi, 849; x, 406; map of terminal moraine of the second glacial epoch, x, 404.  
 Glaciers, names of, ix, 34; structure of, ix, 386; in volcanoes, ix, 542; of the Andes, ix, 542, 543; theory of, x, 407, 408.  
 Gladding, Thomas S., x, 156.  
 Gladstone, W. E., sketch, v, 822; his policy, ix, 308, 372-375; x, 11, 18, 18, 313, 321, 446, 447; resignation, 448; defense of his policy, 456; xi, 399, 401; in Parliament, illustration, vii, 206.  
 Glais-Bizoin, A., obit., ii, 600.  
 Glandular system, x, 694; xi, 762; xii, 678.

Glass, process for toughening, i, 517; improvements in, v, 91; perforated, xi, 740.  
 Glassbrenner, A., sketch, i, 848.  
 Glenn, W. W., obit., i, 617.  
 Glick, G. W., sketch, vii, 447.  
 Glonoine, x, 344.  
 Gloucester, Mass., xii, 121.  
 Glover, Sarah, ix, 546.  
 Glucose, vi, 350; ix, 2, 123.  
 Glyoxilin, x, 848.  
 Goblet ministry, the, xii, 290.  
 Gobright, L. A., obit., vi, 683.  
 Goddard, Bouverie, obit., xi, 716.  
 Goddard, D. A., obit., vii, 687.  
 Godelle, M., v, 285.  
 Godey, L. A., obit., iii, 687.  
 Godlee, R. J., x, 742.  
 Godon, S. W., sketch, iv, 444.  
 Godwin, Col., explorations, ii, 828.  
 Goessmann, experiments, iii, 87.  
 Goff, G. W., obit., i, 617.  
 Goffart, A., experiments, vi, 809.  
 Gold, allotropic, ii, 499; discoveries, xi, 39, 65, 134, 305, 622; crystals of, ix, 475; production of, ii, 240, 242; in Alabama, iii, 8; in Dakota, ii, 245; dust from Colombia, viii, 141; experiments with, viii, 524; Venezuela mines, viii, 814; black gold, xii, 484; new method of treating the ore, 484; amalgamation with, 484. See also Mines and Metallurgy.  
 Gold, discoveries of, xi, 39, 65, 134, 305, 622; in Michigan, xii, 484; in British Columbia, xi, 98; in Ecuador, xi, 305; in Bolivia, xi, 97; in Colombia, xi, 190; in Norway, xii, 484; in China, x, 169; on the Amoor, x, 397; in Corea, xi, 272; in Australia, xi, 65, 66, 576; in South Africa, xi, 184; xii, 485.  
 Gold as the only standard, see Currency, ii, 235, and Bimetallism; and silver, relative values of, i, 290; conference to fix, iii, 326; issue of certificates, vii, 117; x, 275-282. See Currency, Bimetallic, x, 275.  
 Golden Jubilee, the, xii, 716.  
 Goldmark, Carl, xii, 521.  
 Goldsborough, L. M., sketch, ii, 853.  
 Goldsborough, W. T., obit., i, 617.  
 Goldschmid, invention by, iii, 545.  
 Goldschmidt, discoveries by, ii, 44.  
 Goldschmidt, Meyer Aaron, obit., xii, 627.  
 Goldschmidt, P., obit., ii, 600.  
 Goldschneider, Dr., experiments by, x, 689; xii, 678.  
 Goldsmid, Sir F. H., obit., iii, 654.

Goldsmith, W. L., impeachment of, iv, 421.  
 Goldthwaite, G., sketch, iv, 444.  
 Golther, L. von, sketch, i, 348.  
 Goodall, Albert Gallatin, obit., xii, 586.  
 Goodall, Frederick, xi, 345; xii, 277.  
 Good Hope, Cape of, xi, 133.  
 Goodrich, James S., obit., xi, 677.  
 Goodwin, Eliza Weathersby, obit., xii, 567.  
 Goodwin, George, obit., xi, 716.  
 Goodwin, W. H., obit., i, 617.  
 Goodwin, J., obit., iii, 627.  
 Goold, James Alipius, obit., xi, 716.  
 Goppelsroeder, invention by, vii, 90; experiments, viii, 115.  
 Gordon, Sir A., defeat of cannibals by, i, 53; Governor of Feejee, ii, 52; x, 49.  
 Gordon, O. G., sketch, with portrait, viii, 399; portrait on steel, ix, 300; in Abyssinia, ii, 2; iv, 2, 383; operations in Egypt, i, 246; excursions on the Nile, ii, 380; in the Soudan, ii, 269; v, 285; viii, 290; proposed to flood the Jordan valley, viii, 307; mission to the Soudan, ix, 299, 372; x, 230, 312; his journal, x, 320; memorial hospital to, and pension to his family, x, 321; death of, x, 361.  
 Gordon, David, obit., xi, 716.  
 Gordon, F. W., invention by, x, 580.  
 Gordon, George H., obit., xi, 678.  
 Gordon, Lieut. A. R., xii, 214.  
 Gordon, Sir H. P., obit., i, 634.  
 Gordon, J. E. H., invention by, vii, 269, 270.  
 Gordon, L. D. B., obit., i, 634.  
 Gordon, Sir W. H., obit., i, 634.  
 Gore, J. E., xi, 56.  
 Gore-Langton, Lady, address by, ii, 389.  
 Gorgas, J., obit., viii, 589.  
 Goring, C. R., ix, 519, 520.  
 Gorman, J. R., xi, 742.  
 Gorman, Gen. W. A., obit., i, 617.  
 Gormanston, Viscount, obit., i, 634.  
 Gorringe, H. H., obit., x, 649.  
 Gortchakoff, Prince, sketch, ii, 353; viii, 400; retirement, vii, 734; x, 2.  
 Gortyna, inscription at, x, 37.  
 Goshen, search for, x, 36.  
 Goshenland, ix, 113; x, 85, 87.  
 Goss, William, obit., i, 618.  
 Goszczynskis, L., sketch, i, 348.  
 Gothard's experiment, xi, 51.  
 Gothenburg, illustration, ii, 705.  
 Göttingen, University of, chemistry at, ix, 809.  
 Gougeard, M., obit., xi, 716.

Gough, John Bartholomew, obit. and portrait, xi, 392.  
 Goulard and Gibbs, induction-coils used by, viii, 305.  
 Gould, B. A., discoveries and observations by, iii, 35; vi, 38; vii, 37; prize to, viii, 27; xi, 57, 59; xii, 45.  
 Gould, J., obit., vi, 693.  
 Gould, T. R., sketch, vi, 353.  
 Gould system of roads, vi, 335, 336.  
 Gourko, Gen. J. V., sketch, ii, 353.  
 Gove, William H., obit., i, 618.  
 Government publications, x, 405.  
 Gower, Frederick A., ix, 72.  
 Gozzadini, Count G., obit., xii, 627.  
 Grace, F. J., obit., ii, 580.  
 Grace-Aranibar contract, the, xii, 662.  
 Grace-Calvert, experiments, vi, 99.  
 Grafton, E. C., obit., i, 618.  
 Graham, Gen. G., in Egypt, with portrait, vii, 253; ix, 293; results of his campaign, ix, 295, 299.  
 Graham, John H., obit., iii, 637.  
 Graham, J. and W., picture collections of, sold, xi, 345; xii, 278.  
 Graham, J. L., obit., i, 618.  
 Graham, J. L., Jr., obit., i, 618.  
 Graham, Van Wyck, obit., i, 618.  
 Graham, Lieut. Wallace, obit., i, 618.  
 Graham, William Moffitt, obit., xi, 678.  
 Graham, W. W., discoveries by, ix, 543.  
 Grain inspection, vii, 560.  
 Gramme, M., inventions by, iii, 277; 307; vi, 253; electric lamp of, vi, 258.  
 Gramont, Duc de, obit., v, 599.  
 Gran Chaco expedition, x, 100.  
 Grand Army of the Republic, xii, 329; badges of, colored-plate illustration, xii, 329.  
 Grandean, experiments by, iii, 725.  
 Grand-Écaille, xii, 756.  
 Grandin, Lieut., invention, i, 518.  
 Grand Rapids, xii, 122.  
 Granger cases, the, ii, 753.  
 Granger, Gordon, sketch, i, 348.  
 Granier, M., x, 26.  
 Granier de Cassagnac, A. B., obit., v, 599.  
 Grannis, Theodore C., obit., iii, 637.  
 Grant, Sir Francis, obit., iii, 654.  
 Grant, Gordon, obit., iii, 638.  
 Grant, James, obit., xii, 628.  
 Grant, James Macpherson, obit., x, 661.  
 Grant, Ulysses S., President, messages of, i, 680; travels of, iv, 146, 445; proposal to place on retired list, vii, 156; obit., x, 421,

see also x, 225; steel portrait, x, front; his birthplace, illustration, x, 422; numbers lost and captured by, x, 430; his character, x, 432.

Grant, William, ix, 114, 115.

Grant and Ward, ix, 329.

Grant Land, ix, 85.

Grants to gas and water companies, xi, 470.

Granville, Earl, sketch, v, 323; ix, 290, 368, 364, 559; x, 11, 16, 119, 120, *et seq.*, 311, 419, 679.

Grapes, chemistry of, iii, 87; culture of, see Viticulture.

Grape-Sugar, vi, 350.

Graphic works of art, first exhibition, xi, 346.

Grass, Philippe, obit., i, 634.

Grasses, analysis of, viii, 118.

Grasshoppers, in Dakota, protection against, i, 219; in Minnesota, i, 558.

Grassman, H. G., obit., ii, 601.

Grätz, Prof., xii, 404, 405.

Graves, Abbot F., xi, 347.

Graves, Robert, obit., xi, 678.

Graves, Ralph H., obit., i, 618.

Gravez, T., obit., viii, 599.

Gray, Asa, ix, 46.

Gray, Alfred G., obit., i, 618.

Gray, E. P., inventions by, vi, 255. See Telephone, i, 740.

Gray, H. P., sketch, ii, 354.

Gray, John Perdue, obit., xi, 678.

Grayson, Clifford P., pictures by, xi, 346, 347.

Great Britain and Ireland, statistics, government, legislative proceedings, etc., in each volume; map, ii, 360; views in, i, 356, 357, 359, 362, 364; ii, 361-367; Suez canal shares, i, 355; mission to Egypt, 356; title of empress assumed by the queen, 357; debate upon, 357-358; court of survey, 358; merchants' shipping acts, 358; compulsory education, 358; appellate jurisdiction of the House, 359; home-rule for Ireland discussion, 360; bill to suppress the slave-trade in India, 361; the Turkish question, 361; the Eastern question, i, 361; debates on, 361-364; ii, 362-364; iii, 398-399, 401-402; v, 336-337; see also Eastern question, the; new Doomsday Book, i, 365; visit of Sir Salar Jung, 366; attack on the government by the Duke of Argyll, ii, 362; letter of Carlyle and speech of Gladstone, 365; obstruction by Irish members, ii, 366; consular service in Turkey, Persia, and Egypt, 368; liberation society, 368; annexation of Transvaal, 368; island of Cyprus, the, iii, 401; v,

336; discussion of Russo-Turkish policy, iii, 404-405; Afghan war, iii, 405; Imperial Order of the Crown of India, 406; mob in Hyde Park, 406; murder of the Earl of Leitrim, 407; Fenians released, 407; labor strikes, 407; Glasgow bank failure, 407; steamboat, colliery, and theatre accidents, 407, 408; army discipline bill, iv, 452; dissolution of Queen's University, 453; education in Wales, 458; suffrage question, 455; war in South Africa, 455-456; Gladstone's campaign in Scotland, 457; Irish speakers arrested, 458; case of Charles Bradlaugh; see Bradlaugh; Gladstone's arraignment of Austria, v, 334; South African federation, 338; temperance bill, v, 342; American cattle regulations, v, 342; Tay disaster inquiry, 344; woman-suffrage in the Isle of Man, 344; the Irish question, vi, 358-370; vii, 365; viii, 411-417; ix, 376-378; schemes for destruction of property, vi, 370; request to United States government, 371; attempted assassination of the queen, vii, 369; appropriations for the royal family denounced, vii, 369; Gladstone prime minister, vii, 360; question of cloture, vii, 364; property of married women, 365; state aid to emigration, viii, 418; famine in Skye and western highlands, 418; comparison of the English and French navies, ix, 370; annexation in Papua, 380, 639; x, 679-680; federation of Australian colonies, ix, 380; African policy attacked, ix, 372; Arthur Peel speaker, 372; London government bill, 372; purchase-of-land bill, 373; Manchester ship-canal, 373; debate on the franchise bill, 374; franchise agitation and extension, 375; membership of House of Commons increased, 376; Maamtrasna murder trials, evidence suppressed, 376-377; dynamite conspiracies and explosions, 377-378; the Skye crofters, 378; employers' liability act, 379; financial depression, 379; commercial treaty with Mexico, 380; extent of colonial possessions, 380; affairs in Africa, 380; x, 119, 136, 137; government censured, x, 447; resignation of ministry, 448; earldom offered to Gladstone, 448; Salisbury ministry—sketches of cabinet, 448-450; criminal-law amendment bill, x, 452; land-purchase bill, 453; xi, 400; Irish question, x, 454-456; electoral campaign, x, 456; land question, 456; abolition of game-laws demanded, 458; Port Hamilton taken, 459; annexation of Upper Burmah, 115; home-rule bill, xi, 400;

- Crofter troubles, 401-404; xii, 842; riots in Belfast, xi, 403; agrarian agitations in Wales, 404; mob in London—meeting in Trafalgar square, 405; Domesday celebration, 406; Domesday Book, 407; socialist agitations, xii, 842; Irish affairs, 886 *et seq.*; the round table, 886; the plan of campaign, 886, 887; declared illegal, 887; evictions, 887, 888.
- Great Salt Lake, filling, v, 297.
- Grébaut, Eugene, xi, 81; xii, 18.
- Greece, statistics, government, legislative proceedings, etc., in every volume; maps of, i, 867, 868; v, 225; views in, i, 870; ii, 869, 870; iii, 409, 410; trial of ministers, i, 869; resignation of Kumunduros ministry, ii, 870; Deligeorgi ministry, 870; death of Admiral Canaris, 871; change of ministry, iii, 408; war preparations, 408; massacres, 409; Turko-Greek commission, iv, 459; army prepared, v, 845; vi, 874; boundaries settled, 877; change of ministry, vii, 871; petroleum monopoly, viii, 419; Latin Union, 419; Corinth canal, ix, 888; action regarding Bulgaria, x, 109, 112; mobilization of troops, xi, 409; interference of the powers, 409; blockade of the coast, 411; change of ministry, 411; collision on the frontier, 411; electoral reform, 412.
- Greek bridge and bath, only example of, ix, 25.
- Greek Church, organization of, i, 871, 872; ii, 871; new translation of the Bible, 872; iii, 411; iv, 461; v, 846; project for union of Servian churches, v, 847; ix, 277; party in, favoring union with the Roman Church, ix, 279.
- Greek invasion of Turkey, iii, 798.
- Greely, A. W., expedition under, vi, 825; relief expedition, viii, 420; ix, 28.
- Green, Charles, obit., xii, 587.
- Green, F. M., corrections in latitudes and longitudes, ii, 886.
- Green, John Richard, sketch, viii, 424.
- Green, J. R., experiments by, xii, 676.
- Green, Henry, Jr., obit., i, 618.
- Green, N. E., observations by, viii, 22; ix, 51.
- Green, S. F., imprisonment, vii, 14.
- Green, William L., xii, 858.
- Green, William Mercer, obit., xii, 587.
- Green, Rev. W. S., ix, 545.
- Greenback party, the, i, 204, 781.
- Greene, Charles Gordon, obit., x, 678.
- Greene, E. W. C., obit., ii, 580.
- Greene, G. W., obit., viii, 589.
- Greene, Gen. Nathanael, statue of, xi, 847.
- Greene, Nathaniel, obit., ii, 580.
- Greene, S. D., obit., ix, 606.
- Greene, Theodore P., obit., xii, 587.
- Greene, W. B., sketch, iii, 412.
- Greenfield, Elizabeth T., obit., i, 618.
- Greenhow cases, tried, x, 268, 272.
- Greenland, explorations in, iii, 858; viii, 884; ix, 848.
- Greenock, Scotland, great dock at, x, 832.
- Greenwich, meridian of, ix, 54.
- Greenwood, John, obit., xii, 587.
- Greer County, Texas, claimed by United States, xii, 760.
- Gregg, J., obit., iii, 655.
- Gregg, Rollin Robinson, obit., xi, 679.
- Gregorian Calendar, vii, 871.
- Gregory, Dudley S., obit., xi, 679.
- Gregory, Dr. H. H., obit., ii, 580.
- Gregory, S. B., obit., ix, 606.
- Greig, Samuel Alexeivich, obit., xii, 628.
- Grenell, George, obit., ii, 580.
- Grenfell, Rev. George, x, 892; xi, 82, 872.
- Greuze, x, 864.
- Grévy, Albert, iv, 26; v, 285.
- Grévy, F. J. P., sketch, iii, 413; portrait, iv, 17; elected President, iv, 888; x, 27; xii, 288; resignation, 296.
- Grey, Sir George, obit., vii, 646.
- Greyhound, the, ix, 262.
- Grier, W. N., obit., x, 649.
- Grierson, Gen., x, 425.
- Griffin, Lepel, v, 6.
- Griffin, Samuel P., obit., xii, 588.
- Griffith, F. Llewellyn, researches by, xii, 18.
- Griffith, J. E., obit., ii, 580.
- Griffith, Sir R. J., obit., iii, 655.
- Griffiths, A. B., experiments by, x, 158, 576.
- Grigsby, H. B., obit., vi, 688.
- Grimaux, M. E., experiments by, v, 96; vii, 87.
- Grimm, Jacob, ix, 745.
- Grimshaw, experiments, vi, 99.
- Grimston, invention by, viii, 881.
- Grinnell, J., obit., x, 649.
- Grinnell Land, an island, ix, 85.
- Grisel, M., engineer, x, 832.
- Grocholski, Casimir de, vii, 48.
- Groddek, Prof., xi, 588.
- Groeben-Neudörfchen, obit., i, 634.
- Groen van Prinsterer, W., obit., i, 634.
- Groesbeck, Abraham, obit., xi, 679.
- Grosvenor Gallery exhibitions, x, 860; xi, 845; xii, 277.
- Gross, S. D., obit., ix, 606.
- Grotius, on international law, vii, 618.

- Grouse, in United States, x, 388.  
 Grove, inventions by, vi, 254; vii, 265.  
 Grover, Lafayette, sketch, i, 653.  
 Grover, Stephen, ix, 146.  
 Grün, Anastasius, i, 51.  
 Grüneisen, K. von, obit., iii, 655.  
 Gruner, M., experiments by, ix, 472.  
 Grünhagen, Herr, experiments by, x, 690; xi, 674.  
 Grunow, ix, 521.  
 Grünwald, explorations, iii, 359.  
 Gruppe, O. F., sketch, i, 375.  
 Guachemaca, x, 299.  
 Guadeloupe, viii, 821; ix, 804; x, 788.  
 Guano Deposits in South America, war over, iv, 82; as a fertilizer, vi, 276, 277; in Peru, vii, 683; and Nitrate Deposits, controversy on, viii, 628; from Chili, x, 164; illustrations, working in the North Island, i, 661; bat, xi, 276.  
 Guardia, Gen., iii, 227; death of, vii, 176.  
 Guatemala, statistics, etc., in each volume; map, i, 374; views in, i, 374; v, 349; viii, 426, 427; attempted assassination of President Barrios, ii, 375; ix, 385; central railway, iii, 417; iv, 463; education in, v, 850; cinchona bark, viii, 427; new ports of entry, ix, 385; land grants, ix, 385; proposed union of Central American States, x, 464; xii, 348; defection of Zaldívar, 465; death of Barrios, 466; Barillas president, xi, 412; abolition of torture, 414; revolutionary plots, 414; attempt to poison the president, 414; attempt at revolution, xii, 347; Archbishop Casanova, 347; boundary dispute, see Boundaries.  
 Guatemala La Antigua, illustration, i, 374.  
 Guayaquil, earthquake at, xii, 232.  
 Gubert, Louise, obit., vii, 637.  
 Guden, Dr. von, drowned, xi, 512, 716.  
 Gudmundsson, Sigurdur, iv, 314.  
 Guedists, the, ix, 344.  
 Guelph fund, vii, 358.  
 Guericke, H. E. F., obit., iii, 655.  
 Guerin, Thomas J., obit., xii, 588.  
 Guerne, Prof., his excursion with Prince Albert in the northern Atlantic, xii, 316.  
 Guernsey, Victor Hugo's home in, illustration, x, 482.  
 Guest, John, sketch, iv, 464.  
 Guglielmo, Signor, xii, 494.  
 Guiana, viii, 821; ix, 803, 805; x, 783; convicts to be sent to, ix, 343; x, 378; British, xii, 800.  
 Guibert, Joseph Hippolyte, obit., xi, 716.  
 Guidi, F. M., obit., iv, 699.  
 Guigniant, J. D., sketch, i, 375.  
 Guinea, French and Portuguese, xi, 371.  
 Guion, J. M., obit., iii, 638.  
 Guiteau's Trial, vi, 381; execution, vii, 809.  
 Gulf Stream, investigation of, v, 288; xii, 316; Pacific, v, 289; vi, 326.  
 Gulran, x, 8.  
 Gum-gelactine, vii, 88.  
 Gum-lac, from Arizona, vi, 100.  
 Gun-cotton, x, 343.  
 Gundlach, E., ix, 499, 503, 505.  
 Gungi, J., obit., viii, 599.  
 Gunnery, improvements in, vi, 547.  
 Gunnisonite, vii, 87.  
 Gunpowder, x, 343.  
 Guns, construction of, vii, 576; one hundred ton, used at Spezzia, illustration, 579; three types of, 578; the Armstrong, 581; the dynamite, with illustration, ix, 274; rifles, with illustrations, xii, 274, *et seq.*; for coast defense, xii, 348. See also under Army.  
 Gunther, J. C., obit., i, 618.  
 Gurney, Ephraim Whitman, obit., xi, 679.  
 Gurney, Russell, obit., iii, 655.  
 Gurney, William, sketch, iv, 464.  
 Gussfeldt, Paul, explorations, i, 381; ix, 542.  
 Gustavus, Prince, obit., ii, 601.  
 Gutocheff, Major, x, 731.  
 Gutheim, James Koppel, obit., xi, 679.  
 Guthrie, Dr., researches by, x, 151.  
 Gutzkow, K. F., sketch, iii, 418.  
 Guyot, Arnold H., sketch and portrait, ix, 386.  
 Gylden, observations, viii, 26.  
 Harlem, views in, illustration, i, 583.  
 Habib Abdoer Rahman, ix, 558.  
 Hackett, Sir W., obit., ii, 601.  
 Hackett, W. H. T., obit., iii, 638.  
 Hackländer, F. W., obit., ii, 601.  
 Haddan, J. L., invention, iii, 236.  
 Hadji, Loja, obit., xii, 628.  
 Hadrian, mosaics from palace of, xi, 34.  
 Hæmatein, anhydrous crystalline, vii, 88.  
 Hæmatoblasts. See Blood, viii, 60.  
 Hæmorrhage, arrest of, viii, 60.  
 Hæmorrhoids, viii, 751.  
 Haffner, K., obit., i, 635.  
 Hagen, E. A., obit., v, 600.  
 Haggan, experiments, vi, 751.  
 Hagenmacher, G. A., explorations of, i, 331.  
 Hagoood, Johnson, v, 670.  
 Hague, Arnold, x, 404.  
 Hague, Mrs. S., obit., ii, 580.



Hague, William, obit., xii, 588.  
 Hahn-Hahn, Countess, obit., v, 600.  
 Hahn, Michael, obit., xi, 680.  
 Haight, Henry H., obit., iii, 688.  
 Haille, ex-Gov. William, obit., i, 618.  
 Hainan, revolt in, iv, 144.  
 Haines, D., obit., ii, 580.  
 Haines, W. S., experiments by, vi, 351.  
 Haines's Bluff, assault on, x, 424, 425.  
 Hair-cloth, ix, 387.  
 Hakim Beg Toreh, x, 173.  
 Hakodai, illustration, i, 429.  
 Halberstadt, W., experiments by, viii, 112; x, 155.  
 Halbherr, Dr., x, 37.  
 Haldeman, S. S., sketch, v, 350.  
 Hale, C. B., obit., i, 618.  
 Hale, Horatio, xi, 46.  
 Hale, Nathan, statue of, xii, 280.  
 Hale, Sarah J., sketch, iv, 465.  
 Halévy, L., obit., viii, 599.  
 Half-breeds, rebellion of, in Canada, x, 124.  
 Halifax, Viscount, obit., x, 661.  
 Hall, Anna M., obit., vi, 693.  
 Hall, Asaph, prizes to, iii, 39; iv, 53; observations by, iv, 52; viii, 26; ix, 50, 53; xi, 53.  
 Hall, Benton J., sketch, xii, 649.  
 Hall, Edwin, D. D., obit., ii, 530.  
 Hall, Edward, obit., ii, 580.  
 Hall, Ezra, obit., ii, 580.  
 Hall, F. P., experiments by, viii, 116.  
 Hall, John W., iii, 236.  
 Hall, Dr. W. H., obit., i, 618.  
 Hall, Sir William Hutcheon, obit., iii, 655.  
 Halle, University of, illustration, ii, 658.  
 Halle, C. E., pictures by, x, 265; xii, 277.  
 Halleck, Gen. H. W., x, 423, 424, 559, 560.  
 Haller, F. N., obit., i, 635.  
 Hallet's Reef, illustration, x, 472.  
 Hallett, John H., obit., iii, 638.  
 Halliburton, W. D., ix, 656.  
 Halliday-Duff, Andrew, obit., ii, 601.  
 Hals, Frans, x, 363.  
 Halsall, W. F., xi, 347.  
 Halsbury, Lord, xi, 394.  
 Halstead, O. S., obit., ii, 581.  
 Halstead, Richard H., collection of, xii, 280.  
 Halsted, R. F., sketch, vi, 399.  
 Halsted, William, obit., iii, 638.  
 Haly, Sir William O'G., obit., iii, 655.  
 Hamassen, i, 3, 4; rebellion, ii, 2.  
 Hamberg, H. E., xi, 545.  
 Hamberger, of Jena, xi, 539.

Hambruch, invention, i, 518.  
 Hamburg, in the Customs Union, vii, 355.  
 Hamburg, view of, iv, 438.  
 Hamer, Thomas L., x, 421.  
 Hamilton, Dr. D. J., investigations by, ix, 654.  
 Hamilton, Frank Hastings, sketch, xi, 680.  
 Hamilton, James A., obit., iii, 638.  
 Hamilton, J. G., xii, 280.  
 Hamilton, Lord George, portrait, x, 445; sketch, x, 449.  
 Hamilton, Ontario, xii, 122.  
 Hamilton, Sir J. J., obit., i, 635.  
 Hamilton, P., obit., ix, 606.  
 Hamilton, Sir W., obit., ii, 601.  
 Hamlet, experiments by, vi, 99.  
 Hamlin, Charles Edward, obit., xi, 681.  
 Hammerich, F., obit., ii, 601.  
 Hammond, Gen., obit., i, 618.  
 Hammond, Dr. W. A., ix, 554.  
 Hampson, Thomas, ix, 45.  
 Hampton, Wade, Governor of South Carolina, i, 725; sketch, ii, 375.  
 Hampton, Wade, Jr., obit., iv, 693.  
 Hancock, Gen. Winfield S., sketch, v, 350; portrait, v, 351; letter of acceptance, v, 701; obit., xi, 414.  
 Hand, Augustus O., obit., iii, 638.  
 Hand, Samuel, obit., xi, 681.  
 Hand-organ, x, 614.  
 Handy, Isaac W. K., obit., iii, 638.  
 Haneberg, D. von, sketch, i, 375.  
 Hänel, Gustav F., obit., iii, 655.  
 Haney, investigations by, vi, 19.  
 Hanfstängl, F. von, obit., ii, 601.  
 Hanksite, new mineral, x, 153.  
 Hann, Prof., xii, 492.  
 Hannington, Bishop, murder of, xi, 369.  
 Hannay, J. B., experiments by, iii, 85; iv, 186; v, 86.  
 Hanover, death of the ex-King, and claim to the crown of, iii, 384; ix, 360; Guelph fund, vii, 353, note.  
 Hansa, the, expedition of, i, 81.  
 Hansen, J. E., obit., ii, 602.  
 Hanson, invention by, vii, 741.  
 Hanson, Sir R. D., sketch, i, 375.  
 Hanston, experiments by, iv, 136.  
 Haomoc, battle of, x, 25, 26.  
 Häpke, M., xii, 492.  
 Happersberger, statue by, x, 367.  
 Harbor defenses of United States, v, 29.  
 Harbor improvements, v, 244; Antwerp, vii, 280; docks at Milford Haven, vii, 279; xii, 260.

- Harcourt, Vernon, invention, vi, 96; ix, 45; x, 46.
- Harcourt, Sir William, sketch, v, 352.
- Hardie, Gen. J. A., obit., i, 618.
- Hardy, Sir Thomas Duffus, obit., iii, 655.
- Harding, C., xi, 544.
- Harding, William G., obit., xi, 681.
- Hardinge, Gen., x, 18.
- Hardy, Benjamin Franklin, obit., xi, 681.
- Hardy, Mother, obit., xi, 790.
- Hares, in United States, x, 389.
- Harkness, James, obit., iii, 638.
- Harlan, J. M., sketch, ii, 376.
- Harlech, Baron, obit., i, 635.
- Harmattan wind, the, xii, 416.
- Harmonium, x, 618.
- Harper, Fletcher, sketch, ii, 376.
- Harper's Ferry, surrender of, x, 560; illustration, view of, ii, 764.
- Harrar, conquest of, xii, 2.
- Harrington, Calvin Sears, obit., xii, 681.
- Harrington, Henry F., obit., xii, 588.
- Harriman, Walter, obit., ix, 606.
- Harris, Elisha, obit., ix, 607.
- Harris, John Wesley, obit., xii, 589.
- Harris, S. D., obit., ii, 581.
- Harris, Townsend, obit., iii, 638.
- Harris, William Logan, obit., xii, 589.
- Harrisburg, Penn., xi, 170; view of, i, 657.
- Harrison, Alexander, x, 362; prize to, 367; xi, 343.
- Harrison, Benjamin Franklin, obit., xi, 682.
- Harrison, W. H., xi, 586.
- Harrowby, Earl of, x, 449; sketch, x, 447.
- Hart, E., experiments by, viii, 683.
- Hart, John S., sketch, ii, 377.
- Hart, Joel T., sketch, ii, 376.
- Hart, Samuel, obit., iii, 639.
- Hartford, xi, 170; soldiers' and sailors' monument at, xii, 280; new Capitol at, iii, 219.
- Hartington, Marquis of, sketch, v, 358; x, 18; xi, 399.
- Hartmann, Herr, xi, 389.
- Hartmann, J. von, obit., iii, 655.
- Hartridge, Julian, sketch, iv, 465.
- Hartt, Charles F., obit., iii, 639.
- Hartwig, Dr., discoveries by, iv, 51; v, 35; observations, vi, 39; x, 53.
- Hartzenbusch, J. E., obit., v, 600.
- Harvard College, views of buildings, ii, 488-490.
- Harvard, John, statue, x, 362.
- Harvests of the World, vii, 376.
- Harvey, Sir G., sketch, i, 376.
- Harvey, Peter, obit., ii, 581.
- Harvey, William Street, obit., xii, 589.
- Haseltine, Charles F., collection of, xii, 280.
- Hasenclever, R., sketch, i, 376.
- Haskett, W. J., obit., i, 619.
- Hassan, Pasha, i, 4, *et seq.*
- Hassinger, David Stanley, obit., xii, 589.
- Hassler, Dr., xii, 314.
- Hastings, G. F., obit., i, 635.
- Hastings, Hugh J., obit., viii, 589.
- Hatasu, Queen, vii, 257; throne of, xii, 21.
- Hatcher's Run, engagement at, x, 428.
- Hatchie, battle of the, x, 424.
- Hatfield, Edwin F., obit., viii, 590.
- Hatfield, H., observations by, iii, 37.
- Hatfield House, x, 722.
- Hathorn, Henry H., obit., xii, 589.
- Hatton, F., experiments by, vi, 98.
- Hatton, G., xi, 587.
- Hatton, John Liptroit, obit., xi, 717.
- Hatzfeldt, Count, x, 140, 143, 419.
- Hatzler, Elizabeth, obit., vii, 683.
- Haug, Martin, sketch, i, 376.
- Hauser, Miaka, obit., xii, 628.
- Hausemann, Dr., xi, 539.
- Hautefeuille and Ohappuis, discovery by, v, 86.
- Havana, illustration, i, 732.
- Haven, E. O., sketch, vi, 399.
- Haven, Gilbert, sketch, v, 353.
- Havre, view of, iv, 390.
- Hawaiian islands, ix, 388; x, 467; xi, 420; xii, 349; revolution in, 358; new constitution of, 354; treaty with United States, 355.
- Hawes, Richard, obit., ii, 581.
- Hawkes, Gen. R., obit., i, 635.
- Hawkshaw, Sir J., drainage engineering by, iii, 29.
- Hay, J. S., explorations of, i, 333.
- Haycraft, John B., experiments by, x, 691.
- Hayden, Ferdinand Vandever, sketch and portrait, xii, 356; survey, i, 335; ii, 336; x, 402-404.
- Hayden, Josiah, obit., ii, 581.
- Hayem, experiments by, viii, 60.
- Hayes, E., bridge design, viii, 313.
- Hayes, Isaac, sketch, iv, 466.
- Hayes, Isaac Israel, obit., vi, 684.
- Hayes, John Lord, obit., xii, 589.
- Hayes, R. B., sketch, i, 376; portrait, i, frontispiece; election, see Election of 1876; inaugural, ii, 659; messages, see Congress and Public Documents.
- Haymerle, Karl von, sketch, iv, 465; pamphlet by, iv, 527; vi, 50, 399.

- Hayne, Paul Hamilton, obit. and portrait, xi, 421.
- Hayti, viii, 428; ix, 893; insurrection, viii, 429; ix, 898; x, 468; xi, 422; xii, 857.
- Hayward, A., obit., ix, 616.
- Haywood, B., obit., iii, 689.
- Hazard, Mrs., iv, 689.
- Hazen, H. Allen, x, 688.
- Hazen, William Babcock, sketch and portrait, xii, 858.
- Hazen, Lake, x, 588.
- Hazlehurst, Rev. T., obit., i, 685.
- Head, Natt, obit., viii, 590.
- Health, influence of chemical works on, see Chemistry, i, 84; climatic influence in Colorado, iv, 156.
- Health, Charity, and Lunacy, Mass., Board of, established, iv, 596.
- Health Congress, i, 72.
- Health, National Board of, iv, 466.
- Healy, imprisonment of, viii, 418.
- Healy, J. P., obit., vii, 638.
- Hearing, instrument for testing the, iv, 508.
- Hearing, or Color-Hearing, vi, 400.
- Heart, electrical condition of the, i, 250; experiments, viii, 631; new remedy for diseases of, ix, 272.
- Hearthfinery, improved, ix, 478.
- Heat, magnetic equivalent, i, 251; method for determining, x, 154; of the moon, xi, 55; radiation of, from the human body, xii, 487; of the globe, lost by radiation, 489; regulator, illustration, 651.
- Heat-spectra, invisible, xi, 55.
- Heath, explorations by, vi, 832.
- Heating and Ventilation of Dwellings, v, 859.
- Heating of Houses, vi, 400.
- Heaton, Judge, obit., ii, 581.
- Hébert, P. O., sketch, v, 858.
- Hebrews, in Egypt, the, ix, 19; x, 85, 86.
- Hebrides, New, xi, 60; article, with map, xii, 587.
- Hebrew technical institute, the, xii, 235.
- Heckel, experiments by, viii, 118.
- Hecker, Friedrich, obit., vi, 694.
- Hedstrom, Rev. O. G., obit., ii, 581.
- Heemskerck, M. J., obit., vi, 694.
- Heer, I., obit., iv, 699.
- Heidelberg, view of, ii, 847; Festival, xi, 391.
- Heidenlain, experiments by, x, 694.
- Heimann, B. A., sketch, ii, 377; obit., iii, 655.
- Heine, Gustave, obit., xi, 717.
- Heinen, Dr. C., explosive invented by, x, 104.
- Heinrich, experiments, viii, 521.
- Heis, E., obit., ii, 602.
- Heiskell, J. M., case of, v, 187.
- Heisler, F., obit., i, 635.
- Helfmann, Hessa, vi, 796-798.
- Heligoland, illustration, iii, 404.
- Heliograph, the Manse, iv, 471; use of, in Afghan War, v, 8.
- Heliometer, the largest, ix, 47.
- Heliopolis, destruction of, ix, 600.
- Hellenic studies, society for the promotion of, x, 85.
- Hell-Gate, improvement of, i, 877; v, 250; vi, 250; x, 470; illustrations, x, 470-478, 475, 477.
- Hellhoffite, x, 347.
- Hellmann, Dr., xi, 548.
- Hellquest, Charles Gustave, xi, 848.
- Helmholtz, misquotation of, x, 691.
- Hemana, O. I., sketch, i, 882.
- Hendrioken, Thomas F., obit., xi, 682.
- Hendricks, Thomas A., sketch, i, 382; sketch and portrait, ix, 395; record of death, x, 650.
- Henne, Antonia, obit., xii, 590.
- Henneberg, Rudolf, sketch, i, 383.
- Hennequin, Alfred Nicoclès, obit., xii, 628.
- Henner, J. J., x, 859, 863; xi, 343, 347; xii, 276.
- Henni, J. M., sketch, vi, 400; obit., vi, 794.
- Henningsen, C. F., obit., ii, 581.
- Henrietta island, discovery of, vii, 331.
- Henry, Caleb S., obit., ix, 607.
- Henry, James, obit., i, 635.
- Henry, Joseph, sketch and portrait, iii, 419; experiments, v, 446.
- Henry, J. T., obit., iii, 639.
- Henry, Paul, discoveries by, i, 46; ii, 44; vii, 35; prize to, iii, 39; ix, 47; x, 49; xi, 51.
- Henry, Prosper, discovery by, iii, 36; prize to, iii, 39; ix, 47; x, 49; xi, 51.
- Henry, Dr. R. S., ix, 656.
- Henry, Sir T., obit., i, 635.
- Hensel, Louise, obit., i, 635.
- Heraclina, x, 346.
- Herat, capture of, vii, 4; its importance, iv, 6; ix, 4, 6, 7; Persian desire to annex, x, 14; description, x, 7; illustration, views in, ii, 6; x, 1.
- Herbeck, J., obit., ii, 602.
- Herbert, Earl of Carnarvon, portrait, x, 447.
- Herbert, Percy E., sketch, i, 383.
- Herbinger, Col., x, 26, 27.
- Herculano de Carvalho e Aranjó, A., obit., ii, 602.
- Heredity, stature by, x, 47.

- Hereroland, ix, 362, 363; x, 187, 188.  
 Heresy-trials, Andover, xi, 206.  
 Hérisson, viii, 357, 367.  
 Hering, Constantine, sketch, v, 354.  
 Heri-Rud, the, x, 4; source of the, xii, 309.  
 Herkomer, Hubert, x, 859; xii, 277.  
 Hermes of Commagene, ix, 28.  
 Hermitage, St. Petersburg, exhibition at, xii, 278.  
 Herndon, Com. William L., xi, 44.  
 Hernia, viii, 751.  
 Herodotus, quoted, ix, 21.  
 Heron, Matilda, obit., ii, 581.  
 Heroöpolis, ix, 19; x, 85.  
 Herries, Baron, obit., i, 685.  
 Herrmann, Herr, obit., xii, 628.  
 Herroun, Dr. E. F., experiments, ix, 658; x, 695.  
 Herschel, observations, iii, 86.  
 Herschel, Sir John, xi, 581.  
 Hertter, Dr., xii, 674.  
 Herten, Alexander, iv, 682.  
 Herz, C., experiments by, vi, 258; computations, viii, 21.  
 Herzegovina, i, 757; v, 46; vii, 55; viii, 548; ix, 64; maps, i, 751, 754.  
 Herzen, experiments by, viii, 685.  
 Herzog, Bishop, sketch, i, 650.  
 Heuglin, T. von, sketch, i, 822, 838.  
 Heunert, K., obit., i, 635.  
 Heutsch, Capt., ix, 859.  
 Hewes, O. M. A., obit., iii, 639.  
 Hewett, Com., i, 9; contest with Africans, i, 9; ix, 298, 296.  
 Hewett, Consul, x, 119-121.  
 Hewitt, E. A., obit., ii, 581.  
 Hewson, James, obit., iii, 639.  
 Hexamer, statue by, v, 555.  
 Heyward, experiments, vi, 100.  
 Hibben, E. C., obit., i, 619.  
 Hicklin, J., obit., ii, 602.  
 Hickory Town, Africa, x, 121, 122.  
 Hicks-Beach, Sir Michael, x, 440; portrait, 447; sketch, x, 449; xi, 899.  
 Hicks Pasha, William, in the Soudan, viii, 800; defeat and death of, viii, 801; sketch, port., viii, 480; x, 318.  
 Hidden, W. E., x, 153.  
 Hiddenite, vi, 401.  
 Hieroglyphics, translation of, ix, 600.  
 High Bridge, view of, i, 604.  
 High License in Minnesota, xii, 512.  
 Highest mountain in the world, vi, 332.  
 Higginson, Thomas W., ix, 598.  
 Hildburghauser, Hyman, obit., xi, 682.  
 Hildebrand, B., obit., iii, 656.  
 Hildebrandsson, Prof., xii, 490.  
 Hildebrandt, P., obit., vi, 694.  
 Hilditch, Sir E., obit., i, 635.  
 Hilgard, J. E., ix, 44.  
 Hill, Benjamin H., sketches, ii, 337; iv, 471; and portrait, vii, 378; statue of, xi, 847.  
 Hill, David B., ix, 588; x, 637; xi, 11.  
 Hill, Frederick, xii, 701.  
 Hill, John B., obit., xi, 682.  
 Hill, G. W., xii, 45.  
 Hill, Mrs. H., obit., ii, 602.  
 Hill, Sir Rowland, sketch, iv, 472.  
 Hillard, George S., sketch, iv, 473.  
 Hillebrand, K., obit., ix, 616.  
 Hillebrand, W. F., xii, 106.  
 Hiller, F., obit., x, 661.  
 Hilliard, F., obit., iii, 639.  
 Hilliard, Henry, sketch, ii, 377.  
 Hilton, Dr. J., obit., iii, 656.  
 Himalayas, altitudes in, ix, 543; ascent of, ix, 849.  
 Himly, experiments by, ii, 501.  
 Hincks, Sir Francis, obit., x, 478.  
 Hind, discovery of asteroids, ii, 44.  
 Hindus, the, aid of, to the British, x, 14.  
 Hinkhead, John H., iii, 598.  
 Hirzel, S., obit., ii, 602.  
 Hissarlik, excavations at, ix, 24.  
 History, recent works of. See Literature, in every volume.  
 Hitchcock, J. R., obit., iii, 639.  
 Hitchcock, Roswell D., sketch and portrait, xii, 858.  
 Hittites, vii, 263; ix, 28; inscriptions, xii, 25.  
 Hla-oo, xii, 83.  
 Hoadley, John Chipman, obit., xi, 682.  
 Hobart Pasha, sketch, ii, 377; obit., xi, 717.  
 Hoboken, xi, 170.  
 Hochstetter, F., obit., ix, 616.  
 Hocking valley, strike, ix, 681; x, 672.  
 Hodge, Archibald Alexander, obit., xi, 683.  
 Hodge, Charles, sketch, iii, 420.  
 Hodgson, W. N., sketch, i, 884.  
 Hodson, Doveton, obit., i, 685.  
 Hoe, Robert, obit., ix, 607.  
 Hoe, Richard March, obit., xi, 688.  
 Hoeck, K. O. F., obit., ii, 602.  
 Hoes, Rev. R. R., xii, 709.  
 Hoff, H. K., obit., iii, 639.  
 Hoffman, Charles Fenno, obit., ix, 607.  
 Hoffman, M., obit., iii, 639.  
 Hofmann, J. von, obit., ii, 602.

Hofmeister, experiments by, x, 694, 695.  
 Hofmeister, W., obit., ii, 602.  
 Hogarth pictures, sale of, x, 361.  
 Hogg, Sir J. W., sketch, i, 384.  
 Houghton, Sir H. de, obit., i, 635.  
 Hohenthal, Countess, obit., ii, 608.  
 Hohenzollern, castle of, illustration, ii, 350.  
 Holbrook, Dr. M. E., ix, 654.  
 Holcombe, Capt., x, 139, 140.  
 Holdefleiss, F., observations by, iv, 185.  
 Holden, Edward S., ix, 46; xi, 58.  
 Holford bonds, the, ix, 48.  
 Holidays, xii, 475.  
 Holkar, Maharajah Tuckaji Rao, obit., xi, 717.  
 Holland. See Netherlands.  
 Holland, John, ix, 476.  
 Holland, Josiah Gilbert, sketch, vi, 401.  
 Holliday, Benjamin, obit., xii, 590.  
 Holliday, F. W. M., sketch, ii, 762.  
 Hollins, G. N., sketch, iii, 420.  
 Holly's steam-heating, iii, 421.  
 Holly Springs, capture of, x, 424.  
 Holm, G., x, 398.  
 Holmes, Alfred, obit., i, 635.  
 Holmes, Senator, obit., i, 635.  
 Holmes, Theophilus H., obit., v, 593.  
 Holsinger, H. R., vii, 63.  
 Holstein-Ledreborg, Count, x, 291.  
 Holtzke, Dr., experiments by, x, 690.  
 Holub, Dr. E., explorations of, i, 382; ii, 383.  
 Holy Cross, Society of the, ii, 21.  
 Holyoke, Mass., xi, 170.  
 Holzgethan, L. von, sketch, i, 384.  
 Home, David Douglas, obit., xi, 682.  
 Home Hygiene, v, 354.  
 Homes, Henry Augustus, obit., xii, 590.  
 Homestead acts, in some States, i, 208; in Georgia, i, 387; iii, 370; in Arkansas, iv, 45; in Minnesota, iv, 627; in South Carolina, iv, 818; in Florida, vi, 297; vii, 314.  
 Homicide, by necessity, ix, 522, 523.  
 Hondt, Antoine de, x, 611.  
 Honduras, revolution in, i, 22; iii, 428; viii, 431; ix, 396; British, ix, 808; x, 478; xi, 423; filibustering attempt in, 424; xii, 859.  
 Hone, Mrs. E., obit., ii, 582.  
 Honey, James, murder of, x, 87.  
 Hong Kong, illustration, ii, 100.  
 Hood, Edward Paxton, obit., x, 661.  
 Hood, John B., sketch, iv, 473; x, 428.  
 Hooker, Joseph, sketch, iv, 475.  
 Hooper, Capt., voyage of, v, 301.  
 Hoosac Tunnel, the, xi, 529.  
 Hope, James Barron, obit., xii, 591.

Hope, Beresford, x, 721.  
 Hopeful trials, the, x, 62.  
 Hopkins, G. H., observations by, viii, 526; ix, 514.  
 Hopkins, J. C., obit., ii, 582.  
 Hopkins, Lucius, obit., i, 619.  
 Hopkins, Mark, sketch and portrait, xii, 360.  
 Hopkinson, invention, vi, 253; xii, 480.  
 Hops, in Washington Territory, xii, 800.  
 Horbaczewski, experiments by, x, 157.  
 Hore, discoveries, v, 135, 297.  
 Horemhebi, colonnade of, x, 82.  
 Horhotpu, tomb of, ix, 21.  
 Horn, Ephraim, obit., ii, 582.  
 Horne, Richard H., obit., ix, 616.  
 Horrea Galbæ, xi, 85.  
 Horse, paces of the, iii, 723.  
 Horses, racing, xii, 767; running, 770; trotting, 768; steeple-chasing, 771; breeding, in France, 771.  
 Horsford, A., obit., x, 662.  
 Horsley, C. E., obit., i, 619.  
 Horsman, E., sketch, i, 384.  
 Horst, Baron, iv, 60.  
 Hort, Sir J. W., obit., i, 635.  
 Horton, Henry B., invention by, x, 617.  
 Horvatovich, Gen., x, 731; xii, 735.  
 Hoskyns, C. W., obit., i, 635.  
 Hosmer, G. W., obit., vi, 684.  
 Hosmer, William H. C., obit., ii, 582.  
 Hospitals, for seamen, history of. See Service, United States Marine Hospital; New York Woman's, viii, 718.  
 Hotchkiss, B. B., obit., x, 650.  
 Hotchkiss, G. W., obit., iii, 639.  
 Hotchkiss, Jedediah, ix, 538.  
 Hotchkiss, Julius, obit., iii, 640.  
 Hot drinks, influence of, xii, 676.  
 Hot Springs, x, 600.  
 Hot Springs, Arkansas, disputed title to, iii, 24; iv, 45; v, 25.  
 Hough, G. W., observations by, vii, 86; viii, 22; x, 50.  
 Houghton, Baron, obit., x, 661.  
 Hounds, ix, 257, 258, 262.  
 House-drainage, v, 364.  
 House of Commons, bar of the, with illustrations, vii, 202; discipline in. See Parliament.  
 House of Lords, the, ix, 875. See also Parliament.  
 House of Statuettes, the, ix, 20.  
 House of the Glass Zodiac, the, ix, 20.  
 House of the Papyri, the, ix, 20.

- Houses, Portable, xi, 424; illustrations, 425, 426; American country-seats, xii, 361; illustrations, 362, 363, 364, 366, 367, 369, 370.
- Houston, view at, i, 746.
- Houzeau, experiments by, viii, 115.
- Hovas of Madagascar, the, vii, 492; ix, 458-460; x, 565.
- Hovey, Charles M., obit., xii, 591.
- Hovgaard, expedition of, vi, 323.
- How, Mary K., obit., viii, 688.
- Howard, Dr. B., his method of resuscitation, iii, 765.
- Howard, Gen., Indian campaign, ii, 40; iii, 678.
- Howard, W. C., invention by, vi, 287.
- Howarth, Rev. H., obit., i, 636.
- Howe, Earl, obit., i, 636.
- Howe, Dr. Samuel G., sketch, i, 388.
- Howe, Timothy O., sketch, with portrait, viii, 482; vii, 810.
- Howe, William O., obit., xi, 682.
- Howgate, Capt. H. W., Arctic expedition, ii, 324; vii, 810.
- Howitt, William, obit., iv, 700.
- Howland, Robert Southworth, obit., xii, 591.
- Howson, John S., obit., x, 662.
- Hoyt, Henry M., iii, 684.
- Huang Sic Chen, x, 105.
- Hubbard, Bela, x, 401.
- Hubbard, J. F., obit., i, 619.
- Hubbard, R. D., obit., i, 210; ix, 607.
- Hubbell, Judge L., obit., i, 619.
- Huber, J., obit., iv, 700.
- Hübner, O., obit., ii, 603.
- Hudson, Henry Norman, obit., xi, 683.
- Hudson, J., obit., x, 662.
- Hudson, M. O. See Clemmer, Mary.
- Hudson, N. Y., xii, 122.
- Hudson Bay Route to Europe, ix, 466; x, 133; explorations, x, 133, 399.
- Hudson River Tunnel, v, 580.
- Huá, treaty, viii, 769; revolt at, x, 30.
- Huelva pier, the, iii, 287.
- Huger, Benjamin, obit., ii, 582.
- Huggins, Dr., observations by, vii, 87; ix, 53; x, 47, 52, 54; xi, 49, 51, 52; prize to, viii, 28.
- Hughes, Archbishop, x, 562-564.
- Hughes, D. E., observations by, xi, 534.
- Hughes, E. D., invention by, iv, 502. See Microphone, iii, 562.
- Hugo, Victor, i, 315; obit., with portrait and house, x, 479.
- Hugues, Clovis, ix, 845.
- Hugues-Morin affair, ix, 845.
- Hulke, Mr., operation by, x, 743.
- Hull Harbor improvements, viii, 310; x, 333.
- Hull, H. H., obit., i, 619.
- Hull, Joseph H., obit., iii, 640.
- Hull, William H., obit., ii, 582.
- Hullah, John, obit., ix, 617.
- Hülse, J. A., obit., i, 636.
- Humbert, Ferdinand, picture by, xi, 343.
- Humbert I., of Italy, accession of, iii, 456; attempt on the life of, iii, 458; assassin's sentence commuted, iv, 528; portrait on steel, ix, 412.
- Humboldt, Alexander von, x, 593, 607.
- Hume, Rev. Mr., xii, 148.
- Humphreys, Andrew A., sketch, viii, 433.
- Humphry, William Gilson, obit., xi, 717.
- Humpidge, G. T., x, 154.
- Hungary, in every volume but viii; house of Magnates in, ix, 70; marriage laws in, ix, 69; national exhibition, x, 73. See Austria-Hungary.
- Hunias, the, iv, 400.
- Hunt, Charles S., sketch, i, 389.
- Hunt, George W., obit., ii, 603.
- Hunt, Holman, pictures by, x, 365; xii, 277.
- Hunt, Richard M., x, 361.
- Hunt, Robert, obit., xii, 629.
- Hunt, Samuel, obit., iii, 640.
- Hunt, Ward, obit., xi, 684.
- Hunt, T. Sterry, x, 577; xii, 101.
- Hunt, William H., obit., ix, 607.
- Hunt, W. M., iv, 473.
- Hunter, C. F., obit., ix, 608.
- Hunter, David, obit., xi, 684.
- Hunter, D. E., observations by, iii, 37; iv, 52; v, 36; vii, 39, 40.
- Hunter, Robert M. T., sketch and portrait, xii, 371.
- Hunter, William, obit., xi, 684.
- Hunter, Dr., of Carlisle, ix, 637.
- Huntington, O. W., experiments by, vi, 93.
- Huntington, W. H., obit., x, 650.
- Hurlburt, H. B., gift by, x, 366.
- Hurlbut, Stephen A., sketch, vii, 379; in Peru, vi, 738.
- Hurd, Nathaniel F., obit., xi, 684.
- Huron, proposed Territory of, i, 220.
- Huron, wreck of the, ii, 537.
- Husband, William, obit., xii, 629.
- Hussein-Avni Pasha, sketch, i, 389; x, 315.
- Hussey, John, obit., xii, 591.
- Huston, A. C., obit., i, 619.
- Hutchinson, Samuel, obit., i, 619.
- Hutchison, Joseph C., obit., xii, 522.
- Huxley, on medicine and biology, vi, 550.

Huzara tribe, the, x, 7, 8.  
 Hyacinthe, Father, iv, 706.  
 Hyades, Dr., x, 41.  
 Hyde Park, mass-meeting in, x, 452.  
 Hyderabad, xii, 382.  
 Hydriodate of hyoscyne, x, 299.  
 Hyatt, celluloid made by, iii, 459.  
 Hydrochlorate of cocaine, ix, 271.  
 Hydrodynamic Analogies to Electricity and Magnetism, vi, 404.  
 Hydrofluoric Acid, molecular weight of, vi, 92.  
 Hydrogen, purification of, ii, 94; manufacture, v, 88; peroxide of, iii, 89; vii, 96; dioxide, viii, 117.  
 Hydrography, i, 324; ii, 323; iii, 351; v, 288; of Behring Strait, vi, 325; surveys, vii, 331.  
 Hydrophobia, ix, 398; x, 484.  
 Hyett, William H., obit., ii, 608.  
 Hygiene, Home, v, 354.  
 Hyksos, the, vii, 257; xii, 21.  
 Hylton, Baron, obit., i, 636.  
 Hyperion, satellite of Saturn, ix, 50.  
 Hypnone. See Acetophenone, xi, 289.  
 Hyrcanus, fortifications of, ix, 28.

Ice, Artificial, i, 517; xi, 427; sea-water, xii, 104.  
 Ice-boats, x, 794.  
 Ice, Hot, vi, 405.  
 Iceland, Parliament of, iv, 314; vi, 212; famine in, vii, 191; xi, 284; xii, 228.  
 Ichthyol, viii, 434; xi, 290.  
 Idaho, government, legislative sessions, finances, agriculture, mining, education, etc., in vols. viii, ix, x, xi, and xii; polygamy, viii, 435; ix, 400; resources, viii, 435; growth, viii, 436; railroads, ix, 399; reclamation of desert land, ix, 399; x, 488; rivers and lakes, xi, 490; Indians and reservations, xi, 431; xii, 374; annexation question, xii, 374.  
 Iddesleigh, Sir Stafford Henry Northcote, Earl of, obit., xii, 629. See also Northcote, Sir Stafford.  
 Ide, Jacob, sketch, v, 371.  
 Ideville, Henri, obit., xii, 630.  
 Iglesias, J. M., sketch, i, 391; claim and defeat of, ii, 512; viii, 65; ix, 649; resignation, x, 687.  
 Ignatieff, N. P., sketch, ii, 381.  
 Ignanodon, the, illustration, viii, 436.  
 Ikaba, King, portrait, ix, 167.  
 Ilbert Bill, the, in India, viii, 441.  
 Iles, Malvern W., xi, 537.  
 Ili. See Kulja.

Illinois, statistics, State government, political conventions, elections, etc., in each volume; views in, i, 392; ii, 383, 385; new Capitol, i, 391; Gov. Cullom, 395; Senator Davis, ii, 383; proposed constitutional amendment, iii, 427; Christ Church property, 431; election of senator, iv, 478; labor bureau, 486; history of debt, v, 371; trade of Chicago, v, 377; vi, 410; project for canal enlargement, 380; vi, 410; oleomargarine law, 408; act for cession of canal, vii, 380, 381; regulation of railroads, viii, 438; decision in Mackin case, x, 491; armed processions, 491; strike of quarrymen and mob, xi, 433; pleuropneumonia, xi, 434; xii, 377; Chicago elections, 377; anarchists, 377, 378.  
 Illumination in surgery, viii, 752.  
 Imbriani, Vittorio, obit., xi, 717.  
 Immigrants, cost of care of, to New York, v, 579; taxation of, vii, 463; ix, 428.  
 Immigration, to United States, ii, 386; vi, 412; rules on, vi, 414; of paupers and criminals, vi, 437; viii, 157; abuses, viii, 571; to Australia, ii, 51; v, 37; vi, 44; to Canada, v, 216, 219; to Central America, iii, 418, 748; to South America, i, 77; ii, 28, 74, 75; v, 22; viii, 68, 123; to Southern States, iii, 331; iv, 641; v, 308, 539, 584; vi, 299; to Western States, i, 84, 85, 231; ii, 80; iii, 74, 76, 676; iv, 657; v, 612; viii, 78, 268.  
 Immigration, Chinese, vii, 337; see also Chinese; diplomatic correspondence, i, 231; bill on, iv, 218; treaty on, v, 704.  
 Impeachments, report on, of Judge Arohibald, ii, 297.  
 Imprisonment, damages for false, iv, 675.  
 Improvements, Internal, President Arthur on, viii, 161.  
 Im Thurm, E. F., exploration by, ix, 540; x, 400.  
 Inability or Disability of the President, vi, 414.  
 Inaugurations, precedence at, x, 253.  
 Indebtedness of the United States, of the States, and of the world, vii, 392; charts, 402, 403; maps showing distribution, 392, 408.  
 Indemnity Funds, from China and Japan, vi, 778.  
 Independent Republican movement, ix, 773.  
 Induction-Balance, iv, 502.  
 India, statistics, government, etc., in every volume; views in, i, 401-405; ii, 390, 392, 393; journey of the Prince of Wales, i, 401; resignation of Lord Northbrook and appointment of Lord Lytton, 402; sketches of the vice-

roy, 406; the Queen's title, 403, 404; ii, 390; the Malay insurgents, i, 404; disorders in the Naga Hills, 404; freshet in the Punjab, 404; Mohammedan sympathy with the Turks, 404; disturbances in Baroda, ii, 394; and Madras, i, 404; epidemics, famine, and cyclone, 404, 405; Sunday-schools, 405, 406; changes of twenty years, ii, 390; reception of the chiefs, the Khan of Kelat, 391; decentralization scheme, 391; depreciation of silver, 391, 392; cost and extent of the famine, 392; sufferings from, iii, 436; epidemics, ii, 393; iv, 494; the Afridia, ii, 395; Calcutta University, 394; bill for regulating the native press, iii, 485; native armies, 436; scheme of public works, 436; troops for Malta, 436; Afghan war, 437; reported flight of Shen Ali, 438; trial of the Rajah of Poorea, 438; right to cede territory in, 438; occupation of Socotra, 438; new Order of the Indian Empire, 438; sequels to the Afghan war in the Punjab, iv, 491; Yakoob Khan under guard, 491; events in Kohistan, 491; movements in Afghanistan, 492, 493; measures of retrenchment, 493; protection of the ryots from extortion, 493; license law, 493; famine in Cashmere, 494; finances, 494; attempted murder of the viceroy, 494; outrages of the hill tribes, 494; hostilities of the Nagas, 495; v, 388; progress of Christianity, iv, 495; election excitement, v, 383, 384; resignation of Lord Lytton and appointment of the Marquis of Ripon, 384; declaration of policy and army reorganization, 384, 385; expense of the Afghan war, 386; native donations, 386; Baroda, Travancore, and Mysore, 386, 387; cinchona-culture, 387; representative government proposed, 387; over-population and poverty, 388; Rumpa insurrection, 389; attempt on the viceroy, 389; land-slide, 389; Brahmo-Somaj, 389; farming-system, vi, 420, 421; the country restive under British military despotism, 421; land reform in Bengal, 422; Mysore restored to native rule, 422; danger of outbreaks, 422; conspiracy in Kolapore, 422; Brahminical conspiracies, 423; protest against evacuation of Candahar, 423; border outbreaks, 423; new governor of Madras, 423; native disturbances, vii, 415; Russian activity in, 415; the King of Burmah's position, 416; local self-government, viii, 441; the Ilbert bill, 441; the Afghan frontier, ix, 406; settlement, x, 497; ghosts and famines, ix, 406; snakes, gold, petro-

leum, tea, 406; paper-manufacture, 407; irrigation, 407; Calcutta Exhibition, 407; Lord Ripon's administration, x, 494; Bengal tenancy act, 495; social reforms, 496; insurrection in Bhotan, 496; in Nepal, 427; restoration of Gwalior to Scindia, 497; survey of, 395; the silver question, xi, 437; religious riots, 438; mission to Thibet, 439; equalization of land-tax, 453; establishment of a Roman Catholic hierarchy, xii, 382; Indian women, 382; Hyderabad, 382; Chinese suzerainty over Indian states, 383; wheat supply, 380.

Indiana, State government, elections, statistics, etc., in each volume; views in, i, 407; ii, 395; the presidential difficulty, i, 411; Gov. Williams, 411; constitutional amendment, iv, 496; coal-mining, 501; building-stone, 501; mine inspector, 502; decision as to the 29th of February, 502; importation of negroes, v, 394; election irregularities, 396; the liquor law, vi, 426; contracts by married women, 426; diseases of domestic animals, 427; special congressional election, viii, 444; State university, xi, 440; other State institutions, 440, 441; progress in utilizing natural gas, xii, 386; election frauds, 386.

Indianapolis, Capitol at, iii, 440; growth of, xii, 122; illustration, ii, 395.

Indians, American, missions to, i, 64, 76; iv, 190; in the Black Hills, i, 681; cession to Canada by Blackfeet, ii, 254; President Hayes on, ii, 669; iii, 710; wars and raids of, ii, 89; iii, 28, 29, 463, 673; iv, 46; v, 27, 28; vi, 35; viii, 17; numbers killed in engagements with, v, 26; plan to transfer care of, iii, 29; iv, 47; for a body of cavalry, iii, 29; for education of children, iii, 29; v, 28, 649; Western reservations, ii, 539; iv, 150; v, 29, 116, 118; vi, 117, 781; census of Penobscota, iv, 576; elections, vi, 524; decision in favor of Poncas, iv, 653; the Narragansetta, iv, 772; their tribal relations abolished, v, 654; in Florida, vi, 298; in Canada, v, 218; Baptist convention of, viii, 52; famine in Montana, viii, 548; statistics of, v, 28; new policy toward, v, 783; troubles in Chilli with, viii, 64; education, viii, 781; not citizens, ix, 425; numbers and lands of, x, 762, 763; disturbances, x, 752; in Dakota, x, 286; xii, 219; relics of, ix, 14-16; character of the Apaches, xii, 30; education of, 386; attack upon, 143; in New Mexico, 545; Pueblo, 545; reports of agents, 777.



Indian Territory, territorial government in, iii, 28; occupation of, iv, 48; opening to settlers recommended, v, 417; attempts of ranchmen to appropriate lands in, x, 762.

Indian states, Chinese suzerainty over, xii, 383.

India-rubber manufacture, v, 90; cultivation of, xii, 140.

Indigo, artificial production of, vi, 428; vii, 95.

Indigo-blue, derivation of, iv, 185.

Indigotin, determination of, x, 156.

Industrial Education Association, xii, 235. See under Education.

Industrial Union, International, xii, 649.

Industries, British and American, ii, 111; new appliances for the chemical, v, 88; statistics of United States, vii, 500. See Finances and Financial Review.

Infallibility, i, 703; ii, 676.

Infanticide, suppression of, in India, i, 400.

Inflexible, the, vii, 246, 568.

Ingalls, Senator, charge against, v, 419.

Ingersoll, Elihu Parsons, obit., xii, 592.

Ingleby, Olement Mansfield, obit., xi, 718.

Inglis, David, obit., ii, 582.

Inglis, J. A., obit., iii, 640.

Inkerman, monument at, illustration, i, 710.

Inlaid work, ix, 244.

Inlaying, xi, 448.

Inness, George, exhibition of works of, x, 861; xi, 846.

Insane, Alabama hospital for the, ix, 9.

Insane Criminals, act concerning, i, 597.

Insanity, plant-producing, viii, 538.

Insanity as a Defense for Crime, evidence and opinions in various trials, vi, 429; vi, 381.

Inscriptions, ancient, vii, 256; ix, 18; xii, 17, 25; x, 87; xi, 24, 34.

Insects, earliest fossil, ix, 637.

Insectivorous Plants, iii, 444.

Insolvency, amendment to Connecticut law, v, 195.

Insurance, Commissioners of, in Connecticut, ii, 225; Delaware act on, iv, 307; Mississippi laws, iv, 636; Missouri laws, iv, 642; assessment companies, vi, 727; general statistics for United States, vii, 424; "graveyard" companies, vii, 835.

Insurance Legislation, in New York, xi, 444; in Connecticut, 445; in New York, xii, 552.

Insurrections. See Wars, etc.

Internal Revenue and Tariff in Congress, viii, 193.

International Arbitration, viii, 469.

International Law, obligation of, vii, 618;

source of authority of, 618; views of various writers, 618-622; beginning of the science, 622.

International Monetary Conference. See Bi-metallic Standard.

Interoceanic Canal, iv, 503; map showing routes tributary to, iv, 506. See also Panama Canal.

Interstate Commerce Act, x, 206; xi, 264; xii, 173, 390.

Inuits of Alaska, the, v, 301.

Inventions, xi, 738; xii, 650. See Patents.

Invincibles, the, ix, 377.

Iodine, from sea-weed, i, 97; commercially produced, v, 89.

Iodoform, ix, 747.

Iodol, xi, 290.

Iowa, statistics, State government, elections, etc., in each volume; view in, i, 414; Gov. Kirkwood, 412; law making women eligible to school offices, 418; decision of the court, 415; industrial exhibition, 415; storms, 415; vii, 438; Keokuk Canal, ii, 398; Gov. Gear, 400; socialists, 401; bill to restore capital punishment passed, iii, 446; on defendants as witnesses, 446; immigration, 446; jury trials, 446; constitutional amendment, 447; tax-exemption for tree-planting, iv, 513; tramps, 516; proposed prohibition amendment, v, 396; viii, 445; x, 490; xii, 393; board of health and immigrant commission, 396; prison reform, vi, 437; driven wells, viii, 446; new Capitol, ix, 412; decision in distillery case, xii, 393.

Irazu, volcano, ascent of, x, 398.

Ireland, and the Irish Question, v, 399; home-rule, i, 360; obstruction, ii, 366; iii, 407; murder of the Earl of Leitrim, 407; Fenian prisoners released, 407; agitation, iv, 457; in Parliament, v, 380, 338, 338, 348; vi, 358, 359, 363; help from United States, vi, 358; land-league trials, 367; Archbishops McCabe and Croke, 367; manifesto of Parnell and others, 369; obstruction, vii, 204; coercion bills, vii, 204; cases of Dillon and others, 205; debates on, vii, 364; cloture, 364; crimes bill, vii, 366; assassination of Cavendish and Burke, vii, 366; viii, 415; arrears bill, vii, 367; "Irish World," the, vii, 368; land-scheme, vii, 368; Ladies' Land League, *ibid.*; arrest of High-Sheriff of Dublin, vii, 369; Hartington imprisoned, viii, 413; memorial from bishops, 417; brief of Leo XIII, 693; Maamtrasna murder-trials, ix, 376; at-

tack on the Irish executive, 376; Archbishop Walsh, x, 455; land-commission, xii, 336; the round table, 336; the plan of campaign, 336-338; O'Brien sentenced, 339; crimes act, 340; political crimes in, viii, 414; condition of, viii, 416; dynamiters convicted, 416; brief of Leo XIII on, viii, 693.

Ireland, directory of the friends of, ix, 626.

Irenæus letters, the, x, 704.

Iridescent stoneware, xii, 504.

Irish Land Bill, vi, 363; purchase, x, 453.

Irish Land Commission, xii, 336.

Irish members of Parliament, obstruction by, ii, 365.

Irish National party, viii, 412.

Iron, new process, i, 522; direct, vii, 523; protection of surfaces, ii, 98; iv, 184; commerce in, iv, 178; vii, 533; dephosphorization of, v, 208; vii, 530; viii, 520; absorption of nitrogen, vi, 99; statistics, 1882, vii, 115; silvered, x, 578; viscosity of, xii, 479; new method for removing rust from, 486; casting upon lace, 486; Regia process, ix, 471; xii, 479; malleable, 480. For alloys, processes, etc., see under Metallurgy in the several volumes.

Iron and Steel, ii, 401; microscopical analysis, vii, 532; tax on, viii, 213; industry in 1886, xi, 446.

Iron Manufacturers' Convention, vii, 455. See Metallurgy.

Iroquois, studies of the. See Morgan, L. H., and Smith, E. A.

Irrigation, in Western States and Territories, iii, 72, 111; iv, 151; viii, 78; ix, 104; x, 633; xi, 576, 609; xii, 532; in Australia, xii, 311.

Irvine, Col., x, 125, 127.

Irving, A., xii, 103.

Irving, J. B., obit., ii, 582.

Irving, Pierre M., obit., i, 619.

Irving, Roland D., x, 404.

Irving, Theodore, obit., v, 593.

Irwin, William, obit., xi, 685.

Isaacs, Samuel M., obit., iii, 640.

Isabella, ex-queen of Spain; her return, i, 731.

Isabella Marie, Princess, of Portugal, obit., i, 636.

Isabey, Eugène, obit., xi, 718.

Ischia, earthquake in, viii, 285, 454.

Islam, the future of, vi, 440; sects of, *ibid.*

Islands, Pacific, claims on, viii, 31; explorations in, xi, 381, 382.

Ismail Pasha, i, 2; sketch, ii, 405; iii, 263;

abdication, iv, 382; vii, 232; financial operations of, vii, 234; ix, 296; xi, 311.

Ismailia, on the Suez Canal, illustration, ii, 270.

Isomerism, ix, 809.

Isthmus of Panama Insurrection, x, 179.

Istomin, Admiral C. I., obit., i, 636.

Israel, lost tribes of. See Afghanistan, ii, 4.

Italia Irredenta, or Irredentist party, v, 408, 409; vi, 50; vii, 54, 487; crime of Overdank, vii, 438; viii, 452.

Italians in Africa, xi, 1, 455; xii, 2.

Italy, statistics, government, legislative proceedings, etc., in every volume; map of Rome, ii, 408; views in, i, 418, 419, 421, 422; ii, 409-411; resignation of the Minghetti and formation of the Depretis ministry, i, 417; the new cabinet and its programme, 418; purchase of railroads, 418, 419; establishment of free ports, 419; election victory of the progressive party, 420; the king's address on the opening of Parliament, i, 420; committee on abolition of the death-penalty, 421; its abolition, ii, 410; attitude on the Eastern question, i, 420, 421; Garibaldi, 421; measures toward the church, 422; foreigners exempt from taxation, 422; church congress at Bologna, 422; conviction and sentence of the forger of the king's name, Montegazza, 422; capture of Sajera, the Sicilian brigand, 422; capture of Foster Rose by brigands, 423; death of the Duke de Galliera, 423; penalties on priests attacking the government, ii, 408; the Eastern question, 409; clerical abuse bill rejected, 410; change of policy in France, 410; change of ministry, 411; discovery of coins, 411; anniversary celebrations, 411; death of Victor Emmanuel and accession of Humbert, iii, 456; the king's speech, 456; proposed reforms, 456; Cairoli ministry, 456; railways, 457; attempt to assassinate the king, 458; speech of Minghetti on the closing of Barsanti clubs, 458; agitation on the action of the Berlin congress, 458; demonstration at the residence of the Austrian consul in Venice, 458; question of repeal of the grist-tax, iv, 524, 525; civil marriage act, 526; foreign relations, state railroads, 526; measures against Republicans, 526; expressions of Garibaldi, 527; excitement over Baron Haymerle's pamphlet, "Italicæ Res," 527; eruption of Mount Etna, 527; "Italia Irredenta," or Irredentist agitation, v, 408, 410; viii, 452; dissolution of parliament and ministry sustained in elec-

tions, v, 409; Tunis question, 409; vi, 449; resignation of Garibaldi, 410; decline of the merchant navy, 410; Mentana monument unveiled, 410; foreign policy, conditions of, vi, 447, 448; electoral reform, taxation, 449; Marseilles riot, 450; anti-clerical ferment, and disturbances at the burial of Pius IX, 450; the papal guarantees, 451; royal meeting at Vienna, 451; the newspaper press, its growth, 451; earthquake at Casamicciola, 451; extradition of a bandit, 452; the people and the church, vii, 484; confiscated church property, 484; relations with other powers, 487; African schemes, 488; commercial treaties, 488; death of Garibaldi, 488; anniversary of Sicilian vespers, 488; the Austrian envoy attacked, 488; inundations, 488; resumption of specie payments, viii, 451; cabinet crisis, 483; reclamation of the Campagna, 454; interpretation of the guarantee law, 454; the Ischian earthquake, 454; geodetic conference, 454; the Red Sea Expedition, ix, 418; x, 504; the German steamers, ix, 414; silk-manufacture, 415; cholera, 415; cyclone, 416; Turin exhibition, 416; commercial failures, 416; occupation of Massowah, in Africa, x, 505; xii, 397; the madonna of Corano, 506; sanitary conference; 506; equalization of land-tax, xi, 458; parliamentary conflict, 458; dissolution, 454; conflict between church and state, 455; quarrel with Colombia, 455; colonies, 455; xii, 396; Massowah disaster causes a ministerial crisis, 397; the Crispi ministry, 398; the Pope claims the sovereignty of Rome, 399; commercial treaty with Austria and new triple alliance, 399.

Iuka, battle of, x, 424.

Ivens, R., explorations by, iv, 405; v, 293; x, 394.

Ives, J. C., x, 401.

Iverson, Henry, obit., ix, 608.

Ivory, Artificial, iii, 458; monopoly of, in Sudan, x, 816.

Ivory-nuts, xi, 305.

Iwakura, T., obit., viii, 600.

Iwasaki Yataro, obit., x, 662.

Izard, J. A. S., obit., iv, 698.

Jablochhoff, inventions by, i, 520; ii, 497; iii, 273, 307.

Jack, Alexander B., obit., xi, 685.

Jack, R. L., x, 576.

Jackson, Miss., capture of, x, 425.

Jackson, Bishop, x, 20.

Jackson, O. T., sketch, v, 410; x, 402.

Jackson, Helen, obit., x, 650.

Jackson, I. W., obit., ii, 582.

Jackson, Thomas, obit., xi, 718.

Jackson, Timothy I., obit., vi, 684.

Jackson, Thomas P., obit., i, 619.

Jackson Monument Funds, i, 802.

Jacob, B., v, 714.

Jacobini, Cardinal Ludovico, obit., xii, 630.

Jacobs, J. A. M., obit., v, 600.

Jacoby, J., obit., ii, 608.

Jacquel, P., invention by, vi, 250.

Jacques, D. H., obit., ii, 582.

Jagnary, i, 78.

Jahn, Dr., x, 188.

Jalapa, Mexico, view of, iii, 554.

Jamaica, viii, 820; ix, 801; political excitement in, 802; sugar-trade of, 802; x, 781; xii, 801.

Jamba, the god, x, 396.

James, Daniel, obit., i, 619.

James, Sir H., obit., ii, 604.

James, Henry, sketch, vii, 438.

James, Mr., xii, 810.

Jameson oven, the, x, 580.

Jameson, Senar E., obit., xi, 685.

James-Watt dock at Greenock, the, x, 332.

Jamieson, Prof., of Glasgow, ix, 477.

Jamin, Jules Celestin, inventions by, vi, 258; obit., xi, 718.

Jaminet, observations, vi, 753.

Jamshidi tribe, the, x, 7, 8.

Janes, Bishop E. S., sketch, i, 423.

Janet, Henri A., x, 363.

Janin, theory of, vi, 240.

Janja, Peru, battle of, x, 687.

Jan Mayen, Austrian Expedition to, vii, 335.

Jannay, experiments by, viii, 111.

Janney, A. M., obit., ii, 582.

Jannsen, M., ix, 54; xi, 54.

Janson, Paul, ix, 78.

Japan, statistics, government, etc., in every volume; views in, i, 425, 427, 429; ii, 413, 414; ix, 418, 419; exchange of Saghalien for the Kurile Islands, i, 423; embassy to Spain and Portugal, 425; settlement with and embassy to Corea, 425, 426, insurrection incited by nobles, 428; the Mikado's journey in northern provinces, 428; Buddhist temple in Mondseki restored, 428; Sunday made a holiday, 428; commercial disturbance, 429; Protestant missions, 429, 430; the Russian

- church, 430; reactionary insurrection, ii, 413, 414; government success, 414; national exhibition, 414; effects of the revolution, iii, 461; political assassination, 462; singular disturbance in Yokohama, 462; discontent of the Samurai, 462; exhibits at Paris, 463; native editions of the Bible, 463; silk culture and exportation, iv, 529; viii, 457; iv, 529; annexation of Loochoo Islands, iv, 529, 530; defiance of quarantine regulations by the British minister, 530; education, v, 412; vii, 441; x, 508; xi, 459; industrial enterprises, v, 413; settlements in Fusan, Corea, Gensan, 413; discussion of Corean treaty, 413; social and political changes, vi, 453; the Daimios and Samurais, 453; Shintoism, 453; Tokio University, 453; telegraphy system, 454; marbles, 456; volcanoes and earthquakes, vii, 440; geology, climate, flora, 441; Fukusawa, 441; dissatisfaction with English commercial treaty, 441, 442; case of O'Neil, 442; treaty with Corea, viii, 455; Prussian administration, 456; merchant marine, 456; cabinet woods, 456; stagnation in trade, ix, 417; riots, 417; dissolution of Liberal party, 417; fighting in Corea, 418; perfect religious toleration, 419; death of the last Tycoon, 419; improvements in the condition of the people, x, 507, 508; art industries, 509; treaty with China, 510; three thousand laborers go to Hawaii, 510; money-order convention with United States, 511; purchase of iron-clads, 511; reception of United States minister, 511; cholera, 511; xi, 458; extradition treaty with United States, xi, 456; fashion and industries, 457; representative government, 457; literature and religion, 459; the navy and commercial marine, 458; xii, 402; feast of new rice, xi, 459; foreign trade, xi, 457; xii, 402.
- Japanese, social and political changes of, vi, 452; tools used by, ix, 418, 419; bath, illustration, i, 425; bronzes, illustration, 427
- Jar, found at L'Argar, illustration, xii, 28.
- Jarvis, Thomas J., sketch, iv, 690; v, 586.
- Jasper, invention by, vi, 258.
- Jaumont, Gen., x, 31.
- Jauner-Kuffler, frauds, x, 72.
- Jaureguiberry, Admiral, iv, 386; obit., xii, 630.
- Java, eruption in, viii, 286; insurrection in, xi, 608.
- Jeannette, the, voyage of, iv, 417; v, 288; vi, 322; vii, 331; map showing the route, 332.
- Jeannette Island, vii, 331.
- Jeffcoats, skate invented by, ix, 735.
- Jeffers, William N., obit., viii, 590.
- Jeffreys, John G., obit., x, 662.
- Jeffries, Dr. John, obit., i, 619.
- Jeffries, Richard, obit., xii, 630.
- Jejeebhoy, Jamssetjee, obit., ii, 604.
- Jelenck, Prof., xi, 49.
- Jeliaboff, trial of, vi, 796, 797.
- Jelinek, Karl, obit., i, 636.
- Jemshidia, the, x, 4.
- Jenckes, Thomas A., ix, 690.
- Jenkin, Fleeming, invention, viii, 679; ix, 729; obit., x, 662.
- Jenkins, George, invention, ii, 497
- Jenkins, Timothy, obit., i, 619.
- Jenson, explorations by, iii, 358; ix, 348.
- Jequirity, ix, 271.
- Jerome, David H., v, 523.
- Jerrold, William Blanchard, obit., ix, 617.
- Jersey City, N. J., xi, 171.
- Jerusalem, Aqueduct at, xi, 26.
- Jervis, Sir W. F. D., ix, 60.
- Jessel, Sir George, obit., 600.
- Jessen, investigations, viii, 686.
- Jesuits in Peru, xi, 750; cause of their expulsion from Germany, x, 712; incorporation of, in Quebec, xii, 708.
- Jeter, J. B., sketch, v, 413.
- Jetty System, the, v, 533.
- Jevons, William Stanley, sketch, vii, 442.
- Jewell, James Stewart, obit., xii, 592.
- Jewell, Marshall, sketch, i, 204; viii, 457.
- Jewett, Col. Ezekell, obit., ii, 582.
- Jew-fish, xii, 756.
- Jewitt, Llewellyn, obit., 718.
- Jews, i, 430; iv, 530; xii, 403; restrictions on, in Servia, ii, 691; in Roumania, iii, 740; vii, 729; ix, 703; x, 714; persecution in Morocco, v, 546, 644; anti-Semite movement in Prussia, v, 640; agitation against, in Hungary, vi, 403; viii, 48; numbers of, and persecutions in Germany and Russia, vi, 456; vii, 735; ix, 711; in Austria, viii, 47; relief measures, vii, 35; increase of, in Austria, vii, 51; ritual murder case, viii, 47; outrages against, viii, 709; disabilities, ix, 703; x, 511; convention of reformed, x, 511; relief for persecuted, 606; colonies of, in United States, xi, 459; Rabbinical Seminary at Rome, 460; immigration to Spain, 460; literature, educational institutions of, xii, 403, 404; exhibition in London, 404.
- Joachim III, Patriarch of Constantinople, ix, 278.

- Jobbins, E. H., ix, 477, 478.  
 Johannsen, E., island discovered by, iii, 354.  
 John, Franz, sketch, i, 484.  
 John, King of Abyssinia, i, 2, 3; ii, 2; iv, 2; v, 236; ix, 276; xi, 1; xii, 1.  
 John Gilpin, the, catamaran, illustration, ix, 117.  
 Johnite, x, 343.  
 Johns, John, obit., i, 619.  
 Johns Hopkins University, administration of, vii, 508.  
 Johnson, Abram, sketch, vi, 461.  
 Johnson, Alice, observations by, viii, 487.  
 Johnson, Andrew, Southern policy of, x, 481, 482.  
 Johnson, Alvin J., obit., ix, 608.  
 Johnson, Alexander S., obit., iii, 640.  
 Johnson, B., obit., v, 598.  
 Johnson, Herschel V., sketch, v, 414.  
 Johnson, Reverdy, sketch, i, 494.  
 Johnson, Rowland, obit., xi, 685.  
 Johnson, S. W., investigations by, v, 92; ix, 122.  
 Johnston, Archibald, obit., xii, 592.  
 Johnston, A. Keith, African, journey of, iii, 362; iv, 402; obit., iv, 700.  
 Johnston, Amos R., obit., iv, 698.  
 Johnston, Albert Sidney, x, 424.  
 Johnston, H. H., ix, 347, 544.  
 Johnston, Joseph E., x, 426, 427, 431.  
 Joint Rules of Senate and House, i, 153-158.  
 Joint-stock companies, new Connecticut law on, v, 195; law in Germany, ix, 858.  
 Jolly, P., experiments by, vii, 35; obit., x, 668.  
 Jonas, Carl, x, 72.  
 Jones, E. Lloyd, observations by, v, 36; xii, 673.  
 Jones, Francis C., prize awarded to, x, 367.  
 Jones, Joseph, discoveries by, iii, 320.  
 Jones, John B., sketch, vi, 461.  
 Jones, John Glancy, obit., iii, 640.  
 Jones, Joseph S., obit., ii, 582.  
 Jones, Owen, obit., iii, 640.  
 Jones, Thomas R., obit., v, 600.  
 Jones, W. A., x, 402.  
 Jones, William R., ix, 472.  
 Jonker Afrikander, x, 188.  
 Jordan valley, proposal to flood, viii, 307.  
 Jordan, Rowland, ix, 474.  
 Joseph, Chief, ii, 40.  
 Josephine, ex-Queen of Sweden, obit., i, 636.  
 Josh Billings. See Shaw, H. W.  
 Jostown, Africa, x, 121, 122.  
 Joubert, Piet, President of the Boer republic, ix, 114.  
 Journalism, improvements in, xi, 633.  
 Journey of Death, the, x, 633.  
 Jovanovich, Gen., vii, 57, 58; obit., x, 662, 730.  
 Joyce case, the, ix, 377.  
 Jubilee Exhibition, Berlin, xi, 345.  
 Juborn, Mount, ix, 544.  
 Judd, J. W., x, 47; xi, 45.  
 Judges, investiture, tenure, and removal of. See Criminal Jurisdiction, vii, 179.  
 Judicature, reform of, French, viii, 370.  
 Judson, Ed. Z. C., obit., xi, 685.  
 Juggernaut, temple of, illustration, ii, 392.  
 Jühlke, Dr., x, 796; xi, 370.  
 Julian Year, the, vii, 372.  
 Julien, Alexis A., ix, 45.  
 Julio, E. D. B., sketch, iv, 532.  
 Jumel trial, the, ix, 627.  
 Jumpers, the, ix, 554.  
 Juneau, Solomon, statue of, xii, 280.  
 Jung, M. E., observations by, viii, 526.  
 Jung, Sir Salar, in England, i, 366; obit., viii, 600; xii, 882.  
 Jungfleisch, experiments by, viii, 118; x, 157.  
 Junior Carlton Club-House, explosion at, ix, 377.  
 Junker, Dr., explorations by, ii, 330; iii, 362; x, 394; xi, 371; xii, 251.  
 Jupiter, satellites of, ii, 44; physical condition of, *ibid.*; spots on, iv, 51; v, 34; vi, 38; viii, 22; x, 50; period and light, v, 34; its resemblance to the sun, ix, 50; red spot upon, x, 50.  
 Jupiter Olympius, the temple of, xii, 21.  
 Jurgan, Jeanne, obit., iv, 774.  
 Juries, grand, iii, 447; Indiana law, vi, 425; negroes in, see Negroes.  
 Jurisdiction, disputed, of Greer County, Texas, xii, 760.  
 Jurisprudence, recent works on. See Literature, in every volume.  
 Justice boxes, in Persia, i, 660.  
 Jute, vi, 462; cultivation of, iii, 682; v, 64; vii, 485; ix, 787; machine for, vii, 485; illustration, vi, 462.  
 Jute and Jute-Butts, viii, 458.  
 Kabru, Mount, ix, 544.  
 Kabyles, insurrection of, iv, 15.  
 Kadesh, ix, 28.  
 Kadesh-Barnea, ix, 27.  
 Kahnweiler, invention by, vi, 266.

- Kailas, Mount, iv, 400.  
 Kairene, ix, 271.  
 Kaiserfeld, M., vii, 49.  
 Kakar Tribes, the, ix, 7.  
 Kalakaua, reign of, xii, 351.  
 Kalisch, Isidor, obit., xi, 685.  
 Kalish, Marcus M., obit., x, 668.  
 Kallioh, I. S., impeachment of, v, 77; obit., xii, 592.  
 Kalnoky, Count, sketch, vi, 468; x, 111.  
 Kanakas, labor of the, x, 62, 68.  
 Kangaroo, the great, illustration, ii, 52.  
 Kanawha River, improvement of, iii, 827.  
 Kanitz, F., ix, 28.  
 Kankakee Survey, the, vii, 421.  
 Kansas, State officers, statistics, legislative proceedings, etc., in each volume; view in, i, 416; Osage land decision, i, 487; lead discovered, ii, 416; election of Senator Plumb, 416; libel case decision, 417; invasion of Cheyennes, iii, 463; suit of bond-holders, 466; iv, 587; patrol guard on the Indian frontier, v, 416, 417; removal of colored people from Mississippi to, 417; droughts, cattle disease, and chinch-bugs, v, 417; vi, 463, 467; x, 514; Oklahoma raid, v, 417; telegraph war, 417, 418; drive-well dispute, 418; validity of registry-law, 418; title to seat in legislature, iii, 466; re-election of Senator Ingalls, iv, 532; v, 419; bribery charges, 532; question of obligation of telegraph companies to produce messages in court, 533, 534; prohibition amendment ratified, v, 420; coal-production, vi, 468; sketch of G. W. Glick, vii, 447; Senator Plumb re-elected, viii, 460; sorghum sugar industry, ix, 422; growth and development, x, 514.  
 Kansas City, Mo., xi, 171.  
 Kaolin, discovery of, viii, 641, 642.  
 Kaposi, Prof., ix, 272.  
 Kappes, Alfred, xi, 346; xii, 278.  
 Karategrin, state of, x, 2.  
 Karavaleff ministry, the, in Bulgaria, ix, 102; x, 102, 111.  
 Karnak, musical rocks at, x, 608.  
 Karond, massacres in, vii, 415.  
 Karrack, island of, x, 1.  
 Kara, surrender of, ii, 743.  
 Kartseff, Gen. A. P., i, 323.  
 Kashgaria, war of, with China, i, 109, 776; ii, 417; iii, 96; iv, 145. See also Turkistan.  
 Kassai, Prince. See John, King of Abyssinia.  
 Kassai River, the, x, 392.  
 Kassala, ix, 296; siege of, x, 315.  
 Kassatkine, N., v, 348.  
 Kasyapa, the Buddha, x, 39.  
 Katkoff, Michel Nikipporovich, obit., xii, 630.  
 Kauffmann, Constantine, obit., vii, 646.  
 Kauffmann, Ulrich, ix, 543, 545.  
 Kaulbars, Gen., xi, 106, 110.  
 Kava-kava, xi, 291.  
 Kavanagh, Julia, obit., ii, 604.  
 Kavvadias, Prof., observations by, ii, 32.  
 Kaye, Sir John W., sketch, i, 438.  
 Kayser, Dr., experiments by, x, 583; xi, 389.  
 Kearney, Dennis, trial of, v, 77.  
 Keatinge, Richard, obit., i, 686.  
 Kedes (Kadesh), ix, 28.  
 Kedzie, experiments by, vi, 352.  
 Keely, George W., obit., iii, 640.  
 Keeley, John Worrall, xii, 407.  
 Keeley motor, the, xii, 407; illustrations, 408, 409.  
 Keet, Rev. H., use of title by, i, 25.  
 Keifer, experiments by, viii, 121.  
 Keil, Ernst, obit., iii, 656.  
 Keil, Prof. M., ix, 475.  
 Keiley, A. M., appointment of, to Italy and Austria, x, 70.  
 Keim, Theodor, obit., iii, 656.  
 Kekulé, theory of, vi, 92.  
 Keller, Ferdinand, obit., vi, 694.  
 Keller, George, xi, 347.  
 Keller, Father, xii, 339.  
 Kelline, xi, 291.  
 Kellogg, Albert, obit., xii, 593.  
 Kellogg, Ensign H., obit., vii, 639.  
 Kellogg, William P., impeachment, i, 482; protest, v, 479.  
 Kellogg, Stephen W., i, 204.  
 Kelly, John, obit., xi, 686.  
 Kelso, Thomas, obit., iii, 640.  
 Kelung, capture of, ix, 139-143.  
 Kemble, W. H., v, 621.  
 Kemen, Mary Josephine, obit., xii, 593.  
 Kemp, invention by, vi, 265.  
 Kemper, I. de B., obit., i, 686.  
 Kenia, Mount, ix, 347.  
 Kennedy, James, obit., xi, 719.  
 Kennedy, Joseph C. G., obit., xii, 598.  
 Kennedy, R. W., invention by, xi, 537.  
 Kennion, John Wilberforce, obit., xi, 686.  
 Kent, Edward, obit., ii, 583.  
 Kentucky, statistics, State officers, etc., in each volume; views in, i, 439, 440; ii, 420, 421; viii, 463; Louisville registration act vetoed, i, 488; resources, geological surveys, ii, 420;

iii, 470; navigation of the Kentucky River, ii, 421; strike and riots, 421; iii, 478; election of senator, ii, 422; six per cent. rate of interest adopted, iii, 468; bill for re-establishment of the whipping-post, 469; monument to J. C. Breckinridge, 470; act on concealed weapons, 470; crop of chufas, 472; extradition case in court, 473, 475; the State prison, iv, 539; contract system, vi, 470; Buford trial, iv, 541; agricultural college founded, v, 422; exclusion of negro jurors, 424; negro voters, vii, 451; prosecution of lottery advertisers, v, 425; regulators, 425; lynching attempt, vii, 458; southern exposition, viii, 464; coal-mining, x, 516; school, xi, 467; tobacco and liquors, 467; atrocities in Rowan County, xii, 410, 411.

Keogh, W., obit., iii, 656.

Kep, or Lang Kep, battle at, x, 24, 25; attacked by Chinese, 27.

Kephir, fermented milk, ix, 121.

Keren, xi, 1; xii, 1.

Kerki, Russian occupation of, xii, 7.

Kermadec islands, annexation of, by Great Britain, xi, 60.

Kerner, Rev. Dr., death of, xii, 217.

Kerideo, Count de, obit., iii, 656.

Kerosene, improved test for dangerous, viii, 464; illustrations, 464, 465.

Kerr, Dr., experiments by, vi, 239.

Kerr, John B., obit., iii, 640.

Kerr, Col. James K., obit., i, 619.

Kerr, Michael C., sketch, i, 441.

Kesem, x, 86.

Keteltas, Eugene, obit., i, 619.

Ketteler, W. E., obit., ii, 604.

Key, David M., sketch, ii, 422.

Key West, illustration, i, 300.

Keyser, Ephraim, xi, 347.

Keyt, Dr. A. T., ix, 656.

Khafra, pyramid of, ix, 21.

Khame, Chief, x, 88.

Khartoum, x, 309, 318; fall of, ix, 299-304; x, 319; xi, 310; views of, viii, 299; ix, 289.

Khedive, private debt of the, i, 245; decree on commission of inquiry, iii, 264.

Khemnis necropolis, the, ix, 22.

Kheta, the, or Hittites, ix, 28.

Khiva, Russian protectorate over, x, 2.

Khoja-Saleh, x, 4.

Khokan, annexed to Russia, i, 44, 775, 776; discoveries, ii, 325.

Khorassan, people of, in favor of annexation to Russia, x, 10.

Khotan River, exploration of the, xii, 309.

Kidd, J., invention by, iii, 88.

Kiel, naval station at, ii, 279.

Kiel, Friedrich, obit., x, 663.

Kierulf, impeachment of, ix, 751.

Kiessling, K. I., observations by, x, 581, 582; xi, 54.

Kiev, disturbance at the University of, ix, 711.

Kilauea, Mount, eruption of, ix, 389.

Kilimandjaro, Mount, ix, 347, 544; x, 796.

Kilpatrick, Gen. See Peru, Chili, etc., vi, 738.

Ki-Lua, battle at, x, 26.

Kimball, Eugene, obit., vii, 639.

Kimberley, Earl of, sketch, v, 426.

Kimberley, South Africa, x, 135.

Kina-balu Lake, xii, 312.

Kindergartens, xii, 232; free, and working-man's school, New York, 234.

Kindler, Albert, sketch, i, 441.

King of Prussia, power of, manifests, vii, 354.

King, Clarence, explorations by, v, 297; x, 402, 408.

King, E. A., inventions by, iii, 275; iv, 339.

King, Louisa W., obit., iii, 641.

King, Richard, i, 323; obit., 636.

King, Rufus, obit., i, 619.

King Karl Land, x, 398.

King William's Land, New Guinea, x, 59.

Kingdom, J. M., obit., i, 620.

Kingsland, A. C., obit., iii, 641.

Kingsley, Henry, sketch, i, 441.

Kingsley, W. C., viii, 311; obit., x, 650.

Kingsbury, Benj., obit., xi, 687.

Kingston, N. Y., xii, 123.

Kingston, Canada, view of, i, 234.

Kinipple, W. R., x, 332.

Kinloch, Eliza, obit., xii, 593.

Kinney, explorations by, iv, 400.

Kinney, W. B., obit., v, 593.

Kinny, Mary C., obit., ii, 583.

Kinsella, T., obit., ix, 608.

Kirby, Timothy, obit., i, 620.

Kirchhoff, Gustav Robert, spectroscopic observations, vi, 242; sketch and portrait, xii, 412.

Kirkbride, T. S., obit., viii, 590.

Kirkland, scheme of, ix, 632.

Kirkwood, S. J., sketch, i, 412.

Kirsner, L., obit., i, 636.

Kirwan, D. J., obit., i, 620.

Kitchen, W. K., obit., i, 620.

Kitchener, Lieut., survey of Palestine, ii, 325; x, 319, 320.

- Kitson, H., xi, 846.  
 Kjeldahl, x, 156.  
 Klebs, experiments, iv, 414.  
 Klein, Dr., investigations by, iv, 442.  
 Klein, Julius L., sketch, i, 441.  
 Klein, Tobias, xii, 826.  
 Kleiner, Dr., invention by, iii, 482.  
 Klinkerfuss, W., obit., ix, 617.  
 Klossofsky, M., xi, 545.  
 Knaus, Ludwig, x, 867; xi, 847.  
 Knights of Labor, x, 516; xii, 524.  
 Knights of Pythias, x, 518.  
 Knit cloths, viii, 466; illustrations, 466, 467.  
 Knorr, Admiral, x, 122.  
 Knorr, Ludwig, x, 298,  
 Knorre, discoveries, i, 46; v, 84.  
 Knowles, Kaye, collection of, xii, 278.  
 Knox, John J., obit., i, 620.  
 Knox, Samuel R., obit., viii, 591.  
 Knoxville, Tenn., growth of, xii, 128.  
 Knutsen, K., x, 898; xi, 878.  
 Koch, Dr. Robert, experiments by, iii, 888; iv, 442; vii, 799; ix, 93, 143, 495, 497, 663; x, 800.  
 Koch, H. A., obit., i, 636.  
 Köchly, Hermann, sketch, i, 442.  
 Kohat Pass, opened, ii, 5.  
 Kohl, Friedrich, obit., i, 636.  
 Kohl, Johann G., obit., iii, 656.  
 Kohn, invention by, iii, 275.  
 Kola-nut, caffeine in the, viii, 118.  
 Kolbe, A. W. H., ix, 424.  
 Kollmann, experiments by, x, 691.  
 Komaroff, Gen., x, 5, 6, 8, 9.  
 Kompert, Leopold, obit., xi, 719.  
 König, F., experiments by, vi, 670.  
 König, G. A., discovery by, vi, 98.  
 König, Herbert, obit., i, 637.  
 Königgratz, battle of, x, 882.  
 Königsmark-Plaue, obit., i, 637.  
 Konn, invention by, iv, 839.  
 Konvaloff, M., xii, 108.  
 Köppen, Prof., xii, 489.  
 Korb-Weidenheim, Baron, iv, 60.  
 Kossel, experiments by, viii, 119; xii, 671.  
 Kostenko, Col., explorations in Khokan, ii, 325.  
 Kostomaroff, N. L., obit., x, 668.  
 Kovalensky, D. E., i, 823.  
 Krabbe, N. O., obit., i, 637.  
 Krakatoa, eruption of, viii, 526; possible connection with the red light, 526; ix, 53; x, 48, 401, 582.  
 Krapotchkin, assassination, iv, 683.  
 Krapotkine, Prince, imprisonment of, vii, 326; trial, viii, 368.  
 Krasczewski, Joseph Ignatius, trial of, for high treason, ix, 358; obit., xii, 632.  
 Kraton, capture of, x, 625.  
 Kratschner, experiments, vi, 750.  
 Krael, Dr., x, 420.  
 Krause, G. A., explorations by, viii, 886; xii, 805.  
 Kreling, August, sketch, i, 442.  
 Kremlin, the, illustration, ii, 687.  
 Kremser, Dr., x, 582.  
 Kremsier, Moravia, meeting of two emperors at, x, 69; reason for absence of the third, x, 70.  
 Kriegk, G. L., obit., iii, 656.  
 Kries, experiments, vi, 748.  
 Krikor, Odian Effendi, obit., xii, 632.  
 Kronecker, H., ix, 654.  
 Krüdener, Baron, sketch, ii, 422.  
 Krueger, Dr., ix, 52.  
 Krueger, S. J. P., ix, 118.  
 Krug, Anna C., obit., ii, 604.  
 Krüger, K. W., obit., i, 637.  
 Krupp, Alfred, obit., xii, 632.  
 Krüss, G., xii, 101, 111.  
 Kruzof Island, volcano on, xi, 881.  
 Krzyzanowski, Wladimir, obit., xii, 594.  
 Kuang-Tri, massacre at, x, 81.  
 Kubuchu, Prof., ix, 45.  
 Kuechler, ix, 858.  
 Kufeit, battle at, x, 819.  
 Kuh, Emil, obit., i, 637.  
 Kühne, observations, viii, 635.  
 Kühner, R., obit., iii, 657.  
 Kukenam, Mount, illustration, ix, 539.  
 Ku-klux, law, vii, 457; cases, viii, 474.  
 Kula, engagement at, x, 728.  
 Kuligan, Fort, taken, x, 117.  
 Kulja, restoration of, to China, iv, 144; v, 101; vi, 107, 800; revolt in, x, 173.  
 Kumunduros, i, 867, 868.  
 Kuntz, Dr., xii, 674.  
 Kuo-Tung-tao, recalled, iv, 145.  
 Kurds, insurrection of, v, 623; vi, 731; rescue of Obeidullah by, vii, 805.  
 Kurile Islands, exchanged for Saghalien, i, 427.  
 Kuro-Siwo, the. See Gulf Stream, Pacific.  
 Kurupatkin, Capt., explorations of, ii, 826.  
 Kusaie Island, ruins in, x, 139, 140.  
 Kutschker, Cardinal, obit., vi, 695.  
 Kwangsi, revolt in, iii, 101; iv, 148.  
 Kwangsu, Emperor, ix, 136. See under China.



Labels, x, 688.  
 Labor, Chinese. See Chinese.  
 Laborers' Lien Act, iv, 845.  
 Labor Legislation, in France, viii, 369; in Germany, vii, 354, 356; in England, 411; in the United States, xi, 260; xii, 85, 444; in Belgium, xii, 66; limit of working-day, ix, 59, 68.  
 Labor, movements and agitations of, iii, 73; v, 77; vii, 453; x, 72; xi, 83, 173, 260, 359, 389, 405, 979; foreign contract, x, 231; for the unemployed, x, 147; black, in the Southern Pacific, x, 62; wages of, in Japan, 507.  
 Labor Statistics, Missouri, Bureau of, iv, 641; New York, viii, 570; Michigan, vii, 540; national, ix, 192.  
 Labor Strikes, i, 649; ii, 421, 423, 530, 636, 750; iii, 407; iv, 714, 717; v, 119; vi, 516; vii, 506, 614; x, 672; xi, 432, 455; xii, 66, 376, 742 *et seq.* See also Labor, vii, 453.  
 Laboring-men, idle, in San Francisco, iii, 69.  
 Labor-traffic in the Pacific, x, 62.  
 Laboulaye, E. R. L., obit., viii, 600.  
 Labye, L., invention by, vi, 258.  
 Lace, iron-casting upon, xii, 486.  
 Lachat, Eugène, obit., xi, 719.  
 Lacoste, M., obit., x, 668.  
 La Cour, telephone, i, 740.  
 Lacrosse, x, 518; illustrations, 519.  
 Lacroix, P., obit., ix, 617.  
 Laotate of quinine, x, 299.  
 Lactic acid, xii, 678.  
 Ladoue, T. O. F. de, obit., ii, 604.  
 Ladreyt, Cassimer, obit., ii, 583.  
 Ladrone Islands, xii, 313.  
 Laessøe, F. de, observations by, x, 38.  
 La Farge, John, ix, 242, 243.  
 Lafayette, Oscar de, obit., vi, 695.  
 La Flesche, Frank, ix, 45.  
 Laffin, Luther, obit., i, 620.  
 La Hitte, Vicomte de, obit., iii, 657.  
 Lager, M., x, 5.  
 Labrbush, Capt. F., obit., ii, 583.  
 La Horie, Gen., x, 490.  
 Laing, Maj., murder of, vi, 328.  
 Laidley, Theodore T. S., obit., xi, 687.  
 Lighton, Albert, obit., xii, 594.  
 Lalla Rookh, Queen of Tasmania, i, 53.  
 Lajoux, H., x, 156.  
 Lake Crater, xi, 381.  
 Lake Suai, outlet discovered to, xii, 304.  
 Lama, the, x, 396.  
 Lamar, L. Q. O., sketch, x, 757; portrait, 764.  
 Lamarmora, Marchese di, obit., iii, 657.  
 Lamater, De, John, obit., ii, 583.

Lambros, M., x, 37.  
 Lamont, George D., obit., i, 620.  
 La Motte, Charles E., obit., xii, 594.  
 Lampa, electric, ix, 304, 305. See also Electric Lighting.  
 Lamson, W. S., invention by, xii, 94.  
 Lancaster, Pa., growth of, xi, 171.  
 Lanciani, Rodolfo, xi, 85.  
 Land Bill, in California, v, 71.  
 Landerer, F. X., obit., x, 663.  
 Land Grant Forfeitures, x, 244; xi, 263.  
 Land Grant Railroads, xii, 202.  
 Land-Grants, in Oregon, v, 612; old, in New Mexico, viii, 565; to railroads, ix, 214; xii, 202; revoked, ix, 214; xii, 777. See Land Grant Railroads.  
 Landholt, xii, 103.  
 Land Laws, in Denmark, vi, 211; in India, vi, 422; viii, 441; in New South Wales, viii, 35; in Roumania, viii, 698; in Russia, viii, 706; in Great Britain, x, 521; in Ireland, 525; in Scotland, 527; in Australia, ix, 58, 59; in Bengal, x, 8, 495, 527; in Bosnia, ix, 64, 65; in United States, x, 528; xi, 577. See Land Tenure.  
 Land League, arrest of leaders, vi, 367, 368; clergy on, vi, 367; viii, 413; Ladies', vii, 368.  
 Landlord and Tenant, English law of, x, 526.  
 Land-owner ministry, the, in Denmark, x, 290.  
 Land Reform, in Great Britain, x, 456-458.  
 Landsborough, William, obit., xi, 719.  
 Landseer, C., obit., iv, 700.  
 Landseer, Sir Edwin, xi, 845.  
 Landseer, Thomas, obit., v, 600.  
 Lands, laws on mineral, vi, 76; public, i, 84; iv, 830; v, 25, 271; vi, 300, 597; in Mexico, x, 590; alleged title frauds in West Virginia, vii, 835; unlawful occupancy of public, x, 241; allotment of, to Indians, xii, 205; measures to restrict the ownership of, in the territories, to American citizens, xii, 206.  
 Land system, Torrens, x, 674.  
 Land Tenure in Europe, vi, 472.  
 Land-tax, equalization of the, in Italy, xi, 453.  
 Land-transfer, system of, x, 674.  
 Landwehr, the, in Austria, ix, 68.  
 Lane, Edward W., sketch, i, 442.  
 Lane, Henry S., obit., vi, 684.  
 Lane, Joseph, sketch, vi, 475.  
 Lane-Fox Electric Lamp, vii, 275.  
 Lanfrey, P., obit., ii, 604.  
 Lang, Heinrich, obit., i, 637.  
 Langenbeck, Bernhard von, obit., xii, 632.  
 Langer, Karl, obit., xii, 632.

- Laniewicz, Marian, obit., xii, 632.  
 Lang Kep, battle at, x, 24, 25.  
 Langley, J. N., experiments by, vi, 749, 750.  
 Langley, J. W., x, 149; xi, 44.  
 Langley, S. P., observations by, iii, 35; vii, 33; viii, 526; ix, 48, 539; xi, 49, 55, 57; xii, 31, 45.  
 Langlois, M., ix, 344.  
 Langson, battle at, x, 25, 26.  
 Language-war in Austria-Hungary, xii, 52.  
 Lanier, Sidney, obit., vi, 685.  
 Lanigan, George Thomas, obit., xi, 687.  
 Lanoline, xi, 291; xii, 105, 670.  
 Lansdowne, Marquis of, viii, 88; sketch, with portrait, viii, 468; xii, 838.  
 Lansing, Mich., capitol at, illustration, i, 552.  
 Lantanine, xi, 291.  
 Lanza, Signor, obit., vii, 646.  
 La Perouse, ix, 275.  
 Lapham, Elbridge G., sketch, vi, 648.  
 Lapps, the, proposal to remove, to Greenland, ix, 348.  
 Larabit, M. D., obit., i, 637.  
 L'Argar, discoveries at, xii, 23.  
 Largeau, explorations, i, 382.  
 Larivière, P. C., sketch, i, 442.  
 Larkin, observations, vii, 34.  
 La Rochette, E. de, obit., i, 637.  
 Larsen, experiments, viii, 118.  
 L'Artigue's single railway, illustration, xi, 320.  
 Larynx, intubation of, ix, 748; x, 743.  
 Lasagni, Cardinal, death of, x, 713.  
 Lasgird, ix, 5; illustration, 5.  
 Lasker, Eduard, retirement of, viii, 395; sketch, viii, 468; incident in Congress, ix, 225, 359.  
 Lassen, Christian, sketch, i, 442.  
 Lasteyrie, Marquis de, obit., viii, 601.  
 Latch, gravity, illustration, xii, 653.  
 Latrobe, Benjamin H., obit., iii, 641.  
 Latour, Isidore, obit., ii, 604.  
 Laube, H., obit., ix, 617.  
 Lauderdale, Earl of, obit., iii, 657.  
 Laurens, Jean Paul, x, 359; xi, 343.  
 Laurent, Francis, obit., xii, 638.  
 Laurentie, P. S., sketch, i, 443.  
 Laurie, A. P., xii, 110.  
 Lauzanne, de Vaux-Roussel, Chevalier de, obit., ii, 604.  
 Laval, University of, difficulty concerning, viii, 695.  
 Laveau, Marie, obit., vi, 685.  
 Lavoësium, new metal, ii, 502.  
 Law and Order League of the United States, xii, 413.  
 Law, Constitutional, International Arbitration, viii, 469; Weil and La Abra cases, *ibid.*; Legal-Tender Acts, 471; power of Congress in elections, 474; recent progress, vi, 475; vii, 457; ix, 425; constitutional, xi, 467.  
 Law, practice of, by women. See Women.  
 Law, recent books on. See Literature, in every volume.  
 Lawes, explorations of, i, 330.  
 Lawrence, Albert Gallatin, obit., xii, 594.  
 Lawrence, Effingham, obit., iii, 641.  
 Lawrence, George A., obit., i, 637.  
 Lawrence, J. L. M., Baron, sketch, iv, 543.  
 Lawrence, Kansas, xi, 172.  
 Lawrence, Mass., xi, 172.  
 Lawrence, William Beach, sketch, vi, 483.  
 Laws against Foreigners in Russia, xii, 724.  
 Laws, Charles Alfred, obit., xii, 595.  
 Laws of War, and Red Cross Societies, vii, 715.  
 Laws, State, codification of New York, iii, 615; revision of Vermont, v, 708; compilation of Michigan, vi, 575.  
 Lawson, D. T., experiments of, vi, 259; theory of boiler explosions, vii, 296.  
 Lawson, James Anthony, obit., xii, 633.  
 Lawson, Sir Wilfrid, ix, 372.  
 Lawsuits against United States, vii, 460.  
 Lay, Mr., invention by, ii, 719.  
 Lay, Henry O., obit., x, 650.  
 Layard, Sir A. H., x, 140, 143.  
 Laycock, Thomas, obit., i, 637.  
 Laymen's League, xi, 21.  
 Layton, Caleb Rodney, obit., xii, 595.  
 Lazarus, Emma, sketch and portrait, xii, 414.  
 Lazeano, Admiral F., x, 138.  
 Lea, Carey, x, 153; xii, 105.  
 Lea, Isaac, obit., xi, 637.  
 Lead and Silver process, viii, 581.  
 Lead-poisoning, iv, 4; viii, 116; x, 161.  
 Lead, use of, in prehistoric times, ix, 23; market, 481. See also under Metallurgy.  
 Leadville, growth of, iv, 161; mines, vi, 118.  
 League of the emperors, xi, 391.  
 Leake, Martin, ix, 25.  
 Leander McCormick Observatory, vii, 41.  
 Leather-board, iv, 662.  
 Leavenworth, xi, 172.  
 Leavenworth, Eliza Warner, obit., xii, 595.  
 Leblanc, Louis, obit., xi, 719.  
 Leblond, Désiré Médérie, obit., xi, 720.  
 Le Bon, experiments, viii, 116.  
 Lebranc's process for carbonate of soda, xii, 108.  
 Lebreton, E. C., obit., i, 637.

Lecense, J. N. A., obit., iii, 657.  
 Lechesne, xii, 488.  
 Le Conte, John L., obit., viii, 591.  
 Lecoq, discovery by, vi, 93.  
 Ledebur, observations of, xi, 534.  
 Lederer, Joachim, obit., i, 637.  
 Ledochowski, Cardinal, ix, 356.  
 Lee, Alfred, obit., xii, 595.  
 Lee, Charles T., x, 156.  
 Lee, John D., obit., ii, 588.  
 Lee, Robert E., estate of, vii, 460; monument to, i, 802; x, 427, 429; indictment, 431.  
 Leeds, experiments, viii, 111.  
 Leeward Islands, the, xii, 801.  
 Le Faure, A., obit., vi, 695.  
 Lefebvre, Jules, x, 358; xii, 276.  
 Lefebvre-Durulé, obit., ii, 605.  
 Leferts, Col. Marshall, obit., i, 620.  
 Le Flô, Adolphe Emmanuel Charles, obit., xii, 638.  
 Lefranc, experiments by, viii, 118.  
 Lefranc, P. J., obit., ii, 605.  
 Legagneur, H. M. F., obit., i, 638.  
 Legal Tender, United States notes as, iv, 367; legality of their issue, iv, 385; during the rebellion, vii, 399; acts on, viii, 471.  
 Leger, M., ix, 473.  
 Leggett, Francis A., obit., i, 620.  
 Legislative Assemblies, how created, and Disciplinary Power of. See Disciplinary Power, etc., vii, 194.  
 Legislative authority, contempt of, x, 261.  
 Legislative, Executive, and Judicial Appropriation Bill, iv, 234-249; in extra session, 274-288; President's veto, iv, 289; amended bill, 291, 292; judicial appropriation bill, 292; vetoed, 294.  
 Lehmann Pasha, obit., ii, 605.  
 Leigh, Egerton, obit., i, 638.  
 Leighton, Sir Frederick, x, 309; xi, 344, 345; xii, 276.  
 Leitrim, Earl of, murder of, iii, 406.  
 Leland, Henry, obit., ii, 583.  
 Leland, George S., obit., vii, 639.  
 Leleiohoku, W. P., obit., ii, 605.  
 Lemaire, Philippe, obit., v, 600.  
 Lemaire, Pierre Auguste, obit., xii, 633.  
 Lemaitre, Frédéric, sketch, i, 443.  
 Lemnos, inscriptions in, xi, 84.  
 Lemon-juice as an antipyretic, ix, 271.  
 Lennox, Lord, obit., ii, 605.  
 Lena Delta, the, ix, 348.  
 Lendenfeld, Dr. von, ix, 545.  
 Lenormant, F., obit., viii, 601.

Lenox, James, sketch, v, 426.  
 Lenox, Samuel, obit., i, 620.  
 Lenox Library, v, 427.  
 Lenström, experiments, viii, 29.  
 Lent, Lewis B., obit., xii, 596.  
 Lenz, Oscar, explorations by, v, 298; vi, 327; viii, 386; classification of tribes by, ii, 334; ix, 395.  
 Leo XIII, elected, iii, 732; encyclicals, iii, 733; vii, 723; correspondence with German Emperor, vii, 725; arbitration by, x, 144. See also Pecci and Papacy.  
 Leo, Heinrich, obit., iii, 657.  
 Leonard, J. E., obit., iii, 641.  
 Leopold I, statue of, v, 55.  
 Leopold II, African expeditions due to, v, 295; ix, 80, 166, 167; x, 192, 392; silver wedding of, iii, 56; iv, 76.  
 Leopold, Prince, marriage of, vii, 369; obit., ix, 618.  
 Lepage, Bastien, obit., ix, 618; sale of works of, x, 364.  
 Lepanto, the, illustration, vii, 574.  
 Lepère, E. O. P., sketch, iv, 386.  
 Le Plongeon, Augustus, explorations of, v, 298; xi, 24.  
 Leprosy, in Colombia, xii, 140.  
 Lepsius, K. R., obit., ix, 618; his theory of the pyramids, ix, 21; x, 85, 86.  
 Lequesne, Eugene Louis, obit., xii, 633.  
 Leray, Francis Xavier, obit., xii, 596.  
 Lerdo, President, defeated, ii, 512.  
 Lerothodi, chief, x, 85.  
 Le Royer, M., x, 376.  
 Leschjanin, Gen., x, 723, 729.  
 Lesley, J. P., ix, 44; x, 45.  
 Leslie, Frank, sketch, v, 427.  
 Leslie, T. E. O., obit., vii, 646.  
 Lessar, M., x, 5, 7, 16, 17.  
 Lesseps, F. de, vi, 714; viii, 307, 308; x, 178.  
 Lessing, Karl F., obit., v, 600.  
 Letcher, John, obit., ix, 608.  
 Letellier de St. Just, L., sketch, vi, 485.  
 Letellier-Valazé, sketch, i, 444.  
 Letheby, H., obit., i, 638.  
 Letrange, zinc process of, vii, 532.  
 Letsie, chief, vi, 85; x, 84.  
 Letters, opening of, decision concerning, iii, 809; immediate delivery, x, 251; postage on, 252.  
 Leuchtenberg, Duke of, obit., ii, 605.  
 Levee Convention, a, viii, 495.  
 Levee System, the, v, 532.  
 Leven, Earl of, obit., i, 638.

- Leverich, O. P., obit., i, 620.  
 Leveridge, John, obit., xi, 688.  
 Leverrier, U. J. J., obit., ii, 605; xi, 589.  
 Le Vert, Octavia Walton, obit., ii, 588.  
 Lewal, General, x, 25.  
 Lewin, invention by, x, 845.  
 Lewes, George Henry, obit., iii, 658.  
 Lewis, Dio, obit., xi, 688.  
 Lewis, Estella A., sketch, v, 429.  
 Lewis, Harriet, obit., iii, 641.  
 Lewis, H. C., researches of, vi, 19.  
 Lewis, Ida, v, 455.  
 Lewis, John F., sketch, i, 444.  
 Lewis, Tayler, sketch, ii, 432.  
 Lewis, Winalow, lantern, v, 444.  
 Lewthwaite, J., invention by, ix, 471.  
 Lexington, Ky., College of Arts at, illustration, ii, 421.  
 Lexington, Mass., monument at, illustration, ii, 487.  
 Lexington, Va., Washington and Lee University at, illustration, ii, 761.  
 Ley, W. Clement, xi, 543.  
 L'Hote, x, 154.  
 Libbey, Prof., xi, 881.  
 Liberation Society, xi, 17.  
 Liberia, i, 9; v, 429; viii, 387; schools in, xii, 416; slavery and polygamy in, 417; colonization, 417; inducements to emigration, 417; coffee-culture in, 417.  
 Liberty, statue of, xi, 823, 649.  
 Librarians, convention of, xi, 475.  
 Libraries, the vice-regal, in Egypt, i, 247; the Corvina, ii, 379; discovered at Sippara, vii, 262; free circulating, xi, 649.  
 Library Economy and Statistics, xi, 474; catalogues, classification, selection of books, buildings, 476; legislation concerning, in the various States and territories, xii, 418; incorporation of company, 418.  
 Libyan Desert, journey in the, xii, 804.  
 License question, the, viii, 668. See also Temperance.  
 Lichena, iii, 476; ix, 94.  
 Lichtenfels, T. P., obit., ii, 605.  
 Lick, James, sketch, i, 444.  
 Lick Observatory, v, 86; viii, 28; ix, 46; x, 54; xi, 57; xii, 89.  
 Licona River, discovery of, iv, 401.  
 Lidgiwidgi Tancannini. See Lalla Rookh.  
 Lidy, C. M., experiments by, iv, 186.  
 Liebermann, invention by, viii, 465.  
 Liebig, Franz, ix, 273, 808; xii, 101.  
 Liebknecht, Herr, imprisonment of, x, 418.  
 Liebreich, Prof., xii, 670.  
 Liebschutz, Morton, x, 154.  
 Liep-Bril, Judah Jechiel, obit., xi, 720.  
 Life-Saving Service, United States, iii, 749; illustrations, 759-766; i, 592-594.  
 Light, sound produced by, apparatus showing, illustration, vi, 788.  
 Light-house establishment, the United States, v, 430; illustrations, 438-446.  
 Light-houses, Tillamook, illustration, v, 443; Fowey Rocks, illustration, 439; screw-pile, in Hampton Roads, 438; Paris Island and St. Augustine, illustration, 440; Spectacle Reef, 442; Eddystone; see Eddystone; in Chili, xi, 151; in Cojuinto, Nicaragua, 658.  
 Light-house, steam-tender, illustration, v, 453.  
 Light-ship, illustration, v, 450.  
 Lightning, effects of, on species of trees, i, 250; Arago's classification, xii, 492; lightning-balls, 492; globular, 494; extent of flash, 494; conditions of danger from, 494; statistics of damage from, 494.  
 Ligne, Prince de, obit., v, 601.  
 Li-Hung-Chang, sketch, i, 112; x, 29, 174.  
 Likwa, or Hikwa, Lake, v, 297.  
 Lilienberg, N., x, 580.  
 Lima, earthquake at, ix, 649.  
 Limairac, J. de, obit., i, 638.  
 Limouzin, Madame, xii, 294.  
 Lincoln, Roman relics at, ix, 22.  
 Lincoln, Abraham, statue of, xii, 280.  
 Lincoln, Mary T., obit., vii, 639.  
 Lincoln, Robert T., sketch and portrait, vii, 808.  
 Lind, Bertha, ix, 865.  
 Lind, Jenny, sketch and portrait, xii, 420.  
 Lindblad, A. F., obit., iii, 658.  
 Linderman, H. R., sketch, iv, 543.  
 Lindsay, David, exploration by, in Australia, xii, 311.  
 Lindsay, J. W. S., obit., ii, 605.  
 Lindsay, Thomas N., obit., ii, 584.  
 Lindstrom, Gustav, ix, 636.  
 Linsly, Jared, obit., xii, 596.  
 Lippincott, Joshua Ballinger, obit., xi, 688.  
 Lippitt, Henry, i, 700.  
 Lippman, experiments by, viii, 111.  
 Lipsey, A. B., invention by, viii, 881.  
 Liquefaction of Gases, ix, 434.  
 Liquidation law, in Egypt, ix, 285, 291.  
 Liquids, evaporation of, xi, 429.  
 Liquor laws, in Virginia, ii, 758; the Moffett Register, 759; in Ohio, xii, 643.  
 Liquor question. See Temperance and Prohibition.

Lisbon, view of, illustration, i, 665.  
 Lisgar, Baron, sketch, i, 444.  
 Lista, Ramon, exploration by, xii, 815.  
 Lister, Dr., ix, 746.  
 Liszt, Franz, obit. and portrait, xi, 478.  
 Literary Congress, iii, 814; x, 746.  
 Literary Property, xii, 140.  
 Literature, American, British and Continental, in every volume.  
 Lithium, discoveries of, iv, 419.  
 Lithofracteur, x, 845.  
 Lithotrity, viii, 752.  
 Little, E. T., x, 862.  
 Little, James L., obit., x, 651.  
 Littlefield, Alfred H., vi, 789.  
 Little Popo, ix, 865.  
 Little Rock, view of capitol at, ii, 87.  
 Littrow, K. L. von, obit., ii, 605.  
 Liver, operations on, viii, 751; nerves in the, ix, 654.  
 Liversidge, A., investigation by, vi, 97, 98.  
 Livron, C., experiments, vi, 751.  
 Li-Yung-Choi, or Li-Yung-Tsai, revolt led by, iii, 101; iv, 143.  
 Lloyd, Clifford, ix, 283, 285, 286; x, 455.  
 Lobbying, in Georgia, iv, 421.  
 Loch, Sir H. B., ix, 57.  
 Lock Prisso, x, 121, 122.  
 Lockroy, M., xi, 854.  
 Lockwood, Cape, ix, 85.  
 Lockwood, discovery by, ii, 825.  
 Lockwood, Frederick F., obit., i, 620.  
 Lockyer, J. N., observations by, iii, 85; iv, 138; vi, 243; vii, 33, 37; viii, 526, 528.  
 Locomotive, first, built in America, see Cooper, i, 212; compressed-air, i, 478; illustrations, 478, 479; vi, 512; with duplex driving-wheels, vi, 511; Fontaine, illustration, vi, 511.  
 Lodge, at North Easton, illustration, xii, 363.  
 Lodge, J. O., ix, 46.  
 Lodyguine, invention by, iii, 275.  
 Loew, discovery by, vi, 99.  
 Loew, Charles E., obit., xi, 698.  
 Loewe, Ludwig, obit., xi, 720.  
 Loewy, Dr., xii, 85, 875.  
 Loftus, Lord, A. W. F. S., iv, 55; ix, 58.  
 Logan, John Alexander, sketch, v, 477; obit. and steel plate portrait, xi, 504.  
 Logan, Stephen J., obit., v, 593.  
 Log-rolling, iv, 718.  
 Löhe, Emil, obit., i, 638.  
 Lomakin, Gen., iv, 776.  
 Loménie, L. L. de, obit., iii, 658.

London and its environs, map of, ii, 860; illustrations: Trafalgar Square, 861; St. Paul's, 862; Westminster Abbey, 863; the Tower, 864; Buckingham palace, 866; Albert memorial, 867.  
 Long and Rook islands, x, 681.  
 Long, Charles Chaillé, sketch, iii, 493.  
 Long, Edwin, x, 860; xi, 845.  
 Long, John D., sketch, v, 501.  
 Longevity, ix, 568.  
 Longfellow, Henry Wadsworth, sketch, vii, 478; portrait, vi, 485.  
 Longman, William, obit., ii, 606.  
 Lonsdale, Earl of, sketch, i, 480; collection of pictures of, xii, 278.  
 Loochoo Islands, claimed by China and Japan, iv, 147, 529; v, 418.  
 Look Tin Sing, case of, ix, 427.  
 Loom, positive-motion, vii, 479.  
 Looms, carpet, viii, 94.  
 Loon Lake, engagement at, x, 129.  
 Lopez, A., Marquis of Comillas, obit., viii, 601.  
 Lopez, P. M., obit., ii, 584.  
 Lord, Jarvis, obit., xii, 596.  
 Lord, Rev. John C., obit., ii, 584.  
 Lore, Charles B., sketch, vii, 189.  
 Lorillard, Pierre, x, 891.  
 Loring Pasha, William Wing, i, 3; obit. and portrait, xi, 506.  
 Loris-Melikoff, Gen., sketch, ii, 455; attempt on life, v, 663; letter to, from Nihilists, 664.  
 Lorne, Marquis of, Governor-General of Canada, iii, 12, 246.  
 Lorquet, L. M. P., sketch, i, 480.  
 Lorson, King, ix, 865.  
 Los Angeles, Cal., xi, 172; xii, 123.  
 Lothrop, Samuel K., obit., xi, 689.  
 Lott, J. A., obit., iii, 641.  
 Lotteries in Kentucky, v, 425; State and private, in Germany, x, 417; in Mexico, x, 589; in Brazil, xii, 71.  
 Lottimer, William, obit., i, 620.  
 Lotze, H., obit., vi, 695.  
 Lough, J. G., sketch, i, 481.  
 Louis IV, of Hesse, ii, 852.  
 Louisiad Islands, x, 681.  
 Louisiana, statistics, State officers, legislative proceedings, etc., in each volume; views, i, 488; proposed constitutional amendments, i, 481; removal of Judge Hawkins, 481, 482; charges of misappropriation, 482; question of impeachment of Gov. Kellogg, 482, 483, 484; asserted violence, intimidation, etc., 485, 486; address of Nicholls, 491; of clergy-

- men, 491; rival legislatures, and governors, 493; Dubuclet confirmed, 493, 494; decision of electoral commission, ii, 208; the two governments, ii, 455-465; Senator Spofford elected, 465; immigration, 467; case of J. C. Moncure, 467; constitutional convention, iii, 561; reorganization under the new constitution, v, 478; constitution of 1879, vii, 483; suit of State of New Hampshire, v, 479, 480; vi, 516; of New York, vi, 516; viii, 493; labor riots, and strikes, v, 482; vi, 516; colored university, v, 484; other schools, vii, 481, 482, 484, 485; financial embarrassment of New Orleans, vi, 517; culture of Perique tobacco abandoned, and new products introduced, 517, 518; jetties and railroads, 518; vii, 485, 486; overflows, vii, 480; ix, 453, 455; sugar, jute, rice, viii, 485, 496; canal improvement, ix, 455; State lands, viii, 495; levees, 495; cotton trade; ix, 456; Petite Anse or Salt Island, x, 549; iron discovered, 549; New Orleans committee of one hundred, 549; Tulane University, 549; Sunday law, xi, 509; ten-hour law, xii, 444; sugar-planters' association, 444.
- Louis Philippe, xi, 481.
- Louisville, Ky., growth, xi, 172; illustrations, bridge at, i, 439; City Hall, ii, 420; exposition building, viii, 463.
- Lourdes, basilica of, i, 705.
- Loutin, M., invention by, iii, 271.
- Louvain, reformatory prison at, viii, 497.
- Louvre, court of the, illustration, iii, 844.
- Lovell, Mansfield, obit., ix, 608.
- Low, John G., ix, 248.
- Lowder, observations by, vii, 39.
- Lowe, water-gas process, viii, 274.
- Lowell, Mass., growth of, xi, 173.
- Lowell, James Russell, ii, 467.
- Lower California, Americans in, xii, 503.
- Lowry, Robert, vi, 600.
- Loyal Legion, the, xii, 445; badge of, 329.
- Loyola, Ignatius, anniversary, v, 673.
- Lozère, xi, 379.
- Lualaba River, the, ii, 331; iii, 363, 364.
- Lubbock, Lady E. F., obit., iv, 700.
- Lucas, Louis A., i, 322.
- Luohsinger, Prof., ix, 658.
- Lucius, R., sketch, iv, 740.
- Ludeking, Charles, xii, 679.
- Luder, M., invention by, ix, 737.
- Luderitz, F. A., ix, 362, 363; x, 137; xii, 306.
- Ludlow, N. M., obit., xi, 689.
- Ludlow, Capt. William, expedition of, x, 402.
- Ludwig II, of Bavaria, sketch, xi, 511.
- Ludwig III, Grand Duke of Hesse, obit., ii, 606.
- Ludwig, Dr., experiments by, x, 694.
- Luh Vinh Phuoc, x, 27.
- Luitpold, Prince, xi, 392.
- Luiz I, King of Portugal, iii, 690.
- Lukjanon, Dr., experiments by, xii, 674.
- Lull, Edward Phelps, obit., xii, 597.
- Luminais, Evariste, x, 358.
- Lumsden, Sir Peter, ix, 6; x, 4, 5, 6, 8, 16.
- Luna, Juan, xi, 343.
- Lunacy, the Lyman case, ix, 676.
- Lunatic asylums, commitments to, in Illinois, iv, 479.
- Lunge, G., experiments by, vi, 94.
- Lung-Plague of Cattle, vii, 486.
- Lungs, operations on the, ix, 748; x, 742.
- Lunt, George, obit., x, 651.
- Lupton Bay, discovery by, viii, 386; x, 394.
- Lushington, Sir S., obit., ii, 606.
- Luther Quadricentennial, viii, 498; statue in Eisleben, illustration, 501.
- Luther, Prof., discovery by, ii, 44.
- Lutherans, statistics, councils, societies, etc., in each volume; pulpit and altar fellowships, discussion of the "Galesburg rule," i, 471; ii, 496; iv, 574; vi, 521; Free Diet, i, 472; iii, 507; marriage with a deceased wife's sister, iii, 506; division on doctrine of predestination, vi, 521; movement for institution of bishops, viii, 505; church standards, ix, 458; order of service, x, 552; xi, 515; union in the south, x, 553; xi, 514; gifts to Philadelphia hospital, xii, 448; Muhlenberg centenary, xii, 450.
- Lutz, Dr. von, xi, 392.
- Luxor, temple of, x, 32.
- Lyall, J., invention by, vii, 479.
- Lyle, invention by, iii, 754, 762.
- Lyman, David B., obit., ix, 608.
- Lyman lunacy case, ix, 676.
- Lyman, Samuel P., obit., i, 620.
- Lynch, Patrick, vi, 735, 739; viii, 64.
- Lynch, Patricio, obit., xi, 720.
- Lynch, Patrick W., sketch, vii, 491.
- Lynchburg, growth of, xii, 124.
- Lyndon, P. F., obit., iii, 641.
- Lynn, Mass., growth of, xi, 173.
- Lyons, illustration, iii, 346.
- Lyons, Rev. J. J., obit., ii, 584.
- Lyons, Richard Bickerton Pemell, Lord, sketch and portrait, xii, 450.
- Lyre-bird, illustration, ii, 52.

Lyttleton, Baron, sketch, i, 498.  
 Lytton, Lord, sketch, i, 406; Viceroy of India, i, 44, 402; attempt on the life of, iv, 494; v, 389; resignation of, v, 384.

Maantrasna murders, the, ix, 376; x, 451.  
 Mabery, C. F., experiments by, x, 578; xi, 535.  
 MacAdam's Fins, illustration, xi, 471.  
 McAllister, Julian, obit., xii, 598.  
 Macao, claim on, by China, v, 103; illustration, 103.  
 Macedonia, outrages in, ix, 764.  
 MacCabe, Cardinal, obit., x, 663.  
 McCance, observations, iii, 87.  
 McCandless, Wilson, obit., vii, 640.  
 McCarthy, Patrick, obit., ii, 584.  
 McClay, William B., obit., vii, 640.  
 McClellan, George B., sketch, ii, 492; 556; obit. and portrait, x, 553.  
 McClelland, Robert, sketch, v, 508.  
 McCloskey, John, Cardinal, sketch, ii, 493; obit. and steel plate portrait, x, 562.  
 McCloskey, John, obit., v, 594.  
 McCook, George W., obit., ii, 584.  
 McCormick, Cyrus H., obit., ix, 609.  
 McCormick Observatory, ix, 47.  
 McCoskrey, S. A., Bishop, deposed, iii, 704.  
 McCoun, W. T., obit., iii, 641.  
 McCrary, G. W., sketch, ii, 498.  
 McCullough, John E., obit., x, 651.  
 Macdonald, invention by, ii, 719.  
 Macdonald, A., obit., vi, 695.  
 Macdonald, J. A., v, 211; sketch and portrait, vii, 492.  
 McDonald, Joseph E., ix, 396.  
 Macdonald, J. M., obit., i, 620.  
 McDonald, William J., obit., iii, 641.  
 Macdonnell, D. J., trial, i, 672.  
 McDowell, Irvin, x, 557 *et seq.*; obit., x, 652.  
 McDowell, Katherine S., obit., ix, 609.  
 Macedo, Henrique de, xii, 683.  
 Macedo, M. B. de, obit., vi, 695.  
 Macedonia, x, 108, 109, 726, 727.  
 McElroy, John, ii, 584.  
 McElroy, Joseph, obit., i, 621.  
 McElroy, W. H., xi, 2.  
 Macfarlane, Robert, obit., viii, 591.  
 Macfarlane, S., explorations of, i, 330; ii, 335.  
 MacGahan, J. A., obit., iii, 658.  
 McGee, W. J., x, 404.  
 McGlynn, Rev. Dr., excommunication of, xii, 716, 717.  
 McGrath, H. P., obit., vi, 686.  
 McGraw, John, obit., ii, 584.

MacGregor, Sir Charles Metcalfe, obit., xii, 638.  
 MacGregor, discovery, ii, 325.  
 McHale, J., obit., vi, 695.  
 McIntosh, W. C., x, 47, 690.  
 McKennal, Rev. Alexander, xii, 152.  
 Mackenzie, D., xi, 374.  
 Mackenzie, Rev. J., in South Africa, ix, 112, 118; x, 86.  
 Mackenzie, R. Shelton, sketch, vi, 522.  
 McKay, Henry Kent, obit., xi, 689.  
 McKenney, Gerald, obit., xi, 689.  
 McKeon, J., obit., viii, 591.  
 Mackey, Consul Bedford, imprisoned, x, 104.  
 Mackonochie, Rev. A. H., viii, 6.  
 Maclay, Nicholas de M., xii, 647.  
 M'Lean, Sir D., obit., ii, 607.  
 Maclean, George McIntosh, obit., xi, 690.  
 McLean, James H., obit., xi, 690.  
 Maclean, John, obit., xi, 690.  
 McLean, William, x, 129.  
 McLenegan, S. B., x, 400.  
 McLin, S. B., i, 298; testimony of, iii, 718.  
 McLoughlin, Louise, ix, 249.  
 Macmahon, President, on cabinets, ii, 308, 310; on prolonging his tenure of office, 310; opposition to, 311-318; resignation of, iii, 338; iv, 388.  
 MacMaster, James D., obit., xi, 790.  
 McMullen, J., obit., viii, 591.  
 MacMunn, C. A., experiments by, ix, 458; x, 692.  
 McNeil, trial of, ix, 638.  
 McNeill, observations by, viii, 21.  
 Macomb, Capt. J. N., x, 401.  
 Macon, Ga., illustration, ii, 340.  
 McPherson, E. H., obit., xi, 690.  
 MacPherson, Sir Robert Taylor, obit., xi, 721.  
 McQuade, James, obit., x, 652.  
 McVickar, W. A., obit., ii, 584.  
 MacWhorter, A., obit., v, 594.  
 Macy, Josiah, Jr., obit., i, 621.  
 Macy, R. H., obit., ii, 584.  
 Madagascar, vii, 492; map, 493; viii, 505; explorations in, viii, 387; new tribes, *ibid.*; French in, ix, 458; the Hovas, x, 564; diplomatic negotiations with the French, 565; storming of Tarafat by Admiral Miot, 565; repulse of the French, 565; peace negotiations, 565; xi, 516; treaty of peace, xi, 517; secret convention, 518; fresh disputes, 518; xii, 452; French colonization, xi, 519; commerce, xii, 452.

- Madden, E. M., obit., x, 652.  
 Maddox, R. L., ix, 651.  
 Maddox, Samuel T., obit., i, 621.  
 Madge, the yacht, x, 790.  
 Madison, capitol at, illustration, i, 808.  
 Madisonville, Indian relics at, ix, 15.  
 Mädlar, Herr, xi, 585.  
 Madonna of Corano, the, x, 506.  
 Madou, J. B., obit., ii, 606.  
 Madras, new harbor at, iii, 297; breakwater, vi, 250; riots in, vii, 415.  
 Madrid, palace at, illustration, ii, 679; revolt in, xi, 808.  
 Madrig, Jean Nicholas, obit., xi, 721.  
 Maffei, Andrea, obit., x, 663.  
 Magdala, view near, i, 4.  
 Maggiora, Dr., experiments by, xii, 676.  
 Magne, Pierre, obit., iii, 658.  
 Magnesite, use of, in furnaces, x, 581.  
 Magnesium, carbonate, new, xi, 139.  
 Magnetic apparatus, illustration, vi, 405.  
 Magnetism. See Electricity.  
 Magnin, Joseph, sketch, iv, 886.  
 Magnus, Baron, v, 208.  
 Magoon, Elias Lyman, obit., xi, 690.  
 Magyars, the, v, 369, 370; demonstrations against, viii, 49.  
 Maharero, Chief, x, 137, 138.  
 Mahdi, El, sketch, viii, 507; vi, 444; vii, 255; viii, 298, 299; first reverse, 300; capture of El Obeid, *ibid.*; victory over Gen. Hicks, viii, 301; ix, 301, 297 *et seq.*; nicknamed "the bridegroom," 301; x, 310, 313, 315; sketch of, 316. See also Hicks, viii, 430.  
 Mahmoud, Sami Pasha, el Barubis, vi, 236.  
 Mahogany, xi, 423.  
 Mahrattas, the, ix, 345.  
 Maief, explorations of, iii, 359.  
 Maignau, Albert, x, 363.  
 Maillardet, invention by, x, 613.  
 Mail-matter, distribution, etc. See Postal Facilities, xii, 684-690.  
 Mairnena, district of, ix, 5; x, 48.  
 Maine, statistics, State officers, elections, legislative proceedings, etc., in each volume; views in, i, 474; ii, 500; statue of Gov. King, i, 475; abolition of capital punishment, ii, 500; election of Senator Blaine, ii, 501; tramp act, iii, 508; schools, 511; Penobscot Indians, iv, 576; vi, 524; operation of the liquor law, iv, 579, 580; xi, 520; election disputes, iv, 582-587; v, 486, 487, 488; constitutional amendments, v, 490; ix, 463; railroad taxation act, vi, 523; fish-culture, 525-526; railroad statistics, vii, 496; lumber industry, viii, 511.  
 Maipu, battery of, ix, 131.  
 Maison de France, x, 32.  
 Maitland, Capt., xi, 36.  
 Maître Ambrose opera, xii, 520.  
 Majlath von Szekhely, obit., viii, 601.  
 Major, John R., D. D., sketch, i, 501.  
 Makart, Hans, sketch and portrait, ix, 464; xii, 279.  
 Maklay, Dr. M., observations of, in Papua, ii, 385.  
 Makoffsky, Konstantin, xii, 279.  
 Maksut Ali Khan. See Alikhanoff.  
 Malaga, view of, ii, 700.  
 Malagasy race of Madagascar, the, x, 564, 565.  
 Malay Peninsula, troubles in, i, 404.  
 Malden, Mass., xi, 173.  
 Malden, Henry, sketch, i, 501.  
 Malet, Sir E., x, 120.  
 Malietoa, King, deposition of, xii, 731.  
 Malleable castings, experiments with, xii, 48.  
 Mallet, J. W., researches by, vi, 92, 93; xi, 535.  
 Malon ministry, the, ix, 78, 80.  
 Malow, Jules, obit., xi, 721.  
 Mälzel, invention by, x, 613.  
 Mamiani, Count, obit., x, 663.  
 Mammoth Cave, fish of, i, 440.  
 Manassas, Confederate evacuation of, x, 557.  
 Manchester, N. H., xi, 174.  
 Manchester Art Exhibition, xii, 278.  
 Manchester ship-canal, the, ix, 373, 376, 377.  
 Manchester-by-the-Sea, house at, xii, 366.  
 Mandalay, capture of, x, 115.  
 Manet, Edouard, obit., viii, 601.  
 Manetho, vii, 257.  
 Manganese, new compounds of, iii, 85; new mineral, vii, 87; bronza, vii, 529; viii, 525; ores in Ohili, xi, 151; xii, 115; estimation of, ix, 123.  
 Mangin projector, the, ix, 310; illustration, 309.  
 Manhès, P., inventions by, x, 576, 577.  
 Manilius, quoted, ix, 600.  
 Manitoba, ministerial crisis in, iv, 319; new route for merchandise of, iv, 321; growth of, iv, 321; land laws, v, 217; boundaries, vi, 216, 222; history, etc., viii, 511; ix, 465; x, 567; exemption law in, x, 567; provincial claims, 568; mounds in, xi, 23; Mennonites in, xi, 532; railway charters in, xii, 455; flax-culture in, xi, 523, 532.  
 Manitou, xii, 124.



Mankoroane, Chief, ix, 112; x, 85, 89.  
 Manly, M. E., sketch, vi, 527.  
 Mann, Dr. George, obit., i, 651.  
 Manners, Lord John, x, 450.  
 Manning, Amos R., sketch, v, 491.  
 Manning, Daniel, sketch and portrait, x, 757; obit., xii, 597.  
 Manning, Thomas Courtlandt, obit., xii, 597.  
 Mansfeld, Count, obit., vi, 696.  
 Mansfield, Edward D., sketch, v, 491.  
 Mansfield, W. R. See Sandhurst.  
 Manstein, G. von, obit., ii, 606.  
 Mantell, Dr., viii, 486, 487.  
 Mantuocci, P., explorations by, vi, 326; death of, vi, 327.  
 Manteuffel, Baron, obit., x, 664.  
 Manual training, in colleges, xii, 235; in schools, 235; schools of St. Louis, Chicago, Toledo, Baltimore, Philadelphia, Montclair, and Cleveland, 286, 287, 288.  
 Manucy, Bishop, death of, x, 718.  
 Manufactures of the United States, vii, 498; in foreign markets, ii, 126; iv, 187; v, 512; vi, 854, 857; of States, see under names of States.  
 Manufacturing industries, viii, 334.  
 Manuscripts, deciphering of Mexican, xii, 16  
 Maoris, the, difficulty with, iv, 57; decrease of, v, 87; vii, 45; peace with, viii, 87; ix, 60; x, 66; xi, 66.  
 Maracaybo, Lake, survey of, xii, 790.  
 Marathon tumulus, ix, 24.  
 Marble, large fields of, in California, xi, 129.  
 Marcano, experiments by, x, 154.  
 Marc-Dufraisse, obit., i, 638.  
 Marcère, Emile, sketch, ii, 320.  
 Marchand, Count, obit., i, 638.  
 Marche, A., explorations by, ii, 333, 334; xii, 313.  
 Marcke, Emile von, xi, 347.  
 Marcus Aurelius, dedicatory tablet of, ix, 22.  
 Maroy, Randolph Barnes, x, 401, 554; obit., xii, 597.  
 Margarine act, xii, 344.  
 Margarita Island captured, x, 776.  
 Margary, H. J., obit., i, 638.  
 Margary murder, the, i, 44, 108.  
 Maria, ex-Queen of Saxony, obit., ii, 606.  
 Maria, ex-Queen of Spain, obit., i, 638.  
 Maria, Grand-Duchess of Russia, obit., i, 638.  
 Maria Anna, Empress, obit., ix, 618.  
 Maria Christina, regent of Spain, x, 656; sketch, 738.  
 Marie Luise Alexandrine, Princess of Prussia, obit., ii, 606.

Mariette, Auguste, researches of, vii, 256, 260; ix, 19, 22; obit., vi, 696.  
 Marignac, discoveries by, iii, 87; iv, 137.  
 Marine Bank failure, ix, 329.  
 Mario, G., sketch, with portrait, viii, 514.  
 Maritime Canal Company, the, xii, 568.  
 Maritime Engineering, xii, 257; lumber raft abandoned at sea, 257.  
 Markevitch, B., obit., ix, 618.  
 Markham, A. H., excursion of, iv, 417.  
 Markham, C. R., quoted, vii, 682.  
 Marks, A. S., sketch, iii, 784.  
 Marmaduke, John Sappington, obit., xii, 598.  
 Marno, E., African journey of, iii, 362; obit., viii, 601.  
 Marquardt, L., experiments by, viii, 113.  
 Marquesas Islands, relics in, ix, 275.  
 Marr, Carl, picture by, xi, 346.  
 Marriage, laws on, in Austria, i, 57; with a step-daughter, i, 510; with a sister-in-law, iv, 454; v, 111, 411; kinship in, iv, 690; between whites and negroes, ii, 714; iv, 845; vii, 459; x, 369; Catholics and Protestants in Chili, iii, 96; x, 164; of unfrocked priests in France, iii, 348; polygamous, iii, 813, 814; civil, in Italy, iv, 526, 773; in Denmark, vi, 209; in Hungary, ix, 69; in India, xii, 383; international, x, 20, 91.  
 Marriott, W., xii, 439.  
 Mars, satellites of, ii, 43; iii, 35; ix, 49; ellipticity of, v, 33; canals of, xi, 54.  
 Marsegg, Herrman Mullner von, obit., xii, 634.  
 Marsh, C. W., experiments by, viii, 118.  
 Marsh, George P., sketch, vii, 504; on forests, viii, 356.  
 Marsh, O. C., observations by, vi, 304; viii, 437; x, 404.  
 Marsh, Sylvester, obit., ix, 609.  
 Marshall, Orasmus H., obit., ix, 610.  
 Marshall Islands, German protectorate over, x, 138, 415.  
 Marshals, U. S., proposed appropriation for compensation and expenses of, v, 152-167.  
 Marshes, drainage of, in Italy, i, 255.  
 Marshman, Newman R., invention by, x, 617.  
 Marston, John, obit., x, 653.  
 Martigny, G., death of, i, 659.  
 Martin, Benjamin N., obit., viii, 592.  
 Martin, C. H., xii, 312.  
 Martin, Henri, obit., viii, 601.  
 Martin, Joseph, journeys of, in Siberia, xii, 311.  
 Martin, J. B., ix, 45.  
 Martin, Konrad, obit., iv, 700.  
 Martin, Nicolas, obit., ii, 606.

- Martin des Pallières, obit., i, 638.
- Martineau, Harriet, sketch, i, 501; statue of, xi, 847.
- Martinho, A. S. C., vii, 61.
- Martinique, viii, 821; ix, 804; x, 788.
- Martins, experiments by, viii, 632.
- Martinucci, case of, vii, 724.
- Marvin, Enoch M., obit., ii, 584.
- Marvine, Archibald R., obit., i, 621.
- Marx, Karl, obit., viii, 602.
- Maryland, State officers, government, legislative proceedings, etc., in each volume; views in, i, 503, 505; ii, 479; arbitration of the North Carolina boundary, i, 502; establishment of Johns Hopkins University, 506; prison inspection, ii, 478; refusal of applications for admission to the bar, 481; election of Senator Broome, iii, 520; proposed canal to connect Baltimore with the ocean, 521; trial of judges of elections for disregard of U. S. marshals, 521; artificial propagation of the oyster, iv, 591; inauguration of Gov. W. T. Hamilton, v, 492; Senator Gorman elected, 492; anniversary of the founding of Baltimore, 494; coal-miners' strike, vii, 506; McDonough school of farming, 507; Johns Hopkins University, 508; Pratt Public Library, 509; gift of Mr. Wilson, 510; election of Governor McLane, viii, 516; claim of the State against the Chesapeake and Ohio Canal, xii, 456.
- Masai, the tribe of, ix, 847.
- Mason, discovery by, iii, 362.
- Mason, Lowell, ix, 548.
- Mason, Sir J., obit., vi, 696.
- Mason, Sergeant, trial of, vi, 848.
- Masonry, emblems of, in the obelisk, ix, 595, 600.
- Maspero, Prof., discoveries by, vi, 21; vii, 260; ix, 21, 22; x, 82; report, xi, 29-32; xii, 18.
- Mass, Joseph, obit., xi, 720.
- Massachusetts, statistics, legislative proceedings, elections, State officers, etc., in each volume; views in, i, 510, 512, 518; ii, 488, 485, 486, 487, 490, 491; iii, 524, 526; bank legislation, i, 508; family-bank scheme of Elizur Wright, 509; eastern railroad relief, 509; election acts, 509; constitutional amendment relating to Harvard College instructors, proposed, 510; veto of act confirming a marriage of stepfather and daughter, 510; election of Governor Rice, 514; prohibitory law defeated, ii, 482; reform-school and hospital investigation, 482, 488; coroner system abolished, 483; opening of reformatory prison for women, 485; State charities report, 486; act for new board, iv, 596; meaning of "money-bill," iii, 523; Hoosac tunnel, 524; vi, 537; xi, 529; child-labor bill, iii, 524; proposed woman suffrage amendment, 525; statistics of color-blindness, 526; new charities, 528; vi, 537; election of Governor Talbot, iii, 537; constitutional amendment, iv, 597; worship in public institutions, 597; taxation, 597, 598; discussion of the place of women in public affairs, 598, 599; civil-damage bill, 599; contract-labor system, 600; v, 495; success of societies for prevention of cruelty to animals, iv, 601; railroad commissioners, 601; constant-circuit rail system, 602; election of Governor Long, 605; sketch, v, 501; re-election, vi, 541; 250th anniversary of the founding of Boston, v, 501; divorce laws, vi, 535; viii, 519; screen-law, the, vi, 539; decision against admitting a woman to practice at the bar, 539; fish-culture, 540; railroad legislation, vii, 511; election of Governor Butler, 519; his recommendations on woman-suffrage and education, 516, 517; Tewksbury almshouse investigation, viii, 517; women in office, 519; election of Governor Robinson, ix, 471; re-election, x, 573; civil-service system, x, 572; xi, 529; Normal Art School, xi, 528; Sunday law, xii, 458; proposed division of the town of Beverly, 459; election of Governor Ames, 468.
- Massari, Lieut., explorations by, vi, 526.
- Massowah, i, 8 *et seq.*; Italians at, ix, 296; x, 312, 505; xi, 1; xii, 1.
- Mastiff, the English, ix, 260.
- Masupha, Chief, x, 54.
- Matabeli-land described, iv, 408.
- Matagong Island seized by France, iv, 16.
- Matamoraa, cathedral of, illustration, ii, 512.
- Matanzas, illustration, ii, 701.
- Maté, exportation of, xii, 72.
- Matière-noire, experiments with, vii, 98.
- Matsell, George W., obit., ii, 584.
- Matthews, H. M., i, 803.
- Matthews, Julia, obit., i, 621.
- Matthews, Mason R., invention by, x, 617.
- Matthews, Stanley, trials before, x, 268 *et seq.*
- Matto Grosso, the, x, 104.
- Maturin, Edward S., sketch, vi, 541.
- Matzerath, J., obit., i, 639.
- Mauch Chunk, Penn., illustration, ii, 636.

Maudsley, A. P., xi, 24.  
 Maumené, discovery by, iii, 90.  
 Mauna Loa, ix, 889.  
 Maurice, Jules, obit., i, 639.  
 Maxim, H. S., inventions by, v, 239; vi, 259; vii, 275; his electric lamp, ix, 805.  
 Maxwell, Lady, obit., ii, 606.  
 Maxwell, J. C., theory of electricity of, vi, 239.  
 May, Sir Thomas Erskine, obit., xi, 721.  
 Maya, hieroglyphic inscriptions, xi, 24.  
 Mayer, Joseph, obit., xi, 721.  
 Mayer, J. R. von, obit., iii, 658.  
 Mayer, L., experiments by, v, 87.  
 Mayhew, Henry, obit., xii, 684.  
 May Laws, the, amended, xii, 825.  
 Maynard, Horace, obit., vii, 640.  
 Mayo, Lord, x, 2.  
 Mazatlan, illustration, i, 547.  
 Mazzanovich, John, obit., xi, 691.  
 Mead, Larkin G., x, 861.  
 Mead, William C., obit., iv, 694.  
 Meade, George G., x, 428; statue of, xii, 280.  
 Meaux, Viscount de, ii, 819.  
 Mechanic Arts, School of, xii, 283.  
 Mechanical Engineering, progress of, vi, 541.  
 Mechanical Improvements and Inventions, i, 515; ii, 494.  
 Mechi, J. J., obit., v, 601.  
 Mecklenburg Declaration Celebration, vii, 684.  
 Medal of Honor, the United States, xii, 468; illustration, 329; the naval, 473.  
 Medical Diplomas, unlawful sale of, v, 622.  
 Medical Science and Practice: its Progress, vi, 549.  
 Medicine, recent works on. See Literature, in every volume.  
 Medina, territory of, xii, 415.  
 Medjidie Order, the, ix, 279.  
 Meendeleef, M., xi, 540.  
 Megaphone, the, iii, 587.  
 Meheddin Buhran Uddin Effendi, obit., i, 639.  
 Mehemet Ali Pasha, sketch, ii, 499; obit., iii, 659.  
 Mehemet Ali Square, illustration, i, 245.  
 Meiggs, Henry, obit., ii, 585; bridge built by, viii, 317.  
 Meigs, Col., survey by, viii, 309.  
 Meinicke, K. E., sketch, i, 521.  
 Meissner, experiments by, iv, 86.  
 Meissoner, A., x, 664.  
 Meissonier, J. L. E., collected works of, x, 359; the vidette, xi, 847.  
 Mojillones, territory of, x, 400.  
 Mékarski, invention by, i, 516.

Melbourne, Australia, exposition at, v, 39; post-office at, illustration, iv, 57.  
 Melchisedek, Bishop, ix, 764.  
 Meldola, B., xii, 670.  
 Melgund, Lord, x, 126.  
 Melikoff, Gen. See Loris-Melikoff.  
 Melin, Joseph, x, 368.  
 Melines, F. J., viii, 367.  
 Melinger, Gaston, xii, 276.  
 Melinite, xi, 855.  
 Melkarth, temple at, ix, 28.  
 Melland, B., experiments by, x, 695.  
 Mellin, Henrik, sketch, i, 521.  
 Melliash, Sir G., obit., ii, 606.  
 Melville, George W., portrait, vii, 334.  
 Melville, H. D., Viscount, obit., i, 639.  
 Memnon, statue of, x, 607.  
 Memphis, xi, 174; illustration, ii, 711; debt of, iv, 829; vi, 832; unsanitary condition of, iv, 830; yellow fever in, iv, 359, 829. See also Fever, Yellow.  
 Memorial Day, xii, 475.  
 Mendana, ix, 275.  
 Mendeleeff, invention by, iii, 545; classification of elements by, v, 87; law of atomic weights discovered by, vi, 40; ix, 118; xii, 100.  
 Mendelssohn Centenary, the, xi, 459.  
 Mendenhall, T. C., xi, 46, 47.  
 Menelek, King of Shoa, ii, 2; iv, 2; viii, 386; xi, 1; xii, 2.  
 Menendez, Gen., x, 467.  
 Menephthah, King, ix, 20; x, 86.  
 Menes, vii, 260.  
 Menier, invention by, vi, 255.  
 Mennonites, iii, 50; xi, 531.  
 Mentana monument unveiled, v, 410.  
 Menthol, ix, 272; influence of, xii, 673.  
 Mercadier, experiments by, vi, 787.  
 Mercedes, Maria de las, Queen of Spain, obit., iii, 658; x, 656.  
 Merchant Marine of the United States, vii, 520; ix, 198.  
 Mercie, Antonin, xi, 348; xii, 276.  
 Mercur, Ulysses, sketch and portrait, xii, 478.  
 Mercury, mass and density of, ii, 43; transit of, iii, 85; brightness, *ibid.*; spots, viii, 20.  
 Meredith, Joseph H., obit., xi, 691.  
 Meridian, common prime, vii, 150; ix, 54.  
 Meriten, A. C., experiments by, xi, 534.  
 Méritens, invention by, vii, 265.  
 Merodach, ix, 18, 19.  
 Merriam, George, obit., v, 594.  
 Merrick, Richard T., obit., x, 653.  
 Merrill, S., explorations of, i, 328; ii, 324.

- Merriman, C. S., invention by, iii, 752, 766.
- Merry, Francisco, sketch, i, 521.
- Mersey Tunnel, viii, 811; x, 831.
- Merson, Luc Olivier, x, 862.
- Merv, decay of, i, 7; importance of, iv, 775; x, 7; Russian annexation, viii, 706; ix, 6; x, 2; chief of, x, 19.
- Merv Turkomans, the, submission of, to Russia, x, 4.
- Meshed, sacred city of, ix, 648; x, 14.
- Meskovich, Gen., x, 781.
- Messiah, prediction of the Mohammedan, vi, 444; vii, 804; viii, 507. See also Mahdi, El.
- Messner, Joseph, obit., xi, 722.
- Metallic sodium, new process for, xii, 107.
- Metallurgy, vii, 528; viii, 520; ix, 471; x, 574; xi, 533; xii, 479.
- Metals, i, 522; ii, 499; new, ii, 90, 502; vi, 98; detection of alloys, iv, 502; new compound, v, 98; annealing, vi, 542; melting-points, ii, 501; viii, 91; production of the precious, ii, 240; specific gravity, ix, 120; electric conductivity of, xi, 538; market in 1884, ix, 479.
- Metemnah, taken by Gordon, ix, 301.
- Meteorite Showers, vii, 89; x, 56.
- Meteorograph, the, vi, 258.
- Meteorology, international observations, i, 525; iii, 537; viii, 525; stations for observations, iii, 538; vii, 335; map showing annual rainfall, viii, 527; x, 581; xi, 539; congress and stations, xi, 545-547; xii, 487; popular errors in, xii, 487.
- Meteors. See Astronomical Progress, in every volume.
- Methodist Ecumenical Congress, vi, 557.
- Methodists, statistics, meetings of conferences, boards, societies, and committees, missions, etc., in each volume; proposed union with Colored Methodist Church, i, 538; question of lay representation in Wesleyan conference, 535; embarrassment of publishing-house of M. E. Church South, iii, 547; new denomination of, iv, 608; ecumenical council, v, 509; vi, 557; lay representation in Canadian conference, vii, 538; union of Canadian, ix, 268; question of extension of ministerial term, ix, 483; doctrine concerning bishops, 483; secession in Tonga from Wesleyans, x, 588; resolution on divorce, 483; xi, 549; endowment of King's College University at Toronto, 549.
- Methyl alcohol, etc., v, 89.
- Metis, rebellion of the, in Canada, ix, 124; x, 711.
- Metronome, electric, with illustration, xi, 740.
- Metropolitan Bank, ix, 329.
- Metropolitan Museum. See under Fine Arts.
- Metz, illustration, ii, 852.
- Meuse, fortification of the valley of the, xii, 64.
- Mexican manuscript, deciphered, xii, 16.
- Mexican War, the, see Santa Anna, i, 715; bill for pensions to veterans of, debated, viii, 248.
- Mexico, City of, illustration, i, 548, 545; incident of its capture, x, 421, 538.
- Mexico, statistics, government, etc., in each volume; views in, i, 543, 545, 547; ii, 511, 512, 514; iii, 554; silver trade, i, 542; industrial development needed, 542, 543; the revolution, 544; Escobedo's expedition to suppress disturbances in Michoacan, 545; revolutionary plan of Tuxtepec—constitution of 1857, 545; Diaz head of provisional government, 545; uprising in Oajaca, 546; re-election of Lerdo, 546; sketch of Diaz, 547; the only railroad, ii, 511; end of military operations, 512; suppression of raids, 513; manufacturers' association, iii, 553; need of means of communication, 555; United States recognition of Diaz government, 555; condition of the republic, 555; new Episcopal church, iv, 611; deputation to promote commerce, 614; Tehuantepec ship-railway, 614; vi, 569; election of Gonzalez, v, 510; new steamship lines, vi, 569; submarine cable, 569; telegraphs, 569; new railways, 569; xii, 502; geography, vii, 540; relations with United States, viii, 535; discovery of tin, 537; of gold and silver, x, 591; mines of Sonora, viii, 537; resources of Michoacan, 537; tunneling a volcano, 537; petroleum, 537; grape and banana culture, 537; the toloachi-plant, 538; immense estates, 538; American goods in, ix, 492; orobilla-weed, zapote-wood, 493; need of paper-mills, 493; pearl-fisheries, 493; mission work, 494; lottery of divine providence and others, x, 589; reaction in favor of ecclesiasticism, 589; opposition to Mormons, 589; Indian hostilities, 590; natural phenomena, 590; xi, 557; interference with Central America, x, 465, 590; riot of students, 590; unemployed capital and taxes, xi, 554; cotton and silk, 555; volcanic eruptions, 557; sulphur-mines, 556; steamer lines, xii, 502; objections to Jewish colonists, 503; Protestantism in, 503; immigration and American enterprise, 503; relations with Guatemala, 503; drainage of the

valley, 504; iridescent stone-ware, 504; earthquakes, 504; the French in, x, 481; attempt to send Gen. Grant to, 482; pyramid discovered, viii, 536; the Aztec calendar-stone, viii, 536; Aztec remains found in, ix, 17.

Meydoum, pyramid of, illustration, vii, 262.

Meyer, H., observations by, vi, 308.

Meyer, Johann Georg, obit., xi, 722.

Meyer, L., table by, vi, 41; observations, ix, 18.

Meyer, Lothar, x, 148; xii, 100.

Meyer, Lucas, x, 186, 187.

Meyer, M. W., researches, vii, 88.

Meyer, V., observations by, viii, 111; invention by, viii, 465; ix, 119, 120; xii, 100, 104.

Meyer, W., observations, viii, 28.

Meyrowitz, Alexander, obit., xii, 598.

Mezzacapo, L., obit., x, 664.

Miall, E., obit., vi, 696.

Mica powder, x, 345.

Michael, Grand Duke, sketch, ii, 514.

Michaelovsk-Askrad railroad, x, 7.

Michel, Francisque Xavier, obit., xii, 684.

Michel, Louise, trial of, viii, 869; xii, 296.

Michelis, Friedrich, obit., xi, 722.

Michell, Dr., obit., ii, 607.

Michel-Levy A., experiments by, x, 156.

Michelson, A. A., ix, 49.

Michigan, statistics, government, elections, legislative proceedings, industries, etc., in each volume; views in, i, 552; ii, 519, 520; State reform school, i, 549; election of Gov. Croswell, 538; re-election, iii, 562; fish-culture, ii, 519; State public school, iii, 557; communication with the upper peninsula, 559; proposed constitutional amendments, iv, 616; vi, 574; vii, 557; ix, 495; election of Senator Chandler, 616; election of Gov. Jerome, v, 528; re-election, vii, 557; revision of laws, vi, 574-576; railroad lands, 576; public lands, 579; University report, 582; election of Senator Conger, 576; tax and assessment act, vii, 547; charitable institutions, 558; election of Senator Palmer, viii, 540; State census, ix, 494; election of Gov. Alger, 495; population of cities, x, 598; election of Gov. Luce, xi, 560; election of Senator Stockbridge, xii, 504; salt manufacture, 506; local-option law in operation, 506; fires, vi, 586.

Microocci, ix, 496.

Micrometer-telescope, i, 554.

Micro-organisms, ix, 495; x, 149, 160.

Micro-polariscope, ix, 516.

Microphone, the, iii, 562.

Microscopes, illustrations, ix, 449, 452.

Microscopy, ix, 499; in botany, ix, 90; in chemical analysis, x, 155.

Microtasimeter, the, iii, 563; illustration, 563.

Middleton, Gen., x, 125 *et seq.*; knighted, 129.

Midhat Pasha, sketch, i, 774; trial of, vi, 841; obit., ix, 618.

Midian, the land of, theory concerning, iii, 361.

Mieroslavski, L., obit., iii, 659.

Miers, J., obit., iv, 700.

Mignet, F., obit., ix, 619.

Mignonette case, ix, 522.

Mihilinovich, Col., x, 729.

Miklucho-Maclay, journey in New Guinea, iii, 364.

Milan IV of Serbia, sketch of, ii, 520; vii, 738; x, 109, 112, 727.

Miles, Manly, experiments by, x, 690.

Miles, Marcus H., obit., ii, 585.

Milford Haven, docks, vii, 279.

Millne, xi, 140.

Military defenses, of Denmark, v, 207; of Austria, vii, 51.

Military forces of China, v, 100. See Armies.

Military interference at elections, bill on, iv, 885.

Militia, bill on, in Georgia, iv, 421; in Illinois, report, iv, 485; v, 880; improvements in New Jersey, iv, 668; needed in Nebraska, v, 552; laws for, in Canada, viii, 83; State laws, xi, 471.

Milk, impure, ix, 2.

Mill, Mr., observations by, xi, 540.

Millais, Sir John, x, 859, 864; xi, 845; xii, 277.

Miller, Emmanuel, obit., xi, 722.

Miller, George J., obit., i, 639.

Miller, John, obit., xi, 691.

Miller, J. Warren, obit., i, 621.

Miller, Robert, obit., i, 639.

Miller, Warner, sketch, vi, 648.

Miller, William, preaching of, xi, 2.

Miller, William R., i, 39, 40; iv, 38.

Millet, Frank D., xi, 846.

Millet, J. F., xi, 847.

Milman, Robert, sketch, i, 554.

Milmore, Joseph, obit., xi, 691.

Milmore, Martin, obit., viii, 592.

Milow, Pierre Solidor, obit., xii, 599.

Mills, Clark, obit., viii, 592.

Mills, J. E., xi, 136.

Mills, Robert, ix, 798.

Mills, T. W., investigations by, viii, 686.

Mills, Zophar, obit., xii, 598.

Miltzin, Mount, vi, 827.

- Milwaukee, view of, i, 807; growth of, xi, 174.
- Min River, fighting on the, ix, 189, 141; illustrations, 189, 141.
- Minchin, J. B., survey in South America by, ii, 386.
- Mindoon, xi, 114.
- Mind-reading, phenomena of, xii, 506.
- Mineral exhibition in Peru, xi, 752.
- Minerals, in Tennessee, i, 742; new, vi, 98, 401; x, 153; xi, 189; in Florida, xii, 287; obtained artificially, x, 156.
- Mineral waters, x, 598.
- Miners, convention of, vii, 77.
- Mines, of Mexico, i, 542; v, 18; viii, 537; side-lines of, iii, 112; v, 119; draining of, iii, 280; Sutro Tunnel, iii, 288; in Peru, iii, 291, 688; in Arabia, iii, 361; gold, in Georgia, iii, 371; iv, 428; *débris* from, iv, 119; v, 71, 73; vi, 78; vii, 75; of Colombia, iv, 149; of Nevada, iv, 658; in Arkansas, vi, 88; in Alabama, vi, 8; of Colorado, vi, 118; viii, 143; xii, 142; new, v, 119; coal, in Kentucky, v, 425; decreased value of Nevada, vi, 628; laws on claims to, vi, 628; United States, vi, 853, 856; iron, in Minnesota, vii, 560; in Tennessee, vii, 789; in South Carolina, vi, 814; of Chili, viii, 124; of Honduras, viii, 432; of Montana, viii, 547; xii, 519; tin, in Dakota, viii, 523; xii, 219; quicksilver, of Siena, viii, 523; gold, of Russia, viii, 700; Chinese superstition concerning, vii, 101; Bureau of, in California, v, 71; inspector of, in Indiana, iv, 501; in Bolivia, xii, 69; in Idaho, xii, 273; nickel, in New Caledonia, xii, 485; antimony, in Portugal, xii, 485; ruby, in Burmah, xii, 84; salt, in New York, xii, 725; laws of, in Australia, ix, 58.
- Minghetti, Mario, xi, 453; obit., xi, 722.
- Mining, Poetsch method of, xi, 820.
- Minneapolis, Minn., growth of, xi, 175; its mills, vi, 588.
- Minnesota, statistics, State officers, industries, legislative proceedings, elections, etc., in each volume; views in, ii, 522, 524; act allowing women to vote at school elections, i, 555; limited divorce act, 556; constitutional amendments, 557; vi, 595; viii, 542; xi, 564; railroad bonds, 558; ii, 521; iii, 564; v, 524; their history, vi, 590; sketch of Governor Pillsbury, i, 558; his re-election, iv, 632; grass-hopper plague, i, 558; proposed amendment, ii, 525; vi, 595; re-election of Senator Windom, ii, 526; re-election, vi, 592; tax-law, iii, 564; school text-books, 565; office of Public Examiner created, 565; his report, iv, 624; sugar-cane industry, iii, 568; commercial convention, 569; seven per cent. the legal rate of interest, iv, 623; inspection of wheat, 623; swamp-lands, 625; vi, 596; homestead laws, iv, 627; analysis of waters, 628; effect of severe cold, 628; mildness of climate in the extreme northwest, 628; second centenary of the discovery of the Falls of St. Anthony, v, 527; forests, vi, 592; election of Governor Hubbard, 595; re-election, viii, 543; iron-ore in the Vermilion Lake region, vii, 560; prohibitory amendment rejected, viii, 542; cyclone at Rochester, viii, 543; fish-culture, ix, 527; gold discoveries, 527; railroad commission, x, 601; repeal, xii, 510; census, 602; election of Governor McGill, xi, 563; Senator C. K. Davis elected, xii, 510; convict-labor, 510; garnishment law, 511; high license, 512; iron-mines, 512.
- Minor Planets. See *Astronomical Progress*, in every volume.
- Mint, United States, statistics of, vii, 484.
- Minton tiles, ix, 248.
- Minzaing, Prince, xii, 81; campaign against, 82.
- Miot, Admiral, x, 565.
- Mirage, xi, 565; illustrations, 566, 568, 569.
- Mirsky, Leon, iv, 777.
- Miryachit, ix, 554.
- Mirza Ataula Khan, x, 12.
- Missionaries, civil relations of, vi, 566, 768; case of Rev. G. Brown, *ibid.*; starved to death, viii, 695; in the Soudan, 695; in China, x, 169; massacre of French, in Tonquin, x, 31; expelled from the Caroline Islands, xii, 741; massacre of, in Egypt, xi, 312; doctrinal tests for, xii, 148.
- Missions, Foreign, i, 559; in Denmark, iv, 312. See under titles of Churches.
- Mississippi, statistics, State officers, legislative proceedings, elections, etc., in each volume; view in, i, 562; proposed impeachment of Governor Ames, and his resignation, i, 561; constitutional amendments, i, 561; ii, 527; iii, 571; iv, 637; improvement in finances, i, 562; election of Governor Stone, ii, 527; murder of J. W. Gully, and mob attack on Judge Chisolm, 528; organization for suppression of lawlessness, 528; free-school system, iii, 569; xi, 571; health precautions, iii, 570; cause of disturbances in the southwest, 570; Confederate archives, 571; Vicksburg Landing threatened by sand-bars, 571;

railroads, 572; v, 527; x, 603; convention of fruit-growers and railroad men, iii, 573; natural features of the State, 574; prevalence of yellow fever, 575; need of a constitutional convention, iv, 632; v, 528; cotton-industry, iv, 638; negro-exodus, 634; xi, 571; protection from inundation, iv, 635; insurance laws, 636; acts regarding rights of women, 636; the faculty of the University on spelling reform, 637; invention for converting seed-cotton into yarn, 638; revised code, v, 527; census returns, 529; vi, 599; public lands, vi, 597; xii, 514; election of Governor Lowry, vi, 600; re-election, x, 604; education, vii, 561; ix, 529; xii, 514; manufactures, vii, 563; viii, 545; re-election of Senator Lamar, vii, 564; disputed congressional election, 564; re-election of Senators George and Walthall, xi, 570; local-option act, 570; levees, xii, 514.

Mississippi River, celebration of La Salle's discovery, vii, 486; source of, x, 399.

Mississippi River Improvement, i, 634; ii, 279; iii, 502; iv, 344, 635; v, 530; vi, 600, 610; deepening of the mouth of, xii, 229.

Missouri, statistics, State government, legislative proceedings, elections, etc., in each volume; view in, i, 567; election of Governor Phelps, i, 567; bonds declared void, 568; census, ii, 528; strike, 530; alleged irregularities in State Treasurer's office, iii, 575; iv, 641; v, 538; proposed constitutional amendment, iii, 579; iv, 639, 643; viii, 546; x, 604; xi, 576; railroads, iii, 579; rat-bounty law, iv, 639; bill to establish the whipping-post, 639; tiff, or baryta, used for paint, 639; inadequacy of State revenues, 640; immigration bureau, 641; v, 539; insurance law, iv, 642; fish-bill, 642; temperance movement, 642; ix, 532; defaulting counties, cities, and towns, iv, 643; Cottey-tax law, 644; liability for railroad subsidy bonds, v, 540; election of Governor Crittenden, 541; improvement of rivers, vi, 610; local indebtedness, vii, 564; State claims, 565; notorious band of robbers, 567; election of Governor Marmaduke, ix, 532; re-election of Senator Vest, x, 604; high-license, xi, 573; re-election of Senator Cockrell, xii, 515; the Bald-Knobbers, 516; local option, 516.

Missouri River, convention on improvement of, vi, 610.

Mistassini Lake, ix, 349, 350; x, 399.

Misti Arequipa, volcano of, illustration, i, 661.

Mitchell, Alexander, obit., xii, 599.

Mitchell, C. W., x, 365.

Mitchell, S. Weir, xii, 679.

Mitchell, Sir W., obit., iii, 659.

Mitchell, William, obit., xi, 692.

Mitchelstown, riot at, xii, 341.

Mizon, exploration of, vii, 836.

Mlongo Mlako, King, portrait of, ix, 170.

Moab, survey of, ix, 27.

Moberly, Dr., Bishop of Salisbury, death of, x, 21.

Mobile, Ala., charter repealed, iv, 20; debt of, v, 12; in the war of the Rebellion, x, 431.

Möbius, Prof., observations of, vi, 712, 714.

Mobs, crimes by, in Kentucky, iii, 473; in Louisiana, iii, 501; in Mississippi, iii, 570.

Modigliani, E., explorations of, xi, 382.

Modulator, illustration, ix, 549.

Moeller, Louis, x, 361.

Moewe, Wilhelm, obit., xi, 722.

Moffat, Robert, obit., viii, 602.

Mohammed Sultan Pasha, obit., ix, 619.

Mohammed Taha, viii, 299.

Mohammed Tewfik, proclaimed Khedive, iv, 333; sketch, 335; vii, 233.

Mohammedanism, iii, 581; iv, 647; v, 541; reported danger to, ii, 5; institutions of, x, 316. See also Islam, vi, 440.

Mohammedans, races of, in Turkey, i, 571; supposed movement to excite discontent among, v, 689; excitement of, in Turkey, vii, 304; treatment of, in China, x, 174.

Mohl, Julius von, sketch, i, 568.

Mohr, Eduard, explorations of, i, 331; death of, ii, 330.

Moigno, Abbé, obit., ix, 619.

Moissan, H., experiments by, xii, 107.

Moknaweoweo, ix, 389.

Moleva, E., researches of, viii, 536.

Molesworth, Sir W. N., obit., ii, 607.

Molière, Dr., ix, 747.

Molino del Rey, battle of, x, 421.

Molisch, Dr. Hans, xii, 110.

Mollenda, experiments, viii, 112.

Mollendorf, Herr, x, 174, 266.

Möller, Axel, medal to, vi, 40.

Moltke, Marshal, on war, vii, 716.

Momotombo, volcano of, eruption, xi, 653.

Monahan, J. H., obit., iii, 659.

Monal, Mount, ix, 544.

Monastery, first, in Scotland since the Reformation, i, 706.

Monastic Association Bill, in Austria, i, 57.

Monastic Order, in the Anglican Church, ii, 22.

- Moncasi, Juan Oliva y, iv, 822.  
 Moncrieff, Scott, x, 807, 819.  
 Monell, C. L., obit., i, 621.  
 Monetary Congress, International, iii, 814; conferences, vi, 60.  
 Monetary Union, Latin, x, 379.  
 Monetite, vii, 88.  
 Money of Yap Islands, the, x, 139.  
 Money-Bills, definition of, iii, 528.  
 Money-Market, the. See Finances and Financial Review.  
 Money-Orders, xii, 687.  
 Mongolia, exploration in, xi, 877.  
 Monite, vii, 88.  
 Monmouth Monument, x, 862.  
 Monnier, H., obit., ii, 607.  
 Monrad, Ditlev Gothard, obit., xii, 634.  
 Monro, H. A. J., obit., x, 665.  
 Monroe Doctrine, vii, 818; x, 481, 486. See also Panama Canal; in Africa, a, ix, 368.  
 Montague, Henry J., obit., iii, 641.  
 Montana, statistics, etc., ii, 531; viii, 547; ix, 533; x, 604; xi, 576; xii, 517; Mormons in, viii, 548; Indians, viii, 548; ix, 538; xi, 577; constitutional convention, ix, 534; tax-exemption, 536; land-surveys, xi, 577; drought, 576; gag-laws, xii, 517.  
 Montano, Dr., explorations by, vi, 330.  
 Mont Cenis railway, illustration, i, 422.  
 Mont de Piété, proposal concerning, ix, 344.  
 Montefiore, Sir Moses Haim, obit. and portrait, x, 606.  
 Montenegro, ii, 532; iii, 536; iv, 468; v, 542; viii, 548; revolts in, viii, 549; map, i, 754; articles on, in the Berlin Treaty, iii, 257; ix, 536; forts built in, ix, 537; frontier of, 764; boundary, xii, 774.  
 Monterey, battle of, x, 421.  
 Montero, Gen., vi, 738; viii, 64.  
 Montevideo Breakwater, x, 772.  
 Montgomery, capitol at, illustration, ii, 12.  
 Montgomery, Sir H. C., obit., iii, 659.  
 Montreal, carnival and ice-palace at, ix, 676; growth of, xii, 124; art exhibition at, 280; illustrations, iii, 248; xii, 131.  
 Montsiaoa, ix, 112, 113, 114; x, 85, 87.  
 Montizambert, Col., x, 125 *et seq.*  
 Moody, Granville, obit., xii, 599.  
 Moon, the crater Plato, viii, 21; diameter of, viii, 21; heat of, xi, 55; recent observation and study of, 578; illustrations, 579, 581, 584, 586, 587, 588; influence of, on weather, xii, 487.  
 Moore, Bartholomew F., obit., iii, 641.  
 Moore, George, obit., i, 639.  
 Moore, Joseph G., obit., i, 621.  
 Moore, T., invention by, vi, 95.  
 Moore, Tredwell, obit., i, 621.  
 Moore-Greenhow Case, the, x, 272.  
 Mora, M., ix, 246.  
 Moraine, terminal, of the second glacial epoch, x, 404.  
 Moran, Archbishop, x, 455.  
 Moran, Benjamin, obit., xi, 692.  
 Moran, Percy, xi, 346.  
 Moravia, Socialist riot in, x, 72.  
 Moraviana, i, 569; ii, 582; iii, 587; iv, 649; vi, 611; ix, 587.  
 Moreno, in Patagonia, ii, 335.  
 Moreno, J. I., obit., ix, 620.  
 Moresby, Sir F., obit., ii, 607.  
 Morey Letter, the, x, 576.  
 Morgan, Campbell de, obit., i, 639.  
 Morgan, D. H., statue of, vi, 815.  
 Morgan, Edwin D., sketch, viii, 552.  
 Morgan, Lewis H., sketch, vi, 613.  
 Morgan, Mary J., art collection of, xi, 847.  
 Moriarty, Bishop D., obit., ii, 607.  
 Moriarty, Dr., obit., xii, 718.  
 Morier, D., obit., ii, 607.  
 Morley, John, ix, 375; ix, 399.  
 Morley, E. W., xii, 488.  
 Morley, Samuel, obit., x, 723.  
 Morley, Thomas, obit., xii, 599.  
 Mormons, the, emigration of, iv, 337; President Hayes on, v, 642; missions of, vi, 859; monogamic, vi, 860; viii, 548; in Mexico, x, 590; in Arizona, ix, 41; x, 42, 43; in Idaho, ix, 400; xii, 373. See Polygamy.  
 Morocco, i, 569; v, 545; persecution of Jews in, 546; trade of, viii, 386; ix, 339.  
 Morocco, city of, illustration, i, 570.  
 Moroko, Samuel, Chief, ix, 115; x, 84.  
 Morot, Aimé, x, 363.  
 Morphine, lactate of, xi, 291.  
 Morphy, Paul, obit., ix, 610.  
 Morrill, Anson, P., obit., xii, 599.  
 Morrill, Lot M., sketches, i, 571; viii, 553.  
 Morris, Charles D., obit., xi, 692.  
 Morris, J., experiments, viii, 524.  
 Morris, Philip R., x, 365.  
 Morris, William, designs of, viii, 616.  
 Morrison, John I., obit., vii, 640.  
 Morrison, M. J., observations by, xi, 540.  
 Morrison, Pitcairn, obit., xii, 600.  
 Morrison, Robert Francis, obit., xii, 600.  
 Morrison, William R., tariff bill of, ix, 203.  
 Morrissey, John, obit., iii, 641.



Morse, Charles Walker, obit., xii, 600.  
 Morse, E. S., discovery by, vi, 458.  
 Morse, Judge, opinion by, x, 325.  
 Morse, Justinian, invention by, x, 614, 615.  
 Morse, Nathan B., obit., xi, 692.  
 Mortara, Edgar, abduction of, x, 606.  
 Morton, Prof., observations by, iii, 34.  
 Morton, Oliver P., sketch, ii, 533.  
 Mosaics, Athenian, xi, 34.  
 Moscow, illustrations, ii, 687.  
 Mosenthal, S. H., obit., ii, 607.  
 Moser, H., xi, 376.  
 Moser, James, experiments by, vi, 257.  
 Moses, monuments of the time of, vii, 258.  
 Moses, Chief-Justice, obit., ii, 585.  
 Moshetto, Chief, i, 89.  
 Mosler, Henry, prize to, x, 367.  
 Mosques, illustrations of; of Mehemet Ali, i, 247; ruined, 247; grand, of Ispahan, 660.  
 Moss, Lemuel, observations by, iv, 53.  
 Mosso, Dr., experiments by, xii, 676.  
 Motors, experiments in, i, 515, 516.  
 Mott, A. J., observations by, viii, 26.  
 Mott, H. A., experiments by, iii, 86; vii, 663.  
 Mott, Lucretia, sketch, v, 547.  
 Motte, Henry Paul, xi, 343.  
 Motte, Janvier de la, v, 285.  
 Mouchot, solar boiler of, iii, 722; experiments by, vi, 251.  
 Mould, Jacob Wray, obit., xi, 692.  
 Moule, Rev. Mr., ix, 722.  
 Mound-builders, funeral rites of certain, xii, 16.  
 Mound of the statue, the, x, 35.  
 Mounds, exploration of. See Archæology, illustration, ix, 15.  
 Mountain railways—Mts. Washington, Rigi, Pilatus, xii, 258; illustration, view of Mont Cenis, i, 422.  
 Mountains, formation of, illustrations, iv, 380, 381, 382.  
 Mountains, of Central Asia, ii, 325, 326; iii, 359, 360; iv, 399, 400; in Africa, ii, 328; altitude of high, vi, 332; exploration, ix, 538; highest, vi, 322; ix, 349, 543; formation of, see Formation of Mountains.  
 Mountain sickness, ix, 541, 542, 543, 544.  
 Mount Brace, highest point in Connecticut, ii, 227.  
 Mount Chester A. Arthur, ix, 34.  
 Mount Nanda Devi, ix, 543.  
 Mount Owen Stanley, xii, 312.  
 Mount Ptoum, temple at, x, 37.  
 Mount Schoda, xii, 313.  
 Mount Vernon, illustration, ii, 759.

Mount Wollaston, lost whaler, vi, 323.  
 Mount Yule, xii, 312.  
 Moustier, explorations by, v, 290.  
 Mowbray, invention by, x, 345.  
 Mowett, James A., obit., i, 621.  
 Moya, Gen. Casimiro N. de, xii, 733.  
 Moyano, Lieut. O., xii, 315.  
 Moynahan, C., obit., iv, 694.  
 Mozaffer-ed-Din, Ameer of Bokhara, x, 98; obit., x, 665.  
 Mozley, J. B., obit., iii, 659.  
 Msiri, Chief, x, 393, 394.  
 Mtesa, Emperor of Uganda, obit., viii, 602; his conversion through Stanley and his death, x, 316.  
 Muhlenberg, Rev. W. A., sketch, ii, 535.  
 Muhlenberg centenary, the, xii, 450.  
 Muir, Pattison, on the nature of the elements, iii, 91.  
 Muirhead, J., obit., x, 665.  
 Mukanes, "high places," ix, 27.  
 Mukhtar Pasha, sketch, ii, 535; iv, 649.  
 Mulder, G. J., obit., v, 601.  
 Mulford, Elisha, obit., x, 653.  
 Mullany, James R. M., obit., xii, 600.  
 Mulledy, Joseph, death of, v, 659.  
 Müller, J., obit., iii, 659.  
 Müller, John Freiherr von, obit., xi, 723.  
 Müller, Karl Ottfried, xii, 22.  
 Müller, R., xii, 492.  
 Mulready, Mr., xi, 345.  
 Mumford, Thomas J., obit., ii, 585.  
 Mummies, xi, 29; discovery of, vii, 261; xi, 32.  
 Municipalities, indebtedness of, iii, 680, 685, 772; vi, 882; liability of, for damages in riots, iv, 769; New Jersey laws on, v, 562; Florida act on dissolution of, vi, 297.  
 Muniore, Chunder Kirtee Sing, obit., xi, 723.  
 Munk, Prof., experiments by, ix, 658.  
 Munkacsy, Mihail, x, 359, 367; xi, 344; xii, 279.  
 Munster, Count, x, 419.  
 Munster, bank of, failure, x, 455.  
 Munster, William F., obit., ii, 607.  
 Muntz, M. A., experiments by, iii, 83; vii, 88; viii, 120; x, 154.  
 Munzinger Bey, i, 8; ii, 2.  
 Murad V (Effendi), attempt to bar from succession, i, 2; sketch, i, 774.  
 Murat, Prince, obit., iii, 659.  
 Murat, Princess, obit., iv, 701.  
 Murohison, Charles, sketch, iv, 650.  
 Murghab River, view on, x, 17; cave-dwellings on, 38.

- Murillo, sale of pictures by, x, 361.  
 Murphy, Lady Blanche, obit., vi, 794.  
 Murphy, Col., x, 424.  
 Murphy, J. Francis, x, 367; xii, 279.  
 Murphy, John K., obit., i, 621.  
 Murray, A., obit., x, 665.  
 Muscles, observations on, vi, 753; xi, 761; muscular sense, the, xii, 672; muscular system, the, x, 695.  
 Musgrave, Sir A., ix, 60.  
 Mushketof, explorations, iii, 859.  
 Mushrooms and Toadstools, xi, 590; illustrations, 590, 592, 593; bibliography of, 595.  
 Music, i, 571; Tonic Sol-fa, ix, 545; recent progress in, xi, 596; xii, 619; instrumental, in churches, ix, 669. See Churches.  
 Music-boxes, x, 608; illustrations, 608, 609, 610.  
 Musical bed, a, x, 613.  
 Musical Instruments, automatic, x, 607; illustrations, 608, 609, 610, 612, 615, 616, 617, 619, 620, 621.  
 Musical sand, ix, 45; x, 608.  
 Musical telephone, iii, 588.  
 Musicians, eminent, xi, 596-602; lists of recent works of, 597-602; xii, 519-528.  
 Musk-ox, illustration, iii, 853.  
 Muspratt, James, obit., xi, 723.  
 Musset, Paul de, obit., v, 601.  
 Mutiny, Japanese, iii, 462.  
 Muts-Hito, Mikado, iii, 460.  
 Muybridge, electro-photograph of, iii, 723.  
 Muzaffer-ed-Din, Prince of Persia, x, 686.  
 Mycenæ, Schliemann's explorations in, i, 28.  
 Myer, Albert J., sketch, v, 548.  
 Myrtol, xi, 291.  
 Myopia. See Eye-sight, vi, 271.  
 Mysore, native rule in, vi, 422.
- Nabonidus, cylinder of, ix, 18.  
 Nachtigal, G., ix, 364, 365; x, 119, 120, 122; his death, 395; obit., x, 665.  
 Nagas, of India, revolt of, iv, 494; v, 388.  
 Nagasaki, illustration, ii, 413.  
 Nageli, experiments by, iv, 36; x, 695.  
 Naglee, Henry Morris, obit., xi, 692.  
 Naib Salar, x, 9.  
 Nain Sing, explorations of, i, 329.  
 Nairne, C. M., obit., vii, 641.  
 Names of Places, xi, 382.  
 Nance, Albinus, iii, 594.  
 Nanda Devi, Mt., ix, 543.  
 Naphtha, in Russia, viii, 701; xii, 307.  
 Naphtha motors, xii, 524; illustrations, 525.  
 Naphthalin, ix, 272.
- Napier, Maj., x, 4.  
 Napoleon III, xi, 482.  
 Napoleon, Jerome, portrait, vii, 321.  
 Naransin, ix, 18.  
 Nares, Sir G., voyage of, iii, 352.  
 Narragansett, loss of the, v, 580.  
 Narragansett Indians, tribal relations abolished, v, 654.  
 Nashville, Tenn., xi, 175; battle, x, 428; illustration, i, 744.  
 Nasmyth, J., observations, iii, 35.  
 Natal, colony of, v, 80; vii, 84; ix, 111.  
 Natchez-on-the-Hill, illustration, ii, 526.  
 National Academy of Design. See under Fine Arts.  
 National Bank taxation, x, 621.  
 National Banks, xii, 783.  
 National league, proclamation of the, xii, 341.  
 National party, the, iii, 806.  
 Nationalities, conflicts of, in Austria, v, 45, 46, 369; vi, 48.  
 Nations, intervention among. See Non-Intervention, vii, 618.  
 Natural gas. See Gas.  
 Natural history, Ill., vi, 409.  
 Natural selection, xii, 668.  
 Naturalization in Brazil, viii, 68.  
 Naturalization in United States, its validity, vi, 618; cases of Buzzi and others, vi, 618 *et seq.*; when fraudulent, vi, 615; President Grant on, i, 683; case of the Bersseliers, iv, 837.  
 Naturalized Americans, in Germany, iii, 245; rights of, x, 303.  
 Naucratis, x, 33; illustration, 34; xi, 27.  
 Nautilus, the, canoe, illustration, ix, 108.  
 Navajos, the, xii, 545.  
 Naval observatory, the, ix, 47.  
 Navarre, dissatisfaction in, i, 730.  
 Navassa, island of, ix, 394.  
 Navies—of Europe, vii, 568; German, viii, 392; Italian, viii, 449; English and French, ix, 370; illustrations, vii, 568, 569, 574, 579, 580; of United States, i, 574; ii, 536; iii, 589; vi, 619; vii, 582; President Arthur on, vi, 781; viii, 162; ix, 212.  
 Navigation, steering indicator for, i, 518; sounding instruments, i, 518; iii, 725; bathometer, i, 519; acts on, in Chili, iii, 95; in Germany, v, 319; the Narragansett and Swanwaha disasters, v, 580; fees to Spanish consuls, viii, 157; unseaworthy vessels, 418; bureau of, ix, 203; signals, life-saving appliances, etc., see Collisions, viii, 136. See also Commerce and Navigation, viii, 145; xi, 195.

Navigators' Islands. See Samoa.  
 Naville, Edouard, ix, 19; x, 85, 86.  
 Navy of Colombia, v, 114.  
 Navy-Yards, United States, vii, 588.  
 Neal, John, sketch, i, 574.  
 Neale, S. A., obit., v, 594.  
 Neaves, Lord C., obit., i, 689.  
 Nebireh (Naucratis), x, 33.  
 Nebo, height of the ridge of, ix, 28.  
 Nebo of Borsippa, god of learning, ix, 18.  
 Nebobaladan, ix, 18.  
 Nebraska, statistics, government, elections, legislative proceedings, etc., in each volume; growth as shown by census returns, i, 575; election of Gov. Garber, 578; railroad lands, 578; election of Senator Saunders, ii, 537; geological character, 588; soil and climate, 588, 589; election of Gov. Nance, iii, 594; re-election, v, 552; grasshoppers, iv, 653; case of removal of the Ponca Indians, 653, 654; need of militia, v, 552; vi, 622; fish-culture, v, 552; vii, 586; election of Senator Van Wick, vi, 621; growth of population, 621; x, 623; election of Gov. Dawes, vii, 587; proposed constitutional amendment, 588; election of Senator Manderson, viii, 554; railroads, new counties, ix, 558; vi, 608; new capitol, xi, 608; election of Gov. Thayer, xi, 604; election of Senator Pad-dock, xii, 526.  
 Nebuchadnezzar, inscriptions, ix, 18, 19.  
 Nebulæ, i, 50; star changed to, ii, 48; origin, of, iii, 38; discovery of planetary, vii, 41; new, x, 53; xi, 56.  
 Neby Mendeh, mound of, ix, 28.  
 Necropolis, Roman, at Carmona, xii, 28.  
 Needham, E. P., invention by, x, 617.  
 Negrete, Gen., iv, 615.  
 Négrier, Gen., x, 24 *et seq.*  
 Negroes, admitted to the bar in California, iii, 71; trial of, iii, 825; intimidation in Arkansas, iv, 40; intellectual status of, iv, 41; as jurors, iv, 845, 847; v, 424, 708; condition in Louisiana, v, 481; university for, v, 484; progress of, v, 595; taxes and schools of, in Georgia, viii, 889; conventions of, iv, 45; vii, 448, 721; viii, 439; votes of, in pres-bytery, vii, 702; civil rights of, vii, 459; viii, 129; marriage with whites, see Mar-riage; exodus of, see Exodus, iv, 854; civil rights of, in New Jersey, ix, 571; property of, at the South, x, 411; education of, in Virginia, x, 778; emigrations of, xi, 571.  
 Negus, the, xi, 1; xii, 1.

Neher, Michael, sketch, i, 579.  
 Nelson, Dr., xii, 101.  
 Nelson Mound in North Carolina, illustration, ix, 15.  
 Nepaul, Chinese influence in, iv, 143; conspi-racy in, vii, 415; insurrection in, x, 497.  
 Nepokoitobitzky, Arthur A., sketch, ii, 539.  
 Nerve-force, transmission of, x, 689; theories of, xii, 671.  
 Nerves, degeneration of, xii, 671; action of alcohol on, 672.  
 Nervous diseases, ix, 554.  
 Nervous system, the, viii, 634; ix, 653, 749; x, 689; xi, 754; xii, 670.  
 Neolithic polishing stones, at Nemours, xii, 24.  
 Nepaul, insurrection at, x, 497; xii, 388.  
 Nephrotomy, viii, 751.  
 Neptune, the, x, 134.  
 Nerses, ix, 764; sketch, 280; obit., ix, 620.  
 Nesselrode, Count, x, 1.  
 Nessler, Victor, xii, 521.  
 Nesterowsky, M., ix, 654.  
 Netanebo II, x, 86.  
 Netherlands, the, government, statistics, legis-lative proceedings, etc., in every volume; views in, i, 583; ii, 542; contest over mili-tary bills, i, 581, 582; cabinet crisis, 581, 582; adjustment of difference with Vene-zuela, 582; appointment of Beyen as war minister, 582; electoral laws, 582, 583; vi, 626; vii, 557; elementary education and reli-gious instruction, i, 583; ii, 543; iii, 597; vii, 590; opening of the North Sea ship-canal to Amsterdam, i, 583; abolition of the annual kirmess or fair, 584; six hundredth anniversary of Amsterdam, 584; dissatisfac-tion with the Crown Prince, 584; the war in Acheen, see Acheen, War in; new cabinet, M. Kappeÿne, chief, ii, 543; new cabinet, iv, 657; marriage of the King, 657; new penal code, v, 555; vi, 627; statue of Spinoza un-veiled, v, 555; increase of revenues, vi, 625; conference for regulation of fisheries, 625; honors to Gen. van der Heyden for success in Acheen, 625; consequences of the silver crisis, 626; ix, 560; sympathy with the Transvaal rebellion, vi, 626; claims in Bor-neo, 626; resignation of Minister Vissering and other ministers, 626; new army law, 627; canal improvement, 627; vii, 557; question of exacting oaths from free-think-ers, vi, 627; serfdom in Java, vii, 589; cabi-net crisis, viii, 557; new loan and fishery treaty, 557; question of revision of the con-

- stitution, 557; the colonies, ix, 556; affair of the crew of the English ship *Nisero*, held captive in Acheen, 558; x, 626; death of the Crown Prince, Alexander, ix, 559, 614; the succession to the throne, 559; new loan, bill to reorganize the State lottery, 559, 560; socialist demonstrations, x, 625; riots in Amsterdam, xi, 607; xii, 529; dissolution of the chamber and new states-general, xi, 606; crisis in the East Indian colonies, 608; extension of the franchise, xii, 529; claims to New Guinea, x, 678, 679.
- Net-making, ix, 560.
- Neumann, Gustavus A., obit., xi, 698.
- Neuralgia, remedy for, x, 800.
- Neuville, Alphonse de, obit., x, 665, pictures by, xi, 844; xii, 279.
- Nevada, statistics, elections, government, mining, etc., in every volume; Eureka and Richmond mines, ii, 544; work of the fish commissioner, iii, 601; railroad extortion, 601; iv, 657; disastrous flood, iii, 601; completion of the Sutro Tunnel, iv, 658; the nut-pine, 658; Nevada Central Railroad opened, v, 556; Bodie Railroad, vi, 629; depreciation of property, vi, 627; mica deposits, 629; constitutional amendments, ix, 563; xi, 609; xii, 531; agriculture and grazing, 564; x, 627; xi, 611; xii, 532; Indians, x, 627; irrigation, xi, 609; xii, 532; railroads, xii, 531; State lands, 532; Comstock, Consolidated California, and other mines, 531.
- Nevin, John Williamson, obit., xi, 698.
- New, John H., obit., iv, 694.
- Newark, growth of, xi, 176.
- New Bedford, growth of, xi, 176; view of, iii, 524.
- Newberry, John Stoughton, ix, 46; obit., xii, 601.
- Newberry, J. S., xi, 538.
- Newberry, Spencer B., ix, 476.
- New Brunswick, viii, 559; xi, 612; xii, 532.
- New Brunswick, statistics, etc., viii, 559; education in, 559, 560; xi, 612; xii, 532; liquor-license law, 532.
- Newburg, celebration at, viii, 577.
- Newburyport, view of, ii, 491.
- New Caledonia, convicts in, ix, 842, 848; crime in, 57.
- New Church, the, vii, 630, x, 627. See New Jerusalem Church.
- Newcomb, S., ix, 49; xi, 48.
- Newcomb, W. W., obit., ii, 585.
- Newdegate, Charles Newdegate, obit., xii, 634.
- Newfoundland, vii, 218; x, 628; religious troubles in, 629; xi, 613; fisheries, 614; French shore question, 406, 614, 615; xii, 533; aid for the unemployed in, xi, 618.
- New Guinea, explorations in, ii, 335; iii, 364, 365; iv, 408; xi, 381; xii, 311, 312; claims to, viii, 81; annexation of southern, x, 58; German and English claims in, ix, 365, xii, 647; massacre by natives, 48. See also Papua.
- New Hampshire, statistics, elections, State officers, legislative proceedings, etc., in every volume; views in, i, 589, 591; constitutional amendments, i, 590, 591; raised map at the State-House, ii, 548; financial embarrassment at Dartmouth College, iii, 605; geological survey, 606; bill to abolish capital punishment, iv, 659; leather-board manufacture, 662; railroads, v, 560, 561; vi, 634; viii, 560; xi, 618; fish-culture, v, 561; xi, 621; xii, 536; question of senatorial election, vi, 631, 632; increase of divorces, viii, 562; longevity, statistics, ix, 568; boundary between Massachusetts and, xi, 622; granite, soapstone, mica, gold, silver, and copper, xi, 622; Constitutional Convention, xii, 534.
- New Haven, growth of, xi, 176; illustration, ii, 222.
- New Hebrides, the, occupied by France, xi, 60; sketch of, xii, 537; map, 538; the French occupation, 539; convention between the British and French Governments, 539.
- New Jersey, statistics, State government, elections, legislative proceedings, etc., in each volume; illustrations, i, 592, 593, 594; ii, 552; constitutional amendments, i, 592; iv, 663; v, 562; election of Senator McPherson, i, 595; legislation on courts, ii, 550; public institutions, 551, 552; v, 566, 567; vi, 637; xi, 626; convention of colored men, ii, 554; election of Gov. McClellan, 556; grants of lands under tide-water, 557; railroad tunnels, 557; earthquake, 557; education, iii, 612; v, 563; industrial, iv, 663; v, 564; convict-labor, iv, 665; Sunday laws, 667; improvement of militia, 668; fish-culture, 668; vii, 593; railroad question, iv, 669; geological survey, 670; special tax commission, v, 562; commission on general municipal laws, 562; food-adulteration, vi, 639; summer resorts, 638; taxation of corporations, ix, 569; x, 631; xii, 623; oyster-lands, ix, 571; child-labor, ix, 571; compulsory education act, the, xi, 625; election of Senator Blodgett, xii, 540.

New Jerusalem Church, i, 595; ii, 557; iii, 614; viii, 564; x, 627; xi, 612; xii, 548. See also New Church.

New London, view of, iv, 298.

New Mexico, ii, 558; viii, 565; ix, 572; x, 632; xi, 628; xii, 545; view in, ii, 559; Indians in, ii, 558; viii, 566; raids of, x, 633; xi, 630; xii, 545; railroads, telegraphs, and newspapers, ii, 559; viii, 565; xii, 545; disorder in, iii, 31; land-system, viii, 566; resources, viii, 565; xi, 630; industries, ix, 572; x, 633; land-titles, x, 633; xi, 631; xii, 546; population, x, 634; cultivation of alfalfa, or California clover, xi, 631; droughts and floods; xi, 630; Indian relics in, ix, 17; x, 632.

New Norcia, mission, x, 66.

New Orleans, debt of, v, 480; vii, 438; Exposition, ix, 573; illustrations, i, 483; ix, 575, 577.

Newport, Ky., growth of, xii, 125.

Newport, R. I., view of, i, 701; old mill, ii, 675.

New South Wales, x, 60, 63; xi, 61, 62. See under Australia.

Newspapers, xi, 632; improvements in journalism, 633; places of publication, 633; subsidiary industries, 634; press associations, 635; Russian, ix, 708.

New substances, xii, 670.

New Testament, revision, vi, 639.

Newton, Henry, obit., ii, 585.

Newton, H. A., observations by, iii, 86, 97.

Newton, Henry J., ix, 651.

New York City, viii, 577; defalcations, 578; new aqueduct, 567, 579; ix, 590; x, 640; xii, 535; East River Bridge opening, viii, 580; amendment of charter, viii, 567; elevated railroads, viii, 568-580; new parks, 580; city politics, 581; bills on, vetoed, ii, 567; street-cleaning bill, vi, 651; removal of police commissioners, vi, 659; consolidation of elevated railroads, vi, 659; surface railroads, ix, 591; x, 641; trials of aldermen for taking bribes, xi, 649; xii, 555; power of appointment, x, 640; charges of malfeasance, ix, 588; x, 641; Statue of Liberty, 642; xi, 649; labor party, xi, 648; libraries, xi, 649, 651; illustrations, i, 604; ii, 565, 567, 569; xi, 650; illustrations of the work on the Croton Aqueduct, xii, 556, 557, 559, 560; recent growth of the city, xi, 177.

New York Harbor, improvements in, v, 250.

New York State, statistics, government, elec-

tions, legislative proceedings, finances, etc., in every volume; views in, i, 599, 601, 602, 603, 604, 605; ii, 562, 563, 565, 567, 569, 570; viii, 575; act for equalization of assessments, i, 597; concerning testimony of husbands and wives, 597; new Capitol, 599; iv, 671; vii, 614; viii, 575; constitutional amendments, 605; ii, 568; iv, 681; v, 576; vii, 601; burning of Brooklyn Theatre, i, 605; sketch of Gov. Robinson, 606; bill for sale of lateral canals, ii, 567; apportionment of members of legislature, iii, 614; iv, 671; codification of laws, iii, 615; question of maintaining canals, 616; vi, 651; pipe-line companies, iii, 618; married women may execute a power of attorney, 619; coal and railroad combination, 619; fish-culture, 620; woman-suffrage convention, 621; constitutionality of civil-damages act, 625; election of Senator Conkling, iv, 671; state charities, 672; v, 572; tramp act, iv, 675; pluralism, 675; award of damages for false imprisonment, 675; common-school system, 677; railroad freight discrimination, 678; revision of assessment laws, v, 569; vi, 650; taxation of stock of national banks, v, 570; Hudson River Tunnel, 580; factions of the Republican party, vi, 643; resignation of senators, 644; election of successors, 646; sketches of Lapham and Miller, 648; charge of bribery, 648; viii, 577; railroad commission, vi, 651; vii, 599; viii, 569; bill for preventing telegraph consolidation, vi, 651; emigration commission, vi, 651; anti-monopoly league, 652; elevated-railroad bills, vii, 600; liability for damages, vii, 616; five-cent-fare bill, viii, 568; investigations, vii, 602; election of Gov. Cleveland, 610; sketch and portrait, 611; political assessments, 614; viii, 566; decision on obligations of railroad companies, vii, 614; act regulating primary elections, viii, 567; civil-service, commissioners, 567; x, 639; law amended, ix, 637; Adirondack forests, viii, 576; ix, 582; x, 635; telegraph suits, viii, 576; Newburg celebration, 577; acts affecting municipal administration, ix, 580; x, 636; street railroads, ix, 581; prison labor, 582; x, 636; xi, 642; xii, 548; the Western House of Refuge, 582; David B. Hill, governor, 588; freedom-of-worship bill, x, 634; the census, 634; Niagara Falls reservation, 635; gas companies, 635; canal convention, xi, 643; capital punishment, xii, 548; insurance legislation, 552.

- New Zealand, native question in, vii, 45; see Maoris, the; government, etc., 46; land system, 46; viii, 87; ix, 55, 60; ix, 60, 66; xi, 65; mountains in, ix, 545; xii, 48; volcanic eruptions in, xi, 66.
- Nez Percés Indians, war with, ii, 89; removal of, ordered, iii, 28.
- Niagara Falls, scheme to transmit power from, vi, 253; xii, 561; reservation, x, 635.
- Niagara Falls Park, commissioners appointed, viii, 570; restoration, x, 674; steps for a park on the Canadian side, x, 674; cantilever bridge, illustration, viii, 814.
- Nias, Island of, xi, 482.
- Niblo, William, obit., iii, 642.
- Nicaragua, statistics, government, etc., vi, 661; vii, 616; viii, 581; ix, 591; x, 642; xi, 658; xii, 562; difficulty with Germany, iii, 386; Mosquito territory, vi, 661; new constitution, 661; proposed canal, 662; vii, 618; viii, 581; ix, 592; x, 642; xi, 654; xii, 568; insurrections, vi, 668; volcano of Ometepe in eruption, vii, 582; proposed national railroad, ix, 592; lake steamer, xi, 653; eruption of Momotombo, 653.
- Nice, water-works of, x, 881; observatory, floating dome of, xi, 58.
- Nicholas I, of Montenegro, sketch, ii, 571; iii, 586.
- Nicholas, Grand Duke, sketch, ii, 571.
- Nicholls, Francis T., sketch, i, 498; government headed by, ii, 455.
- Nicholls, Rhoda H., xi, 846.
- Nichols, E. L., ix, 45.
- Nichols, Edward T., obit., xi, 693.
- Nichols, Samuel, obit., v, 594.
- Nichols, W. R., investigations by, v, 87; ix, 719; obit., xi, 693.
- Nicholson, James W. A., at Alexandria, vii, 248; obit., xii, 601.
- Nickel, magnetic properties of, i, 250; in iron-ores, ii, 501; determination of, ii, 502; ores in United States, vii, 532; processes with, viii, 522; in Nevada, ix, 476; steel, xii, 485; mines at Thio, 485; plating, x, 159; xii, 485.
- Nicol, W. J., theory of, x, 149, 152.
- Nicolaides, R., ix, 654.
- Niederwald, plot, ix, 358.
- Niége, oleomargarine process of, vii, 661.
- Nieritz, K. G., sketch, i, 606.
- Niesel, G., observations, viii, 25.
- Nieuwenhuis, Domela, xi, 607; xii, 529.
- Niger, the, exploration of, v, 290; trade on, x, 898.
- Nihilism in Russia, iii, 744; Melikoff's policy, vi, 795; methods, vi, 802; beginning, vii, 786; x, 718.
- Nihilists, iv, 681; disturbances by, iv, 776, 777; v, 662, 664; arrests and trial of, for the murder of the Czar, vi, 796; two sections of, vi, 797; proclamations of, vi, 798; attempt to assassinate Gen. Tcherevin, vi, 799; alleged plot of, in Switzerland, vi, 829; omitted from amnesty, viii, 706; arrests, viii, 709; ix, 711; in Russia, x, 718; trials, 719. See Anarchism.
- Nikacheff, M., xii, 488.
- Nikolaieff, Col., x, 731.
- Nile, composition of waters, i, 99.
- Nilson, S., discovery by, iv, 137; experiments, v, 87; viii, 117; x, 153; obit., viii, 608.
- Nina, Cardinal, obit., x, 713.
- Nisero affair, ix, 558.
- Nitrate deposits in Chili, iii, 95; in Peru, iii, 688; vi, 276; viii, 124.
- Nitrate of soda, x, 164; whether contraband of war, 164.
- Nitric acid as a solvent, i, 98.
- Nitric ferments, vi, 98.
- Nitrification, iii, 83; cause of, ix, 128, 157.
- Nitrites in water, test for, vii, 91; estimation of, ix, 128.
- Nitrogen, absorbed by plants, i, 92; quantitative estimation of, ix, 122, 127; x, 156; in the soil, 157; sources of, in vegetation, xii, 111.
- Nitro-glycerine, x, 344.
- Nitrous oxide, effects of, xii, 679.
- Nitzsch, K. W., obit., v, 601.
- Noailles, P., obit., x, 666.
- Nobel, A., discovery by, iv, 131; invention, x, 344, 345.
- Noble, Matthew, sketch, i, 607.
- Nöggerath, J., obit., ii, 607.
- Nollet and Van Malderen, invention by, iii, 275.
- No Man's Land (Japan), ix, 416; (Africa), iv, 129; (Asia), x, 4, 6.
- Nominations, Presidential. See United States, vols. i, v, and ix.
- Nonconformists, use of title "Rev." by, i, 25; burial of, in parish church-yards, iii, 13.
- Non-intervention among nations, the principle of, vii, 618; science of international law, 618-622; responsibility of nations, 623; intervention when asked for, 625; when nationality is involved, 625; union of states, 626; cases of succession and religion, 627; the Roman question, 627.

Norbury, R., obit., xi, 724.  
 Nordenskiöld, explorations of, i, 328; iii, 354; iv, 411; viii, 28; in Greenland, 384; x, 398.  
 Nordnan, Johannes, obit., xii, 365.  
 Nordquist, explorations of, iv, 412.  
 Norfolk, Va., growth of, xi, 178; illustration, ii, 262.  
 Normanby, Marquis, iv, 56.  
 Norodom, King of Cambodia, ix, 389; x, 118.  
 Norquay, John, x, 568, 569.  
 Norris, experiments by, viii, 683.  
 Norristown, growth of, xii, 126.  
 North, farthest point reached in the, illustration, ix, 31.  
 North Borneo Company, the, vi, 329.  
 North Island, eruption on, xi, 66.  
 Northbrook Island, vii, 334.  
 Northbrook, Lord, sketches, i, 406; v, 580; x, 60, 810.  
 North Carolina, statistics, State officers, elections, legislative proceedings, etc., in each volume; election of Gov. Z. B. Vance, i, 607; constitutional amendments, 608; v, 586; xii, 564; new State University, 609; v, 584; vii, 632; State charities, i, 610; Senator Ransom elected, 611; Western North Carolina railroad, 611; iii, 628; v, 580; election regulations, ii, 572; State debt, 573; iii, 626; iv, 687; v, 583; vii, 630; sketch of Judge W. N. H. Smith, ii, 574; iii, 630; penitentiary system, iii, 626; railroads, 627; v, 580; State archives, iii, 630; conveyance of real estate, iv, 685; tramp act, 686; school legislation, 688; vi, 664; election of Gov. Vance to the office of senator, iv, 689; sketch of Lieut.-Gov. Jarvis, 690; fish-culture, 690; natural features of the State, 690, 691; swamp lands, v, 584; colored industrial fairs, 585; Swepson embezzlement case, 585; extradition, 585; re-election of Gov. Jarvis, 586; vote on prohibition, vi, 665, 666; colored convention, 667; Indians, 669; population by counties, 669; railroad bonds, vii, 632; celebration of Mecklenburg declaration of independence, 634; minerals, viii, 588; election of Gov. Scales, ix, 594; phosphates, xi, 656; oyster survey, 656.  
 Northcote, Sir Stafford, portrait, x, 443; sketch, 448; illustration, suggesting the suspension of Parnell, vii, 204; ix, 371, 690.  
 Northeast Passage, search for, iv, 411; Nordenskiöld's conclusions as to, iv, 415.  
 Northen, Adolf, obit., i, 639.  
 North Sea Canal, x, 417.

Northwest Passage, iii, 354, 355.  
 Norton, Caroline. See Maxwell.  
 Norton, William A., obit., viii, 592.  
 Norway. See Sweden.  
 Nourmahal, the, yacht, x, 793.  
 Nova Scotia, viii, 584; ix, 594; x, 648; xi, 657; education, viii, 585; financial depression, ix, 594; secession movement, xi, 657; xii, 565; resolutions regarding the union, 566.  
 Novels, recent. See Literature, in every volume.  
 Novgorod, illustration, ii, 688.  
 Noxious insects and plant parasites, vi, 669.  
 Noyes, Amos O., obit., v, 594.  
 Noyes, John H., obit., xi, 694.  
 Nubar Pasha, iv, 329, 330; vi, 237; ix, 285, 286, 292; x, 306.  
 Nubia, insurrection in, ix, 292.  
 Nuguor Island, x, 139.  
 Nulty, Bishop, x, 455.  
 Numismatic discovery, ii, 411.  
 Nufiez, Dr., sketch, viii, 188.  
 Nufiez, Gen. Rafael, vi, 113.  
 Nurses, trained, xi, 659.  
 Nussbaum, experiments by, x, 692.  
 Nussbaumer, observations by, vi, 400.  
 Nut-pine tree, utility of, iv, 658.  
 Nutrients, function of, viii, 343; proportions of, in foods, 348.  
 Nutritive ingredients and values of the food we eat, vi, 670; comparative cost of, viii, 346.  
 Nutt, G. W. M., obit., vi, 686.  
 Nuttall, Zelia, xii, 16.  
 Nye, James W., obit., i, 621.  
 Nyeshel, V. E., xii, 676.  
 Nyung Yang, rebellion of, xi, 114.  
 Oakey, Emily S., obit., viii, 598.  
 Oakland, xii, 126.  
 Oates, R. H., ix, 479.  
 Oath, the iron-clad, iv, 24; decisions on, iv, 24.  
 Oaths and affirmations in British Parliament, the Bradlaugh case, vi, 627; vii, 365; viii, 409; Cong. Union on, viii, 155.  
 Oaths, test, for jurors, iv, 293; decisions on, in Florida, 376.  
 Oatman, Dr. J. S., obit., i, 622.  
 Obbareach, King, x, 119.  
 Obeidullah, surrender and rescue of, vii, 304; obit., viii, 603.  
 Obelisks, ix, 595; illustration of the New York, 596; list of monoliths, 597-599; practical use of, 600; the crabs, 600; masonic symbols, 595.  
 Obrecht, M., xii, 45.

- O'Brien, William, xii, 336; imprisonment of, 339.
- O'Brien, William S., obit., iii, 642.
- Obituaries, in every volume.
- Obligations of Contracts, vii, 648; case of Virginia bonds, 648; of Louisiana, 652; Supreme Court decisions, 653.
- Obrenovitch, house of, vii, 739.
- Observatories, xi, 57; xii, 89.
- Obstruction, resolution in Parliament on, v, 331. See Clôture, vii, 208, 208.
- O'Callaghan, Edmund B., obit., v, 594.
- Ocarina, ix, 625.
- Occultations, x, 53.
- Ochre, deposit of, in Tennessee, ix, 757.
- O'Connell, Morgan, challenged by Disraeli, ii, 252.
- O'Connor Don, the, bill of, in Parliament, iv, 453.
- O'Connor, John, expelled from Ohio Legislature, iii, 666.
- O'Connor, Charles, obit. and portrait, ix, 626.
- O'Connor, J. F. X., ix, 19.
- Octroi de mer, ix, 804.
- Oculists, new drugs used by, ix, 271.
- Odell, W., observations by, v, 36.
- Odessa, illustration, ii, 689.
- Odger, George, obit., ii, 607.
- Odlin, Peter, obit., ii, 585.
- O'Donnell, P., crime and trial of, viii, 416; diplomatic correspondence on, viii, 281.
- O'Donovan, E., death of, viii, 301.
- O'Dwyer, A. O., obit., ii, 608.
- O'Dwyer, Dr. Joseph, x, 743.
- Odyssey, altar mentioned in the, ix, 23.
- Offenbach, J., obit., v, 601.
- Office, qualifications for, x, 325.
- Office-hunting, vi, 846, 847.
- Officials, State, case of Missouri Treasurer, iv, 641; Nebraska Auditor, v, 549; New Jersey Treasurer, v, 566; county, payment of, by fees, vi, 205.
- Officials, United States, alleged abuse of power by, iv, 18.
- Ogden, William B., sketch, ii, 614.
- Ogier, experiments by, vii, 89.
- Ogilvie, R. A., obit., iv, 701.
- Ogilvie, Mr., xii, 314.
- Oglethorpe Celebration, viii, 389.
- Ogowé River, exploration of, iv, 401; vi, 328; vii, 336.
- O'Hagan, Baron, obit., x, 666.
- Oham, ix, 114.
- Ohio, statistica, elections, government, legislative proceedings, etc., in each volume; views in, i, 647, 648; ii, 616, 619; repeal of Geghan law, i, 646; inauguration of Governor Hayes, 646; strikes and riots, 649; ii, 621; v, 605; ix, 630, 631; election of Governor West, ii, 621; re-districting, iii, 666; v, 607; constitutional amendments, iv, 703; x, 673; election of Governor Foster, iv, 705; re-election, vi, 702; of Senator Sherman, vi, 700; population by counties, 703; liquor legislation, vii, 657; viii, 607, 609; ix, 630; xi, 631; xii, 643; election of Governor Hoadley, 609; floods, ix, 630; Cincinnati riot, 630; election of Governor Foraker, x, 673; re-election, xii, 643; contested seats in the State legislature, x, 673; xii, 731.
- Ohio River, flood in the, ix, 630.
- Oil, a new, viii, 111; drying of, ix, 124.
- Oil, calming waves with, experiments, vii, 660.
- Oil-burner, improved, xii, 652.
- Oil-cloths, floor, viii, 97.
- Oil-fuel, xii, 651.
- Oil-stoves, x, 386.
- Oils, spectrum analysis of, x, 155; test for, x, 158.
- Okechobee, Lake, drainage of, viii, 309; xii, 287.
- O'Keefe, Eugene, obit., v, 594.
- O'Keefe, Mr., x, 139, 140.
- Oklahoma boomers, the, x, 762.
- Oklobjio, I. D., sketch, ii, 621.
- Okubo, assassination of, iii, 462.
- Old Catholics, i, 649; ii, 621; iii, 669; iv, 704; v, 609; Archbishop of Canterbury on resolutions of, i, 22; abolition of priestly celibacy, iii, 669; communion in both kinds, iii, 670; recognition asked of Anglicans, iv, 32; relations with the Papacy, v, 609; history and doctrines of, and relations with the Church of England, xii, 644.
- Olden, C. S., obit., i, 622.
- Oldham, Thomas, obit., iii, 659.
- Old Ironsides, history, vi, 620.
- Oleomargarine, its manufacture, vii, 661; illustrations, 662, 668; ix, 2; New York law on, 664; xi, 232, 473; foreign demand for, ii, 112; tests for, vii, 89; new method of detection, x, 154.
- Oliphant, Mrs. Laurence, obit., xi, 724.
- Oliver, Dr. Charles A., xii, 672.
- Ollier, Edmund, obit., xi, 724.
- Olney, Edward, obit., xii, 602.
- O'Loghlen, Sir B., vii, 43.
- O'Loghlen, Sir C., obit., ii, 608.



- Olzewski, experiments of, ix, 484; xii, 104.  
 Omaha, growth of, xi, 179.  
 O'Mahony, John, obit., ii, 585.  
 Omdurman, fall of, x, 319, 320.  
 Omer Pasha, obit., iv, 701.  
 Ometepe, volcano of, viii, 582.  
 Omohundro, J. B., obit., v, 594.  
 Onderdonk, Horatio G., obit., xi, 694.  
 O'Neal, Edward A., vii, 6.  
 O'Neill, E. O., experiments of, vii, 86.  
 O'Neill, H., x, 894.  
 Ontario, province of, viii, 609; ix, 264, 632; x, 673; xi, 732; xii, 644.  
 Opal-mines, in Mexico, xi, 556.  
 Opdyke, George, obit., v, 594.  
 Opium, attempts to suppress the use of, ii, 181, 182; iii, 100; vi, 109; culture in China, iii, 100; in Persia, v, 628; ix, 647; Americans prohibited from traffic in, v, 704; monopoly in India, vii, 416; reduced trade in China, viii, 126; convention between China and England, x, 174; importation of, into the United States, xii, 200.  
 Opium-traffic in India and China, vi, 703; vii, 666; x, 105.  
 Oppenheimer, S., xi, 50.  
 Oppolzer, Dr., ix, 58.  
 Orange, the last prince of, ix, 614.  
 Orange Free State, ix, 115.  
 Orangemen, in Newfoundland, x, 629.  
 Orchardson, W. Q., x, 359, 364; xi, 345; xii, 277.  
 Orchestration, with illustration, x, 612.  
 Orchestrons, with illustration, x, 619.  
 Orohilla weed, ix, 493.  
 Ord, E. O. C., sketch, viii, 611; service on the Rio Grande, ii, 513, 663; x, 429.  
 Ordega, M., ix, 339.  
 Order of Christ, the, x, 712.  
 Order of Corporate Reunion, ii, 21.  
 Order of Pius IX, the, x, 712.  
 Order of the Double Dragon, vii, 102.  
 Ordnance, improvements in, ii, 622; experiments with, v, 29; of various countries, vii, 576.  
 Ordish, Rowland Marsh, obit., xi, 724.  
 Ordway, Nehemiah G., vi, 202.  
 Oregon, statistics, State officers, legislative proceedings, etc., in each volume; election of Senator Grover, i, 651; sketch, 653; State University and Agricultural College, 651; ii, 627; xii, 646; disputed election of 1876, i, 652, 653; ii, 627; Columbia River canal, ii, 627; x, 676; discoveries of fossil remains, ii, 628; salmon fisheries, iii, 671; vii, 671; viii, 612; ix, 636; xii, 646; Indian outbreaks, iii, 673; election of Gov. Thayer, 675; of Senator Slater, 676; sketch, 676; property of married women, 676; Chinese immigration, 676; iv, 712; growth in trade and values, iv, 707, 708; woman suffrage, iv, 712; v, 611; vi, 704; defeated, ix, 635; projected railroad, 618; vi, 706; new channel in the Columbia, vi, 614; population of towns and cities, vi, 706; of counties, 707; election of Gov. Moody, vii, 668, 672; State lands, 670; constitutional amendments, xi, 734; xii, 647; Gov. Penoyer, xii, 645.  
 Orense, Marquis, obit., v, 602.  
 Ores, origin of, xi, 538.  
 Organic and inorganic bodies, ix, 808.  
 Organ worked by sunlight, x, 614.  
 Organista, x, 618.  
 Organs, pipe, reed, etc., x, 614.  
 Orguinetta, x, 617.  
 O'Reilly, Henry, obit., xi, 694.  
 Orientalists, congress of, i, 711.  
 Oriental powder, x, 845.  
 Orinoco River, sounding rocks beside the, x, 607.  
 Orleans princes, expulsion of the, from France, xi, 355.  
 Orloff, Prince, obit., x, 666.  
 Orpen, Sir R., obit., i, 639.  
 Orr, Charles A., obit., i, 639.  
 Orton, James, sketch, ii, 628; explorations, ii, 336.  
 Orton, William, obit., iii, 642.  
 Osborn, Austin Melvin, obit., xi, 694.  
 Osborne, Bernal, obit., vii, 647.  
 Oscar II of Sweden, iii, 775; dissatisfaction with, x, 745.  
 Osgood, Samuel, sketch, v, 614.  
 Osiris, vii, 260.  
 Osman Digman, ix, 292, 293, 295; x, 315, 318; xi, 312; xii, 244.  
 Osman Pasha, sketch, ii, 628.  
 Osman Reski Pasha, vi, 236.  
 Osmate of Potassium, xi, 291.  
 Osortasen, King, ix, 19.  
 Österbygd, colony of, x, 398.  
 Ostrich-farming in the United States, vii, 672.  
 O'Sullivan, William H., obit., xii, 635.  
 Oswego, recent growth of, xi, 179.  
 Otter, Admiral H. C., obit., i, 639.  
 Otter, Col., x, 126 *et seq.*  
 Otto, King of Bavaria, xi, 392.  
 Otuiti, giant images at, ix, 276.

- Oude, Wadjid Ali Shah, obit., xii, 685.  
 Ouray, Chief, sketch, v, 615.  
 Ouse, Roman bridge over the, ix, 22.  
 Outerbridge, A. E., xii, 486.  
 Overbrook, Pa., Simpson house at, illustration, xii, 869.
- Pancera, invention by, x, 846.  
 Panclastites, x, 153, 846.  
 Panda, King of the Zulus, iv, 853; cession to the British by, x, 187.  
 Panbianco, Cardinal, obit., x, 666, 718.  
 Pango-Pango, 731.  
 Panofka, Heinrich, obit., xii, 635.  
 Panopolis, ix, 22.  
 Panславists, sentence of a leader of, iii, 426; agitations of, viii, 705. See Slava.  
 Pantanius, x, 121.  
 Pantelophone, the, vi, 258.  
 Pantopolite, x, 845.  
 Pantrizella, Gen., xi, 45.  
 Pao-Tchao, Gen., x, 26.  
 Papacy, the, relations to Germany, i, 260, 680; ii, 659, 692; iii, 881; v, 639; vi, 846, 775, 792; vii, 857, 858, note, 724; viii, 895, 698; with Italy, i, 422, 708; ii, 408, 410, 677; iii, 736; vi, 450, 792; vii, 437, 724; viii, 692; with Austria, viii, 694; with Belgium, iii, 56; v, 54, 56; viii, 56, 698; with Russia, vii, 726; viii, 694; with Switzerland, ii, 682; viii, 694; with South American governments, i, 707; with France, iii, 848, 848; vi, 798; vii, 726; viii, 370; in United States, vi, 798; viii, 694; establishment of the hierarchy in Scotland, iii, 732; instructions to bishops in United States, iii, 787; the papal guarantees, ii, 408; viii, 454; see also the allocution, ii, 677, and Roman Question, vii, 627; negotiations, xi, 390. See also Roman Catholic Church.  
 Pape, M., invention of, x, 616.  
 Paper blasting-powder, x, 846.  
 Paper, carbon or impression, ix, 638.  
 Paper Envelopes, Bags, etc., xi, 734.  
 Paper Exposition, iii, 724.  
 Paper-hangings and wall-paper, viii, 615; ix, 247.  
 Paper-making in India, ix, 407.  
 Paper-pulp, new process, viii, 115.  
 Papua, ix, 638; x, 678; map, 679; houses, 680; labor recruiting in, ix, 638; annexation of, ix, 639, 640; x, 400, 679; xii, 647.  
 Papuans, canoes of, illustration, ix, 116; houses, x, 680.
- Parabuxinidine, x, 299.  
 Paraguay, i, 654; iii, 677; vi, 724; vii, 673; viii, 617; ix, 640; x, 681; xi, 788; xii, 648; French and German colonization in, xii, 648, 649; German treaty, 648.  
 Paraldehyde, x, 299.  
 Parallax, Solar, xi, 48.  
 Pardo, Don Manuel, assassination of, iii, 687.  
 Pardons, Board of, in Connecticut, viii, 258.  
 Parian Wares, viii, 640.  
 Paris, Auguste, ii, 819.  
 Paris, Comte de, xii, 291; marriage of, xi, 855.  
 Paris, first meeting of the Chambers in, since 1870, iv, 892; map of, and environs, ii, 806; illustrations: bridges of, ii, 308; opera-house, 812; arc de triomphe de L'étoile, 817; church of Notre Dame, 816; labor disturbances in, xi, 859; right of, to legislative autonomy, xii, 297.  
 Paris Observatory, the, ix, 47.  
 Paris Salon, exhibitions of the, x, 358; xii, 274.  
 Parisel, Dr. F., obit., ii, 608.  
 Parish churches bill, xi, 21.  
 Park, Richard H., statue by, x, 367.  
 Parker, R., experiments by, iii, 722.  
 Parker, Willard, ix, 726, 727; sketch, 641.  
 Parke, Sir Henry, x, 174; obit., x, 666.  
 Parlatore, F., obit., ii, 608.  
 Parliament, the German, organization of, vii, 209; absenteeism, 210; rules, 210; groups in, 211; general aspect, 211.  
 Parliament, eleventh, of Queen Victoria, xi, 398; xii, 848.  
 Parliamentary system of England, the, vii, 199; rules, *ibid.*, 206; penal power, 202; expulsions, 202; the clôture, 203.  
 Parliament buildings, Sydney, illustration, iv, 58.  
 Parliament House explosions, ix, 878; x, 284.  
 Parmentier, Gen., observations by, viii, 22.  
 Parnell, O. S., sketch, v, 615; arrest, vi, 868; proposed suspension, vii, 204; "Treaty of Kilmainham," vii, 367; controversy with Mr. Foster, viii, 412; ix, 371, 372; x, 454, 455; in Parliament, illustration, vii, 205.  
 Paropamisus range, the, x, 4; valleys of, 7.  
 Parra Aquileo, i, 115.  
 Parrott, R. P., obit., ii, 586; invention by, iii, 754, 762.  
 Parsivans, the, x, 8.  
 Parsons, Dr., murder of, v, 690.  
 Parsons, Edward Y., obit., i, 622.  
 Parsons, H. B., experiments by, vi, 95; obit., x, 653.

- Parsons, P. M., invention by, i, 523.  
 Parsons, Theophilus, sketch, vii, 678.  
 Parthenine, x, 300.  
 Parton, Arthur, xi, 346.  
 Pasadena, xii, 126.  
 Pasaglia, Carlo, obit., xii, 635.  
 Paschall, G. W., obit., iii, 643.  
 Pasolini, Count, obit., i, 640.  
 Passamante, Giovanni, iv, 528.  
 Passerini, L., obit., ii, 608.  
 Pasteur, Louis, germ theory of, iii, 387; experiments by, iv, 448; vi, 347; x, 157, 484.  
 Patagonia, partition of, i, 34; iv, 38; x, 41; disputed claims, x, 41; explorations in, xii, 315; discovery of gold in, xi, 39.  
 Patella, fracture of the, ix, 749.  
 Patenôtre, M., x, 28, 29.  
 Patents, viii, 618; grounds and methods of obtaining, laws on, etc., 618-623; change in English law, 623; international conferences, 624; bill in Germany, ii, 851; office organized, 352; Congress, iii, 314; to two or more, 809; Burdett-Estey suit, iv, 842; drive-well suit, v, 418; British law, viii, 410; ix, 642; x, 682; international union, ix, 389; xii, 649; decisions in courts, xi, 738; xii, 650; statistics and descriptions of some inventions for every-day use, xii, 649-656; illustrations, 651-656; amendment of law, 204; case of extension of, 650.  
 Patin, H. J. H., sketch, i, 654.  
 Patriarchate, the œcumenical, xii, 778.  
 Patrizi, O., obit., i, 640.  
 Patterson, Capt., explorations and death of, iv, 408.  
 Patterson, Robert, sketch, vi, 725.  
 Patterson, William O., obit., viii, 598.  
 Pattison, Mark, obit., ix, 620.  
 Pattison, R. E., sketch and portrait, vii, 678.  
 Paul, M., observations of, viii, 21.  
 Paul, Gabriel R., obit., xi, 695.  
 Paulding, Hiram, obit., iii, 643.  
 Pouncefort, Sir Julian, x, 420.  
 Pavement, for cities, ii, 277.  
 Pavy, F. W., experiments by, ix, 658.  
 Pavy, Octava, ix, 38-35.  
 Pawtucket, growth of, xii, 126.  
 Payer, Richard, explorations by, ix, 350; xi, 381; xii, 314.  
 Payne, Joseph, sketch, i, 654.  
 Paynter, James A., obit., i, 640.  
 Peabody Museum, the, xi, 22.  
 Peach, Benjamin N., ix, 636, 637.  
 Peacock, Mother Mary T., obit., iv, 774.  
 Peanuts, vii, 829; xii, 758.  
 Pear-blight, theory of, ix, 94.  
 Pearce, Charles Sprague, xi, 347; xii, 279.  
 Pearce, Richard, x, 578.  
 Pearl, the, canoe, illustration, ix, 109.  
 Pearson, R. M., obit., iii, 643.  
 Pearson, Clement, obit., xi, 695.  
 Peasant proprietors, in Ireland, x, 526.  
 Pease, Alfred H., obit., vii, 641.  
 Pease, Joseph L., obit., iii, 643.  
 Peat, use of, in Mexico, ix, 498.  
 Pecci, Cardinal, sketch, ii, 629. See Leo XIII.  
 Pechüle, Dr., discovery by, vi, 38.  
 Pechili, Gulf of, blockaded, x, 27, 28.  
 Peck, Asahel, obit., iv, 694.  
 Peck, Ebenezer, obit., vi, 687.  
 Peck, G., D. D., obit., i, 622.  
 Peck, John J., obit., iii, 643.  
 Peck, Jesse T., obit., viii, 598.  
 Peckham, F. A., obit., i, 622.  
 Peckham, S. F., observations by, iv, 53.  
 Pedasso, Homeric city of, ix, 25.  
 Pedersen, Knud, obit., i, 640.  
 Pedra Pedraõ, discovery of the, xii, 306.  
 Pedro II of Brazil, sketch, ii, 629; portrait, 74.  
 Peel, Arthur W., sketch and portrait, ix, 643.  
 Peeples, Judge C., obit., ii, 586.  
 Peet, Stephen D., xi, 23.  
 Peirce, Benjamin, obit., v, 595.  
 Peking, illustrations; Temple of Heaven, iii, 98; western gate, 100.  
 Pel, Gen., obit., i, 640.  
 Pelew Islands, x, 138.  
 Pelham, William, obit., iv, 694.  
 Pellegrini, Antonio, obit., xii, 635.  
 Pellicier, A. D., obit., v, 595.  
 Pelly, Sir Lewis, ii, 5, 6.  
 Pemberton, J. O., sketch, vi, 726; x, 425.  
 Penck, A., explorations by, xii, 313.  
 Pendleton bill, the, ix, 692.  
 Penfield, S. L., x, 156.  
 Penjdeb, x, 4; Afghan claim to, 7; fight at, 10; cave dwellings near, 33; occupation of, ix, 714.  
 Penitentes, figures called, ix, 543.  
 Penn, John, obit., iii, 660.  
 Pennie, Henry, invention by, ix, 736.  
 Pennock, Rear-Admiral A. M., obit., i, 622.  
 Pennsylvania, statistica, government, legislative proceedings, elections, etc., in each volume; views in, i, 656, 657; ii, 632, 636; election of Senator J. D. Cameron, ii, 630; strike, 636, see Labor-Strikes, iv, 717; boundary-line of New York, i, 637; the oil busi-

- ness, iii, 678, 682; Standard Oil Company, 682; election of Gov. Hoyt, iii, 684; case of payment of Pittsburg bonds, 685; of farming land in Pittsburg, 686; tramp and store-order acts, iv, 715; taxation of corporations, 715; v, 619; investigation of bribery charges, iv, 718, 721; v, 621; management of Agricultural College, iv, 719; railroads, 719; v, 618; xi, 746; taxation of church property, iv, 721; liability of a city for the condition of its streets, 721; sale of medical diplomas, v, 622; insurance companies, vi, 727; population by counties, 731; election of Gov. Pattison, vii, 679; sketch and portrait, 678; divorces, ix, 645; xi, 745; liquor-traffic, xi, 745; abuses in soldiers' orphans homes, 746; industrial statistics, 747; election of Gov. Beaver, 750; married women's property act, xii, 656; constitutional amendments, 657; the American party, 659.
- Pensions, in Japan, i, 427; in New Jersey to soldiers of 1812, vi, 688; to soldiers of other American wars, ix, 224; increase of, bill in Congress, viii, 248; amendment to pension veterans of Mexican and Indian wars, viii, 248; xi, 255; bill in United States, xii, 183; in Germany, 328; increase in number of, 779.
- Pentarchist party, the, in Italy, xi, 454.
- Pentaur, poem of the, ix, 28.
- Pentaura, mummy of, xi, 32.
- Penzance, Lord, ii, 18 *et seq.*
- Peor, site of, ix, 28.
- Peoria, growth of, xi, 719.
- Pepe, King, ix, 19.
- Peptones the, viii, 119; xii, 675.
- Pereire, I., obit., v, 602.
- Pereirine, x, 300.
- Perger, Rt. Rev. J., obit., i, 640.
- Perier, sketch, i, 659.
- Perinchief, Rev. Octavius, obit., ii, 586.
- Perkin, Dr. W. H., experiments by, x, 157, 158.
- Perkins, G. C., vii, 74.
- Perkins, George R., sketch, i, 659.
- Perkins, Jonathan C., obit., ii, 586.
- Perkins, Samuel E., sketch, iv, 723.
- Perkins, William, obit., xii, 603.
- Peroffskaya, Sophia, vi, 797.
- Perraud, J. J., obit., i, 640.
- Perrin, Robert P., obit., i, 622.
- Perrone, G., sketch, i, 659.
- Perrotin, discoveries by, i, 46; ii, 44; iii, 86; xi, 54.
- Perry, electric railway of, viii, 678.
- Perry, Benjamin F., obit., xi, 695.
- Perry, Oliver H., statue of, x, 367.
- Perry, William, obit., xii, 603.
- Persecution of Christians in China, xi, 155.
- Persia, sovereign, ministry, statistics, etc., in each volume, except iii and xi; views in, i, 660; ii, 637, 638; travels of the Shah, i, 660; reforms, 660; incursions of Tekke and Kurds, i, 661; v, 623; vi, 731; mission, i, 661; the Russo-Turkish war, ii, 638; iv, 724; possible alliance with England, iv, 724; reorganization of the army, 724; vi, 733; the Afghan question, v, 622; famine, 623; opium-culture, 623; succession to the throne, vi, 731; x, 686; railroad schemes, vi, 732; rivalry of Russians and British in, 732; Merv oasis, 733; tent-dwelling Turkomans of Kara Kum, 733; under protection of Russia, vii, 681; Sarakhs, 681; internal disturbances, 681; Shiites and Sunnites, viii, 627; commerce and industries, ix, 646; the Russian advance, 647; x, 14, 686; attempted capture of Herat, x, 1; minister of foreign affairs, xii, 660.
- Persian antiquities, xi, 26.
- Persian succession, the, vi, 731; x, 686.
- Pertz, G. H., obit., i, 640.
- Peru, statistics, government, trade, history, etc., in every volume but ii; war with Chili, see Ohilian War; claim against Ohili, x, 164; insurrections, x, 686, 687; proposal of protectorate over, 687; Grace-Aranibar contract, the, xii, 662.
- Peru, Chili, and the United States, vi, 733; vii, 810; termination of American treaties, x, 687.
- Perugia, illustration, ii, 678.
- Peruvian bark, ix, 89, 123; x, 99; cultivation of, in India, v, 387. See also Cinchona.
- Peshawer, fort of, in India, illustration, ii, 390.
- Pestilence in India, i, 404.
- Peter, Mrs. S., obit., ii, 586.
- Petermann, A., obit., iii, 660; theory of African rivers, 363.
- Peters, Adolf, obit., i, 640.
- Peters, Christian A. F., obit., v, 602.
- Peters, C. H. F., discoveries by, i, 46; ii, 44; iii, 36; iv, 51; v, 34; viii, 21; star-charts of, viii, 27.
- Peters, Theodore C., obit., i, 622.
- Petersburg, xi, 419; capture of, x, 428, 430.
- Petitot, explorations by, v, 297.
- Petralite, x, 343.
- Petrella, E., obit., ii, 608.

Petrie, H. Flinders, explorations of, x, 33.  
 Petrie, W. M. Flinders, invention by, iii, 275; ix, 19, 21; xi, 27, 28.  
 Petroleum, vii, 687; pipe-line transportation of, iii, 618; export of, 682; iv, 174; test, vii, 96; statistics, vii, 114; government monopoly in Greece, viii, 419; in Mexico, 537; in Ontario, 609; in Russia, ix, 705; x, 718; in Egypt, xi, 312; Russian, x, 718; xi, 312; in Argentine Republic, xii, 28; in Burmah, xii, 84; possible origin of, ix, 129. See Naphtha.  
 Petroleum lamps, causes of explosion of, x, 160.  
 Petry, invention by, x, 346.  
 Pettie, John, x, 364; xi, 345.  
 Pettingall, John Hancock, obit., 608.  
 Pettit, John, obit., ii, 586.  
 Pettitbled, invention by, ix, 736.  
 Peucker, Eduard von, sketch, i, 662.  
 Peyton, Bailie, obit., iii, 643.  
 Pfordten, O. F., experiments by, viii, 113.  
 Pfund, Dr., obit., i, 640.  
 Phacusa, x, 36.  
 Phanerogamia, ix, 95.  
 Phantom City in Central America, vii, 337.  
 Pharaoh's serpents, ix, 808.  
 Pharmacy, viii, 630; ix, 649; x, 638; xi, 753; xii, 664.  
 Phata-Hoteph, book by, vii, 260.  
 Phelps, A. H. L., obit., ix, 610.  
 Phelps, Elisha, obit., v, 595.  
 Phelps, John F., obit., iii, 643.  
 Phelps, John Smith, i, 566; obit., xi, 696.  
 Phelps, Philip, obit., i, 622.  
 Phelps, Royal, obit., ix, 611.  
 Phenol, ix, 129.  
 Philadelphia, statistics of, x, 635; recent growth of, xi, 180.  
 Philadelphia, ruins of ancient, ix, 28.  
 Philbrick, John Dudley, obit., xi, 696.  
 Philippia, xi, 189.  
 Philippine Islands, viii, 740; ix, 740.  
 Phillippi, engagement at, x, 554.  
 Phillippopolis, revolt in, x, 108.  
 Phillips, C. D. F., xii, 678.  
 Phillips, John Arthur, obit., xii, 636.  
 Phillips, John B., obit., ii, 586.  
 Phillips, Wendell, obit. and portrait, ix, 650.  
 Phipson, experiments by, vii, 88.  
 Phœnicians, relics of the, ix, 28.  
 Phœnix Park murders, the, vii, 366; viii, 414; trials for, 415.  
 Phoneidoscope, the, iii, 727.

Phonograph, the, ii, 633; illustrations, 633, 639.  
 Phosphate, xi, 806; discovery of, in Colombia, xii, 140.  
 Phosphorescence, of marine animals, x, 690.  
 Phosphoric acid, ix, 128; determination of, x, 157.  
 Phosphorus, production of, v, 88; new form, viii, 121.  
 Photo-Engraving, xii, 665.  
 Photography, improvements in, ii, 498; iii, 725; vi, 747; amateur, ix, 651; celestial, x, 49; ix, 52; x, 47, 49; xi, 51; xii, 35; in colors, ix, 122; illustrations, washing plates, xii, 655; xi, 741.  
 Photometer, meridian, xi, 52.  
 Photometry, new unit of light for, ii, 96; standards, vi, 96; stellar, xii, 43.  
 Photophone, the, v, 447.  
 Phthallic acid, v, 89.  
 Phuoc, Luh Vinh, leader of the Black Flags, x, 27, 31.  
 Phylloxera, vi, 670; ix, 345.  
 Physical training, methods of, xii, 665.  
 Physiology, recent, vi, 748; viii, 631; literature of, vi, 754; vii, 692; viii, 638; ix, 653; x, 639; xi, 754; xii, 668.  
 Piaggia, explorations by, ii, 330.  
 Piahte, Lake, x, 395.  
 Piallat, M., invention by, x, 578.  
 Pianista, the, x, 620; illustration, 621.  
 Piano, Major, xii, 2.  
 Piano, improvements in the, i, 517; x, 614; mécanique, x, 620.  
 Picard, L. J. E., obit., ii, 608.  
 Pichot, A., obit., ii, 608.  
 Pickering, Charles, obit., iii, 648.  
 Pickering, E. C., observations by, vi, 40; vii, 41; ix, 52; x, 53.  
 Pickering, W. H., xi, 51, 52, 53, 57.  
 Picknell, William L., xi, 347.  
 Picramine, x, 300.  
 Picric acid compounds, x, 346.  
 Pictet, Raoul, design of, for ships of war, vi, 246; apparatus for liquefying oxygen, with illustration, ii, 88; quoted, vii, 259; experiments by, ix, 434.  
 Pictures, exhibitions and sales of. See under Fine Arts.  
 Pierce, George F., obit., ix, 611.  
 Pierce, Lovick, obit., iv, 695.  
 Pierce, Thomas Prescott, obit., xii, 603.  
 Pierola, Nicholas de, iv, 728; made "supreme chief" of Peru, v, 625; his flight, vi, 737. See also Peru, Chili, and the United States.

Pierpont, John, sketch, vii, 698.  
 Pierre, P. J. G., obit., viii, 608.  
 Piers, new, iv, 844.  
 Pihahiroth, site of, ix, 19.  
 Pike, Austin F., obit., xi, 696.  
 Pillot, A. P., obit., v, 595.  
 Pillow, Gideon J., x, 428; obit., iii, 644.  
 Pillsbury, J. S., sketch, i, 558; portrait, ii, 524.  
 Piloty, Carl von, ix, 464; xii, 279; obit., xi, 724.  
 Pim, Bedford, obit., xi, 725.  
 Pinart, Zelia N., xi, 24, 46.  
 Pine-wood oil, vii, 634.  
 Pinheiro, Ljeut., invention by, iii, 725.  
 Pinkney, William, obit., viii, 593.  
 Pinoleum, vii, 94.  
 Pinsk Marshes, drainage of the, xi, 320.  
 Pinto, Don Annibal, i, 103; iii, 73.  
 Pinto, Serpa, explorations by, iv, 404; v, 298; sketch of, iv, 405.  
 Piombo, Sebastian del, x, 866.  
 Pipe-line, Suakim-Berber, ix, 816.  
 Piper-methysticum, xi, 291.  
 Piperonal, xi, 291.  
 Piracy at Foochow, i, 109, 847.  
 Piræus, excavations in the, x, 87.  
 Pirogoff, Dr., ix, 747.  
 Pirot, capture of, x, 731.  
 Pisciculture, viii, 791.  
 Pisebkhanu, King, ix, 19; city of, 20.  
 Pistorius, H. A., obit., ii, 609.  
 Pita, viii, 638; illustration, 639.  
 Pithom, identification of the city of, ix, 19; x, 35.  
 Pitkin, Frederick W., obit., xi, 696.  
 Pittman, Ben, ix, 246.  
 Pittsburg Landing, battle of. See Shiloh.  
 Pittsburg, recent growth of, xi, 180; illustration, ii, 682.  
 Pituri, vi, 755.  
 Pius IX, sketch, iii, 689; episcopal jubilee of, ii, 681; insult to the remains of, vi, 451, 792.  
 Placide, Thomas, obit., ii, 586.  
 Plague, the, iv, 728; vii, 286, 291.  
 Plains of Heaven, the, x, 896.  
 Planché, James R., obit., v, 602.  
 Planets, supposed intra-Mercurial, i, 45; iii, 83; viii, 20; ultra-Neptunian, v, 34; spectra of, xi, 54; discoveries of minor, see Astronomical Progress.  
 Planté, Gaston, invention by, vi, 254; experiments of, vii, 265; xii, 492.  
 Platinum, atomic weight of, vi, 98; wire, x, 576.

Platt, Thomas C., resignation of, vi, 644.  
 Plants, electrical phenomena in, i, 249; insectivorous; iv, 86; absorption of noxious substances by, vii, 98; anatomy and physiology of, ix, 92; respiration of, ix, 180; new, xii, 73.  
 Playfair, Sir Lyon, x, 46.  
 Pleiades, positions of stars in the, xii, 44.  
 Plener, Dr., on financial reform in Austria, v, 44.  
 Pleuro-pneumonia, xi, 434; in Chicago stock-yards, xii, 877.  
 Plevna, fall of, ii, 744; ix, 762.  
 Pleyte, M. W., x, 86.  
 Plimpton, J. L., ix, 786.  
 Plimpton and Graves, experiments by, viii, 118.  
 Plötz, Albert von, obit., i, 640.  
 Plover, in the United States, x, 889.  
 Plumb, Preston B., sketch, ii, 416.  
 Plumbing, ix, 716 *et seq.*; diagram, 718.  
 Plumer, William S., sketch, v, 626.  
 Plushes, ix, 788.  
 Pneumatic excavation, ii, 275.  
 Poggi, Count, obit., i, 640.  
 Pocock, Francis, death of, ii, 832.  
 Poe, Edgar A., memorial to, x, 867.  
 Poetsch, his method of mining, xi, 320.  
 Poetry, recent publications in. See Literature, in every volume.  
 Pogge, Paul, explorations of, i, 331; obit., ix, 620.  
 Poggendorff, J. C., obit., ii, 609; explorations, iii, 864.  
 Poindexter-Greenhow case, the, x, 268.  
 Point Pleasant, Ohio, Grant's birthplace at, illustration, x, 422.  
 Pointers, ix, 256.  
 Poisons, in food, clothing, etc., iv, 34; ix, 668; action of, xi, 763; xii, 678. See Arsenic.  
 Poland, change in administration, i, 711; demand for political rights, v, 666; plan to restore the Kingdom of, ix, 358; expulsion of foreigners from, x, 418.  
 Poland, Luke P., obit., xii, 608.  
 Polar bear, illustration, i, 327.  
 Polar Conference, third, vi, 325.  
 Polarization, vii, 265.  
 Polar regions, statistical tables, v, 626; expeditions to the, xii, 316. See Arctic Expeditions.  
 Polaris, the, ix, 33, 34.  
 Polding, Archbishop, obit., ii, 609.  
 Poles, conciliation of, viii, 708; xi, 889, 890.  
 Police power of States, ix, 429.  
 Policy, Indian, changes of, vi, 421.

Political Agitations, in Denmark, iv, 313; vi, 209, 210; in Portugal, vi, 760; in France, ii, 308; map of France, ii, 314; in Italy, see *Italia Irredenta*; in the United States, i, 719. See also under titles of countries.

Political assessments, vii, 151, 693. See also *Civil-Service Reform*.

Political cases in South Carolina, pardons, iv, 820.

Political crimes, by supposed Fenians, vi, 370. See *Assassinations*.

Political Economy, recent works on. See *Literature*, in every volume.

Political parties, English, viii, 412.

Political parties, United States, conventions of. See under names of States in each volume.

Polk, Trusten, obit., i, 622.

Polle, Dr., ix, 658.

Polo, description of, xii, 680.

Polygamy, in Utah, vi, 783, 859; ix, 219, 792; in Idaho, viii, 435, 812; law against, x, 764, 773; trials, ix, 792; act of Congress, xii, 168.

Polynesia. See *Australia and Polynesia*.

Polynesian race, the, ix, 277.

Polynias, the, vii, 332.

Pomare, Queen of the Society Islands, ii, 53; v, 40.

Pomare, King, v, 40.

Pompeii, celebration of its destruction, iv, 527.

Ponape Island, x, 139; ruined city in, 146.

Ponca Indians, the, removal of, iv, 653.

Ponchielli, Amilcari, obit., xi, 725.

Pondoland, x, 135; xi, 135.

Ponroy, P. G. A., sketch, i, 663.

Ponzi, Giuseppe, obit., x, 667.

Poole, R. S., x, 35.

Poor, work for the. See *Charities*.

Pope, Commodore John, obit., i, 622.

Pope, Gen. John, x, 401, 559, 560.

Popoff, Capt., x, 731.

Popow, Dr., ix, 654.

Popper, Julius, xii, 315.

Population, the center of, in the United States, with maps, vi, 755; movement of the center, map, 757; foreign, map, vi, 851.

Population, density and death-rate, iii, 723.

Porcelain, viii, 639; illustrations, 641, 642, 643.

Pork, prohibition of American, viii, 396, 643.

Porpoise-hunting, xii, 681.

Porro, expedition of, xi, 312, 455.

Port Gibson, battle at, x, 425.

Port Hamilton, taken by the British, x, 10, 14,

174; xi, 155; retroceded, xii, 118; abandoned, 811.

Port Hudson, surrender of, x, 426.

Port of Spain, destroyed by fire, ix, 803.

Porter, A. D., invention by, ii, 720.

Porter, Fitz-John, case of, iv, 49; in Congress, viii, 286; ix, 205; xi, 253.

Porter, James D., i, 745; ii, 710.

Portland, Maine, growth of, xi, 181; illustration, ii, 474.

Portland, Oregon, growth of, xii, 127.

Porto Rico, viii, 648; ix, 663; xi, 783; xii, 802.

Portraits, composite, iii, 726.

Ports, opened, in China, i, 119; ii, 103.

Portugal, sovereign, statistics, etc., in each volume; views in, i, 665; ii, 640, 641; improvement in finances, i, 664; liberal party, 665; ministerial crisis, De Avila cabinet formed, ii, 641; the Jesuits, iv, 628; tercenenaries of Camoens and Vasco de Gama, iv, 628; national debt, vi, 759; popular demonstrations against the government, vi, 760; vii, 697; colonies, viii, 650; x, 697; xi, 767; xii, 684; claims on the Congo, viii, 651; postal congress, x, 697; change of ministry, De Castro cabinet, xi, 767; dissolution of the Cortes, xii, 603; treaty with China, 117; attempt to establish a protectorate over Dahomey, xii, 684; claim of, to the lower Congo, x, 191.

Portuguese, the, in Africa, ix, 168; x, 394.

Posada Herrera, ix, 741; obit., x, 667.

Possibilists, the, ix, 344, 742.

Postage, review of legislation on, viii, 163; bill in Congress for reduction, viii, 185 review of reductions, viii, 188.

Postal Congress, x, 697.

Postal Dispatch, Pneumatic, ii, 497.

Postal Facilities, recent improvements in, xii, 684; distribution, 685; fast mail of 1875, 686; stamped special-request and letter-sheet envelopes, 686; postage, 686, 687; money-orders, postal notes, and postal savings-banks, 697; registration, 688; locks, letter-boxes, the silicate tablet, 688; mail-bags and boxes, canceling-machines, 689; postal union, 689; salaries of letter-carriers, 206.

Postal route, American, x, 61.

Postal Statistics, i, 240; iv, 836.

Potagos, explorations by, v, 292.

Potantin, G. N., explorations by, ii, 327; xii, 310.

Potassa, determination of, ii, 93; manufacture, viii, 115.

- Potassium, chlorate powders, x, 345; new processes for obtaining, xii, 107.
- Potel, invention of poteline, vii, 316.
- Potentite, x, 344.
- Pothuan, Louis, ii, 321.
- Potomac marshes, the, drainage recommended, v, 650.
- Pott, Angus Friedrich, obit., xii, 636.
- Potter, Clarkson N., sketch, vii, 697.
- Potter, Horatio, obit. and portrait, xii, 604.
- Potter, Robert B., obit., xii, 605.
- Pottery, Cincinnati, ix, 248.
- Pottinger, Mr., x, 1.
- Pouget, trial of, viii, 369.
- Poughkeepsie, recent growth of, xi, 181.
- Poujoulat, J. J. F., obit., v, 602.
- Poundmaker, x, 128.
- Poussin, Nicholas, sale of work of, x, 361.
- Powell, J. W., x, 402, 403.
- Powell, Thomas, obit., xii, 605.
- Power of Congress over witnesses, vii, 698; Kilbourne case, *ibid.*
- Powys, Bishop, obit., ii, 609.
- Poynter, Edward J., x, 364; xii, 277.
- Pozzolini, Gen. G., xi, 1, 455.
- Prado, Gen. Mariano Ignacio, iii, 686; sketch, iv, 732.
- Praga, Emilio, obit., i, 640.
- Prague, the Theinkirche in, illustration, ii, 380.
- Prat, metal discovered by, ii, 502.
- Prati, Giovanni, obit., ix, 620.
- Pratt, Daniel, obit., xii, 605.
- Pratt, Daniel D., obit., ii, 586.
- Pratt, James T., obit., xii, 606.
- Pratt Public Library, vii, 509.
- Prause, Dr., xii, 671.
- Pray, Ebenezer H., obit., i, 622.
- Prayer-Book, revision of the, ii, 24.
- Prazak, Dr. A., iv, 60.
- Predegram, A., obit., ii, 587.
- Preece, observations, viii, 526.
- Preller, Friedrich, obit., iii, 660.
- Prendergast, Gen., xi, 115.
- Prentiss, Mrs. E. P., obit., iii, 644.
- Presburg, illustration, ii, 57.
- Presbyterians, statistics, General Assembly reports, etc., in each volume; review of declarations on slavery since 1861, i, 670; charge of heterodoxy against Rev. D. J. MacDonell in Canadian church, i, 672; ii, 647; subject of union between different branches, i, 667; ii, 642; on the formula for admission of elders, ii, 647; iii, 698; on church and state in Scotland, ii, 648; iii, 699; viii, 660; x, 702; general council of the alliance, ii, 650; vii, 678; trial of Rev. J. M. See for admission of a woman to the pulpit, iii, 698; heresy of Rev. J. Miller, iii, 698; charges against Rev. W. C. McCune, 698; new basis of representation, 694; heresy of Rev. J. Robertson Smith, iii, 699; iv, 736; v, 634; revision of subordinate standards, iii, 699; heresy trial of Rev. David Macrae, iv, 737; subject of preaching by women, v, 630; on worldly amusements, iv, 734; v, 630; admission of a polygamist in India, v, 631; charges against missionaries at Blantyre, v, 633; vi, 768; vii, 706; case of Rev. W. L. MacFarlane on the authority of the Bible, vi, 769; alliance of India, 771; question of admitting a colored preacher to presbytery, vii, 702; restoration of fraternal relations between Northern and Southern assemblies, vii, 702; ix, 667, 668; question of instrumental music in churches, vii, 704; xi, 775; xii, 695; convention of opponents to it, viii, 656; memorial to United Presbyterian assembly on, 655; subject of union between the Cumberland and Lutheran churches, viii, 658; question of modifying the creed in England, 660; Sabbath observance, vii, 706; ix, 667; proposed monument to Calvin in Washington, ix, 667; validity of baptism in the Roman Catholic Church, x, 698; quarter-centennial of the Southern church, xi, 769; heresy of Dr. Woodrow concerning evolution, xi, 769; case of Dr. Muir, xi, 774; question of marriage with a deceased wife's sister, xii, 698, 698; preparations for the centennial celebration of the Southern church in 1888, xii, 694; Waldensian Church of Italy, vi, 771; Walloon churches, vii, 709.
- Presbyterian Alliance, the, ii, 650; ix, 678.
- Prescott, Benjamin F., ii, 545; iii, 602.
- Presidency of Mexico, three claimants to, ii, 512.
- President of the United States, proposed amendments on the election and length of term of, i, 132-138, 158-166; salary of the, i, 171; third term of, i, 167; executive acts, where performed, i, 169; election of, see Elections, Presidential; messages of, see Congress.
- Presidential electors, vii, 147.
- Presidential Inability, vi, 414.
- Presidential succession, the, xi, 229.
- Presidents, absences of, from Washington, i, 169-171.



Press, the suppression of newspapers, i, 709; laws in France, ii, 304-308; trial of Cassagnac, 305; colportage bill, iii, 343; amnesty for offenses of, 343, 344; bill on, vi, 311; in India, restrictions on, iii, 33; the native, 435; laws in Japan, iii, 462; silenced in Ecuador, iii, 261; censorship of, in Prussia, ix, 708; associations, xi, 635.

Prestan, Pedro, xi, 44.

Preston, David, obit., xii, 606.

Preston, John, obit., xii, 606.

Preston, John S., sketch, vi, 771.

Preston, Rachel D., xi, 2.

Preston, Seephaniah, obit., ii, 587.

Preston, William, obit., xii, 606.

Pretenders, French, bill to exile, viii, 366; xi, 355.

Pretoria, treaty of, ix, 111.

Price, Roger, in Africa, iii, 362.

Price, Sterling, x, 423.

Prime, E. G., x, 704.

Prime, Rufus, obit., x, 654.

Prime, Samuel Irenæus, obit., x, 703.

Prime meridian conference, ix, 54, 777.

Primogeniture, law of, x, 521.

Prince Edward Island, viii, 660; x, 704; plans to establish communication with, 704.

Princes, expulsion of, from France, xi, 355.

Princeteau, Gen., obit., i, 641.

Princeton Telescope, vii, 41.

Pringsheim, theory of, vi, 111; experiments of, ix, 93.

Printing, improvements in, i, 518; vi, 548.

Prior, Thomas Abiel, obit., xi, 725.

Priscilla, the yacht, x, 791.

Prisons, in New York, i, 597, 605; Maryland, ii, 478; Massachusetts, ii, 482; vi, 537; Kentucky, iv, 539; Texas, iv, 831; California, vi, 82; viii, 78; reformatories in Michigan, vii, 554; at Louvain, viii, 497; contract system, iv, 600, 653, 665; the separate system, vii, 675; English system, viii, 403; associations and congresses, xii, 704; reform, 701; United States Government, 704. See also Convict Labor.

Prisons, Southern, during the civil war, i, 184-192.

Pritchard, Rev. Charles, xi, 52, 57.

Pritchett, observations by, iv, 52.

Prizes, astronomical. See under Astronomy, in each volume.

Prjevalsky, Col., explorations of, in Asia, ii, 326; iii, 359, 360; v, 289; ix, 348; x, 397; xi, 376; xii, 309.

Proa, ix, 115.

Probasco, Henry, sale of his collection of pictures, xii, 280.

Proctor, Redfield, iii, 815, 816.

Prohibition, viii, 661; by statute, 664; by constitutional amendment, 666; license, 663, 668; effects of enforcements, 668; constitutionality, 669; arguments for, 670; in Iowa, ix, 411, 429; x, 499; xii, 393; in parts of Georgia, x, 410; in Maine, ix, 463; xii, 453; in Kansas, xii, 406; in Kentucky, 411; in Michigan, 506; in Missouri, 516; in Rhode Island, 713; in Tennessee, 758; National Convention, ix, 774; x, 499.

Prohibition Reform party, i, 780; ix, 774.

Prokesch-Osten, sketch, i, 675.

Propaganda Fide, congregation of, seizure of property of, viii, 692; ix, 699.

Propeller-screws, construction of, illustration, xii, 655.

Property Rights of Foreigners in Mexico, viii, 538; great estates in, viii, 538.

Prophetic Conference, xii, 705.

Protais, Alexandre Paul, xii, 275.

Protection in Germany, iv, 485; x, 415; in France, v, 284; in Mexico, v, 14; in Canada, vi, 217; Speaker Carlisle on, viii, 94. See Duties and Tariff.

Proteids, sources of the, ii, 94.

Protestant Episcopal Church, statistics, reports of boards and societies, conventions, etc., in each volume; subject of establishing brotherhoods and sisterhoods, ii, 652; canon on deaconesses, v, 638; question of free churches, 638; committee on "liturgical enrichment" of the Prayer-Book, vi, 772; work among Indians, x, 705; among the Jews, xii, 707; church reunion, xi, 778; xii, 707.

Proteus, the destruction of, viii, 421; ix, 36.

Prout, hypothesis of, vi, 42.

Prout, Skinner, obit., i, 641.

Provisions, commerce in, iv, 167.

Prussia, statistics, ministry, legislative proceedings, etc., under Prussia in each of the first six volumes; in the last six under Germany; views in, i, 679; ii, 655, 657, 658; sources of revenue, i, 678; Catholic dissatisfaction, 679; bill for the purchase of railroads, 679, 680; resignation of Delbrück, 680; incorporation of the Duchy of Lauenburg, 680; new constitution of the state church, 680; bill for the administration of Catholic Church property passed, 680; bill passed making German the official language in Poland, 680;

- deposition of Catholic bishops in Münster and Cologne, 680; result of ministerial crisis, ii, 657; violent discussions, 658; conflict between the Government and the Catholic Church, 659; cabinet resignations, iii, 705; laws relating to religious orders and congregations, 706; resignations of liberal and appointment of conservative ministers, iv, 740; sketches of Robert Victor Puttkammer, Robert Lucius, and K. H. Bitter, 740; retirement of the minister of justice, 740; sketch of Dr. Heinrich Friedberg, 740; railroad bill passed, 742; general synod, 742; debates on the conflict of church and state, v, 689; vi, 775; Prof. Virchow's views, v, 640; violent debate on the Jewish question, 640; anti-Semitic movement, 640; vi, 776; negotiations with Rome, vi, 775; bill for remission of taxes, 775; ministerial changes, 776; railroads bought by the Government, 776.
- Prussia, General Synod of, iv, 742.
- Prussian and German Governments, antagonism between, iii, 378.
- Prussian State Council instituted, ix, 356.
- Prugn, Robert H., obit., vii, 642.
- Psammetichus, King, ix, 20; inscription of, x, 35.
- Psychical research societies, xii, 509.
- Ptilolite, xi, 139.
- Ptolemy II, building founded by, x, 85.
- Ptolemy V, coin of the time of, x, 33.
- Ptolemy Philadelphus, stela of, ix, 20.
- Ptomaines, discovery of, vii, 94; ix, 663; x, 299.
- Ptoom, Mount, discovery at, x, 37.
- Public Documents, in first six volumes.
- Public lands, ix, 215; unlawful occupancy of, x, 241, 244.
- Public Meetings, bills on, in France, v, 283.
- Pucido, x, 776.
- Pueblo Indians, the, xii, 545.
- Pueblos, the, ix, 17.
- Pug-dogs, ix, 263.
- Puga, Dr., x, 687.
- Pugh, George E., sketch, i, 691.
- Pulgar, Gen. V., x, 776.
- Pul-i-Khisti, x, 9; battle of, 10.
- Pumpelly, Raphael, x, 404.
- Puna, the, ix, 543.
- Pundit, A— K—, the, explorations of, x, 396.
- Puroell, J. B., sketch, viii, 672; vii, 726. See Bishops, Liability of, etc.
- Purdue University, illustration, i, 407.
- Puritan, the yacht, x, 791.
- Purdy, Alfred S., obit., xi, 697.
- Pusey, Edward B., sketch and portrait, vii, 711.
- Putjata, Capt., explorations by, ix, 349.
- Putnam, F. W., xii, 16.
- Putnam, George, obit., iii, 644.
- Putnam, John P., obit., vii, 642.
- Puttkammer, Robert Victor, sketch, iv, 740.
- Pütz, W., obit., ii, 609.
- Pylorus, resection of the, ix, 748.
- Pyramid, in Mexico, viii, 536.
- Pyramids, the Egyptian, vii, 258; opening of, 260; of Senefru, 262; ix, 21; opening of, vii, 260; illustrations: section of the great, iii, 266; the great, vii, 258; of Meydoun, vii, 262; measurements of the great, ix, 21; tools used for, 21; traces of an attempt to destroy, 21.
- Pyrenees, orography of the, xii, 313.
- Pyronome, x, 345.
- Quackenbush, J. V. P., obit., i, 622.
- Quail, in the United States, x, 389.
- Quain, Sir John, obit., i, 641.
- Quarantine rules, v, 12.
- Quartley, Arthur, obit., xi, 697.
- Quartzite, in Dakota, xii, 219.
- Quebec, Province of, viii, 674; political controversy in, iv, 319; ix, 676; x, 706; small-pox in, 706; xi, 778; inundations, 778; opposition to the conservative government of the Dominion, 779; labor movement, 779; xii, 707; railway policy, 708; incorporation of the Jesuits, 708.
- Quebec, city of, its recent growth, xii, 127; illustration, ii, 254.
- Quebracho, ix, 272.
- Queensland, ix, 60; x, 65; xi, 64; xii, 47; gold discoveries in, xi, 64.
- Quetta, district of, ix, 6; railway, 6; x, 12.
- Quicksilver-Mines of Siena, viii, 528.
- Quincy, Edmund, obit., ii, 587.
- Quincy, Ill., recent growth of, xii, 127.
- Quinine, new preparation of, x, 299; substitute for, 300.
- Quinn, William, obit., xii, 606.
- Quinoline, x, 300.
- Quirigna, ruins of, xi, 24.
- Quito, bank of, its failure, x, 302.
- Race, George W., obit., vi, 687.
- Races, conflicts of, in Austria, vii, 47, 53.
- Rachout, Henry, xii, 276.
- Racine, recent growth of, xii, 128.
- Rackarock, new explosive, x, 346.

Radan, M., x, 54.  
 Radde, Dr. G. J., xii, 307.  
 Radetzki, Gen., sketch, ii, 671.  
 Radiation, terrestrial, xii, 488.  
 Radick Islands, x, 88.  
 Radiophony, vi, 787.  
 Radomir, capture of, x, 729.  
 Raff, Joachim, obit., vii, 647.  
 Raffray, explorations by, iii, 365; iv, 411.  
 Raft, great lumber, ii, 257.  
 Rahway, bankruptcy, iv, 669.  
 Raikes, Robert, v, 674.  
 Railroad Land Grants, i, 692.  
 Railroad riots. See Labor Strikes and Riots.  
 Railroad transportation, xii, 258.  
 Rails in the United States, x, 389.  
 Railways of the United States, vii, 712; statistics, v, 242; viii, 336; Northern Pacific, vi, 180; viii, 618; completion, viii, 781; Southern Pacific, iii, 571; vi, 518; Transcontinental, viii, 316; famous fights between, iv, 158, 159; war of rates, vii, 560; suits on, ii, 754; vii, 456, 464; priority of liens, iv, 842, effect of freight rates in Vermont, iv, 840; memorial on, from Vermont Grange, iv, 841; board to supervise, iv, 601, 602; anti-Monopoly League, vi, 652; decision on taxation of, viii, 341; in California, ix, 103; in Montana, 536; validity of bonds in aid of, iii, 580; v, 309; ix, 42, 48; interstate commerce bill, vi, 172; reductions on freight, viii, 152; N. Y. commission act, vii, 600; business in 1884, ix, 328; land grants to, ix, 214; litigation in Pennsylvania, xi, 746; investigation, Pacific, xii, 193; interstate commerce act, 269. See also Finances and Financial Review, and Railway Service in the United States.  
 Railways, Elevated, iii, 284; Vienna circular, vi, 247; bill on taxes of New York, vii, 600; investigation of charges, 602; case of Judge Westbrook, 602, 603; decision on damages to property by, 616; five-cent fare bill, ix, 147; law of accidents, xi, 179; cable, xi, 122.  
 Railways, government control of, in Germany, i, 344, 679; ii, 362; iv, 441, 742; vii, 349; viii, 391, 394; in Italy, i, 418; in Hungary, viii, 40; in Denmark, vi, 209; Danube and Turkish, viii, 43; first in China, i, 111; ii, 102; closed in China, vi, 107; Indian, vii, 414; trans-Caspian, xi, 375; xii, 6; trans-Siberian, xi, 375; new system of mountain, vi, 246; trans-Andean, iii, 20, 291; Hima-

layan, vii, 284; proposed Sahara, iv, 27; v, 293; Euphrates, viii, 306; in Australia, v, 88, 40; vii, 42; x, 327; in Persia, vi, 732; in New Zealand, vii, 46; in South America, iii, 63, 677; v, 59, 65; vii, 682; viii, 66; xi, 752; in Central America, iii, 417; iv, 460; v, 199; Canada Pacific, v, 214, 221; vii, 217; viii, 87; ix, 268; completion of Canadian Pacific, x, 104, 133, 327; in Mexico, xi, 556; xii, 502, 503; Tehuantepec ship, xii, 502; State regulation of, law on, xii, 467-470.  
 Railways, Improvements in, engines, ii, 494, 496; brakes, ii, 496; signals and speed indicators, i, 252, 516; car-wheels, i, 516; bridges, v, 242, 244; improvements, vi, 544; American engines and cars, iv, 188; constant-circuit rail system, iv, 602; plan for a ship, iv, 345; narrow-gauge, iii, 279; L'Artigue's single railway, with illustration, xi, 320; screw-propeller, xi, 742; mountain, see Mountain Railways.  
 Railways, electric, viii, 675; illustrations, 676, 678, 680.  
 Railway service of the United States, ix, 677; diagrams showing increase of, 677, 678; table comparing the railways of the United States and Europe, 680; freights, 683.  
 Rainfall, annual, of United States, with map, viii, 528; affected by forests, 351; xi, 545; extent of, 542; observations of, in the Carnatic, xii, 490; connected with sun-spots, 490; in Italy, 491.  
 Rains, Gabriel J., sketch, vi, 788.  
 Rajah of Pooree, trial of, iii, 438.  
 Ralston's cotton-cleaner, vi, 265.  
 Rameau, Septimus, obit., i, 641.  
 Ramée, Daniel, obit., xii, 686.  
 Rameses II, statue of, ix, 20; wars of, 28; his mummy, xi, 29; illustration, 30; xii, 18.  
 Rameses III, sphinx bearing the name of, x, 20; xi, 80; xii, 18; his mummy, xi, 29.  
 Rampolla, Cardinal, xii, 399.  
 Ramsay, Prof., theory of, vi, 350.  
 Ramses, city of, x, 35.  
 Ramsey, Alexander, sketch, iv, 834.  
 Ranavalena II, Queen of Madagascar, death of, viii, 507; ix, 460.  
 Randall, Alanson Merwin, obit., xii, 607.  
 Randall, David Austin, obit., xi, 697.  
 Randall, R. R., statue of, x, 361.  
 Randall, Samuel J., sketches, i, 692; iv, 748; portrait, iv, 193.  
 Randi, Lorenzo, obit., xii, 636.  
 Randolph, Thomas F., obit., viii, 593.

Ranke, Ferdinand, obit., i, 641.  
 Ranke, Leopold von, sketch and portrait, xi, 788.  
 Ranvier, experiments by, vi, 753; viii, 60.  
 Raon incident, the, xii, 327.  
 Raouf Pasha, x, 817.  
 Raoult, researches by, vi, 100; x, 152.  
 Rapa Nui. See Easter Island.  
 Rapallo, Charles Anthony, obit., xii, 607.  
 Raphael, sale of works of, x, 860, 866.  
 Rapiëff, invention by, iii, 271.  
 Rarefied air, effects of, ix, 541-545.  
 Ras Aloula, victory by, x, 819; xii, 2  
 Raschid Bey, x, 817.  
 Raske, Dr., experiments by, xii, 671.  
 Raspail, François Vincent, obit., iii, 660.  
 Rassam, Hormuzd, discoveries by, vi, 22; vii, 263; ix, 18; xi, 25; xii, 17.  
 Ratazzi, Madame, xii, 294.  
 Rathbone, Justus H., x, 518.  
 Ratib Pasha, defeat of, xi, 507.  
 Rau, Charles, obit., xii, 607.  
 Rau, Heribert, obit., i, 641.  
 Raumer, Rudolf von, obit., i, 641.  
 Ravensworth, obit., iii, 660.  
 Rawlins, John A., obit., i, 622.  
 Rawlinson, Sir Henry, ix, 18; x, 38, 39.  
 Rawson, George W., obit., ii, 587.  
 Rawul Pindi, durbar held at, x, 12.  
 Ray, C. S., experiments by, vi, 748, 751.  
 Ray, P. H., expedition, vi, 325.  
 Ray-Lankester, x, 150.  
 Rayleigh, Lord, ix, 45.  
 Raymond, battle at, x, 425.  
 Raymond, John H., obit., iii, 644.  
 Raynal, David, viii, 357, 367.  
 Rayner, Joseph, ix, 651.  
 Reynolds, Capt. W. F., x, 401.  
 Read, Sophia H., obit., v, 595.  
 Reade, Charles, obit. and portrait, ix, 687.  
 Reading, growth of, in recent years, xi, 181.  
 Real estate, holding of, by foreigners, in Illinois, xii, 375.  
 Reay, Baron, obit., i, 641.  
 Rebellion, war of the, collection of tax for expenses of conducting, iv, 429.  
 Recidivists, ix, 57; law, x, 878, 842.  
 Reciprocity treaties: congressional action, x, 238; between Mexico and United States, viii, 585; of 1854, xii, 281.  
 Reconstruction. See President's messages, i 681; ii, 660, 662.  
 Record of the turf, xii, 767.  
 Red Cross societies, and the laws of war, vii,

715; xi, 783; twentieth anniversary celebrated, xi, 785.  
 Red light, the, viii, 525; connection with sun-color, *ibid.*; theories on, 526; ix, 53; x, 48, 581; xi, 54; fading out of, xi, 546.  
 Red men, the, iv, 846.  
 Red Prince, the, x, 882.  
 Red Sea coast annexed to Egypt, v, 235; trade of, ix, 418; European settlements, ix, 339.  
 Red Sea expedition, the, x, 504-506.  
 Red Sunsets. See Red Light.  
 Redfield, Heman J., obit., ii, 587.  
 Redfield, Isaac F., sketch, i, 692.  
 Redgrave, Samuel, obit., i, 641.  
 Red-gum tree, the, viii, 545.  
 Redistricting in Connecticut, vi, 198; in New York, viii, 569; in Pennsylvania, viii, 624.  
 Redtenbacher, F., invention by, xi, 140.  
 Reed, Joseph, obit., ii, 587.  
 Reed, Myron W., xi, 198.  
 Reed, William B., obit., i, 622.  
 Reese, J., fusion-disk of, vi, 313.  
 Reflection and refraction, illustration, xi, 569.  
 Reflectors, new method of mounting, ix, 47.  
 Reform in the Civil Service, viii, 682; examinations, 684; New York Board, 686; classes of the service, 686; rules, 688; subjects, 688, 689; ix, 226, 690.  
 Reformed Church in France, threatened schism in, i, 695.  
 Reformed Churches, statistics, reports of synods, classes, etc., in every volume but vi; decision in regard to the right of a church to its property after breaking connection with the denomination, i, 694; establishment of Southern congregation, 695; dissensions between orthodox and liberal sections in France, 695, 696; confirmation of the old declaration of faith in Holland, 696; Dutch Church in South Africa, ii, 672; case of Rev. Dr. A. Blauvelt, 671; quarto-millennial anniversary in New York, iii, 720; confession of faith, iv, 749, 750; general council of churches holding the Presbyterian system, v, 652; subject of Masonry and other secret societies, vii, 716; viii, 681; disapproval of the action of congress on Chinese immigration, vii, 718; of the creed, 719; form for baptism, viii, 68; plan for conspectus of church legislation of the last three centuries, ix, 689; liturgy adopted, 689; x, 708; xii, 710; confederation of churches in Germany, ix, 689; mission at Tokio, x, 708; the revised version of the Bible, xi, 787; commi-

- sioners to Presbyterian missions in India, xi, 787; subject of union with the Presbyterian Church, xii, 709; researches among documents and memoranda relating to the church history in Holland, 709; question of the status of a church in Cayuga, 709; differences in doctrine among the churches of Germany, 711.
- Reformed Episcopal Church, i, 696; ii, 678; iii, 721; iv, 750; viii, 682; peculiar tenets of, i, 697; first church in England of, iii, 721; admission to Anglican pulpits of clergymen of, iv, 80; x, 708; centennial celebration of the adoption of the American Episcopal Prayer-Book, 709; establishment of a theological seminary in Philadelphia, 709; xii, 711; comparison of statistics of 1885 and 1887, 711; endowment-fund of the seminary, 711; eleventh council, 712; subjects of marriage and divorce, and temperance, 712; general synod of Great Britain and Ireland, 712.
- Reforms, proposed in Russia, vi, 799; in Germany, vii, 353; acts in Victoria, vi, 45; electoral, in Brazil, vi, 71; proposed electoral, in Great Britain, iv, 454.
- Refraction and reflection, illustration, xi, 569.
- Refunding the national debt, history of, iv, 751.
- Regel, explorations by, ix, 349.
- Regicides, attempted, iii, 292, 298, 379-381, 458.
- Registration of letters, xii, 688.
- Registration of voters, x, 321; laws for, xii, 246.
- Regnaud, M., ix, 662.
- Regnault, H. V., obit., iii, 660.
- Rehn, F. K. M., xi, 346.
- Reichard, Paul, x, 393-394.
- Reichert, Dr., experiments, vii, 690; xii, 679.
- Reichlin-Meldegg, Freiherr von, obit., ii, 609.
- Reichstag, the. See Parliament, the German, and Germany.
- Reid, Sir James, obit., i, 641.
- Reid, Mayne, obit., viii, 603.
- Reinhart, Karl A., obit., ii, 609.
- Reinsberg, Baron. See Düringsfeld, i, 238.
- Reinsdorf, Frederick A., ix, 358.
- Reinsch, H., x, 155.
- Reischach, Hermann A., obit., i, 641.
- Reiset, experiments by, viii, 120.
- Reith, Mr., xii, 483.
- Reitschel, statue by, x, 361.
- Religion, intolerance in the Tyrol, i, 59; iv, 67; v, 45; in Belgium, i, 71; v, 53, 54; in Bohemia, iv, 351; in China, i, 110; iii, 101; v, 690; in Corea, iii, 738; in Spain, i, 705, 729, 731; in Turkey, i, 261, 709, 759; v, 685; secularizing measures in Brazil, iii, 63; military honors refused at funerals where religious services are forbidden, i, 318; public aid to sects, i, 133, 138, 172-180, 261, 597; Department of Worship in France, vi, 305; intervention in cases of, vii, 627; legislation in Russia, viii, 708; coercion in Russia, ix, 710; Protestants in Egypt, ii, 284; Christians in India, iv, 495; New Hampshire amendment on, i, 591; persecution of Jews, see Jews; of Mussulmans, iii, 795; in Germany, ix, 356, 361; xi, 390; in Japan, ix, 419. See also Churches and Education.
- Religion, recent works on. See Literature, in every volume.
- Religion, Society for the Liberation of, from State Control, iv, 34; v, 17; vi, 14; viii, 9; ix, 11; x, 22; xi, 17; xii, 13.
- Religious Orders, expelled from France, v, 658; proposal to settle, in Spain, v, 673.
- Rembrandt, pictures by, x, 366; xi, 346.
- Remsen, I., experiments by, vi, 99; viii, 121.
- Renard-Krebs balloon, the, illustration, ix, 72.
- Renfro, impeachment of, iv, 428.
- Renier, Charles A., obit., x, 667.
- Renouf, Émile, pictures by, x, 367; xi, 346.
- Renouf, P. le Page, researches by, vii, 256; xi, 32.
- Repeater watch, x, 610.
- Representation, demand in Japan for popular, iii, 462, 463.
- Representation in the United States, xii, 245.
- Representatives, apportionment of, vii, 142; "Alabama paradox," 143.
- Reprive, extraordinary case of, iii, 818.
- Reproduction, xi, 763.
- Repsolds, the, of Hamburg, ix, 47.
- Reptile fund, the, and reptile press, vii, 358.
- Republican party in Norway, vii, 771.
- Republican party, divisions of, in New Jersey, vii, 605, 610; policy of, x, 433.
- "Rescue and retire" policy, of Gladstone, ix, 372.
- Researches and experiments, iii, 722.
- Resin, separation of, x, 155.
- Resonant Alloys, i, 522.
- Resorcin, ix, 272.
- Respiration, xi, 759; xii, 675.
- Resumption of specie payments, iv, 763.
- Retorts, platinum, i, 94.
- Retriever, the wavy-coated, ix, 257.

- Returning Boards. See Electoral Commission.
- Reuleaux, Prof., experiments in cinematics, i, 515.
- Reunion of Protestant Christendom, action in reference to, xii, 707-710.
- Reuter, Baron Jules, xi, 636.
- Reveillère, Capt., xi, 378.
- Revenue and Tariff, viii, 193.
- Revenue Chart (U. S.), colored plate, ix, 784.
- Revenue-Cutter Service, vii, 584.
- Revenue districts, changes, viii, 780.
- Revillon, Tony, ix, 344; x, 378.
- Revillout, Eugene, researches of, vii, 262; x, 35.
- Revolutionary War, claim of Georgia for money expended in, viii, 387; committee on claims, vii, 186.
- Revolutionary plots in Russia, xii, 723; effect of, upon education, 724.
- Revolutions. See Wars, etc.
- Rey, Paul, explorations by, vi, 330.
- Reykjavik, college at, iv, 314.
- Reynier, Emile, invention by, iii, 272; vii, 269.
- Reynolds, Emerson, experiments by, iii, 98; v, 86.
- Reynolds, Gen. John F., statue of, x, 362.
- Reynolds, Sir Joshua, exhibition of his pictures, x, 359, 360; sale, 361.
- Rgesholarsky, M., ix, 478.
- Rhallis, George, obit., viii, 603.
- Rhamsis, ix, 599.
- Rhett, Robert Barnwell, sketch, i, 698.
- Rhode Island, statistics, State officers, legislative proceedings, political movements, etc., in each volume; views in, i, 701; ii, 675; amendments to the constitution, i, 699; xi, 787; property exempt from taxation, 699; election of Governor Lippitt by the Legislature, 701; re-election of Senator Anthony, 701; census returns, 702; registration law, ii, 674; act regarding married women's property, 674; election of Governor Van Zandt, 675; re-election, iv, 770; act limiting indebtedness of towns and cities, iii, 728; to protect children, 728; decision in reference to a husband's right to vote in virtue of his wife's property, 732; nature of property qualification, iv, 771; question of abolishing the tribal authority of the Narragansetts, 772; act amending the statute relating to the constitution and organization of the General Assembly, vi, 789; election of Governor Littlefield, v, 654; re-election, vi, 790; vii, 721; election of Senator Aldrich, vi, 791; re-election, xi, 787; invitation to represent-
- atives of France, 790; divorce in, viii, 691; ix, 698; election of Governor Bourn, viii, 692; re-election, ix, 698; colonial town records, ix, 698; State boundary uncertain, x, 710; population, 710; election of Governor Wetmore, 710; election of Governor Davis, xii, 714; working of the prohibitory amendment, xi, 788; xii, 712.
- Rhodes, Mr., in South Africa, x, 86.
- Rhodes, R. S., audiphone invented by, iv, 54.
- Riaz Pasha, vi, 237.
- Ribblesdale, Baron, obit., i, 641.
- Ricasoli, Baron, on the Roman question, vii, 628; obit., v., 602.
- Ricco, A., observations by, xi, 546; viii, 22; xi, 546.
- Rice, opposition to culture of, v, 483; production in the United States, vii, 722.
- Rice, N. L., obit., ii, 587.
- Rice Strait, ix, 36.
- Richart, Laurent, picture collection of, xi, 344.
- Richards, Alfred B., obit., i, 641.
- Richards, Ellen S., experiments by, ii, 502.
- Richards, Windsor, experiments by, v, 208.
- Richardson, Edmund, sketch, xi, 697.
- Richardson, Henry H., obit., xi, 698.
- Richmond, recent growth of, xi, 182; the advance to, x, 557 *et seq.*
- Richmond, Duke of, x, 450.
- Richmond, George, xi, 345.
- Richmond, W. B., x, 365; xii, 277.
- Richter, Adrian L., obit., ix, 621.
- Richter, Eugene, speech by, vi, 346.
- Richter, Hermann E., obit., i, 641.
- Richards, Charles H., his picture collection, xii, 277.
- Ricketts, James Brewerton, obit., xii, 608.
- Riddell, J. L., ix, 507.
- Ridderhold, Hans, obit., i, 641.
- Rider, James, obit., i, 623.
- Ridgeway, Col., x, 5, 8, 12.
- Ridsdale, Rev. Mr., ii, 18 *et seq.*
- Riecke, F. J. P., obit., i, 641.
- Riedeck, E., expedition of, viii, 386.
- Riel, Louis, x, 124, 129; obit. and portrait, 711; sympathy for, 707, 713.
- Rifle-match at Wimbledon, viii, 418.
- Rifles, the Martini-Henry, Winchester, Berdan, and Soper, ii, 623, 624; illustrations, 623, 624; repeating, xii, 714.
- Rights of married women, in Alabama, xii, 8; in Pennsylvania, 656. See Women.
- Riley, Henry Chauncey, iv, 611.
- Riley, James, x, 579.

- Rimbaud, M., xii, 304.
- Ringer, Sidney, experiments by, vii, 691; viii, 633; ix, 661; x, 698; xii, 675.
- Rio Grande, troubles on the, ii, 712; iii, 555.
- Rion, James H., obit., xi, 698.
- Riots, in Mississippi, ii, 528; in Colorado, v, 120; in Arkansas, vi, 31; in Kentucky, vii, 453; in New York in 1863, xi, 800; in Canton, viii, 128; in Cincinnati, ix, 630; in Belfast, xi, 403; in Amsterdam, xi, 607; in Belgium, xi, 81; xii, 66; in Austria, xii, 53; in Peru, xii, 661; anti-Christian, in China, xii, 117; railroad, xi, 341; religious, xi, 438. See Labor-Strikes.
- Ripley, George, sketch, v, 657.
- Ripley, Roswell Sabin, obit., xii, 608.
- Ripon, Marquis of, Viceroy of India, v, 384; his policy, vii, 416; his administration, x, 794.
- Ritchie, John, ix, 54; x, 55.
- Ritschl, Friedrich, sketch, i, 702.
- Ritter, invention by, vi, 254.
- Ritualism, in the Anglican Church, i, 25; the confessional, ii, 17, 21; vestments, ii, 18, 19; controversy, vi, 15; trials for, iv, 31, 32, 33; vii, 14, 17; viii, 6; ix, 10, 11.
- River and Harbor bill, vii, 148.
- Rivers, fluctuations of, iv, 805; channel improvements in, v, 273; devices to prevent shifting of channels, v, 249.
- Rivers, African, singular rise of, iv, 406; other phenomena of, iv, 407.
- Rivers, the longest eight in the world, xii, 316.
- Rivière, Briton, x, 859, 865; xii, 277.
- Rivière, Henri, obit., viii, 604.
- Riza Bey, mission of, xii, 79.
- Roach, John, x, 760; sketch and portrait, xii, 716.
- Robecchi, L., xii, 304.
- Robber bands in Missouri, vii, 567.
- Robbins, Chandler, obit., vii, 642.
- Roberts, Arthur, obit., xi, 725.
- Roberts, C., experiments by, viii, 524.
- Roberts, Sir Frederick, v, 6; vi, 87; x, 13; xii, 82. See Afghan War.
- Roberts, Isaac, xi, 51.
- Roberts, John J., obit., i, 642.
- Roberts, Marshall O., sketch, v, 658.
- Roberts, Oram M., sketch, iii, 786, 787.
- Roberts, Solomon W., obit., vii, 642.
- Roberts, W. Chandler, xi, 536.
- Robertson, Charles Franklin, obit., xi, 698.
- Robertson, John, obit., xii, 609.
- Robertson, James B., obit., ii, 609.
- Robertson, W. H., appointment of, vi, 644.
- Robiano, Eugene de, vii, 99.
- Robie, Frederick, sketch, vii, 498.
- Robilant, Count, xii, 397.
- Robinson, Dr., ix, 27.
- Robinson, George D., ix, 471; x, 573.
- Robinson, Sir Hercules G. R., sketch, v, 79; x, 87, 88, 134, 419; xii, 258.
- Robinson, John, proposed monument to, ii, 132.
- Robinson, James Lowrie, iv, 690.
- Robinson, Lucius, sketch, i, 606.
- Robinson, W. C. F., ix, 60.
- Robinson, William S., obit., i, 623.
- Rob Roy, the canoe, illustration, ix, 108.
- Robson, Benjamin R., obit., iii, 644.
- Roca, Gen. Jules A., inaugural of, v, 22; x, 39.
- Rochester, N. Y., recent growth of, xi, 182; view in, ii, 570.
- Rochester, Thomas Fortescue, obit., xii, 609.
- Roche-grosse, Georges, x, 363; xi, 343; xii, 276.
- Rock-out tombs of Sidon, xii, 24.
- Rock-salt beds, discovery of, in Ontario, xii, 726.
- Rodgers, O. R. P., ix, 54.
- Rodgers, Rear-Admiral John, sketch, vii, 722; x, 265.
- Rodgers expedition, the, vi, 323; viii, 162.
- Rodgers, Raymond P., vii, 107.
- Rodney, George B., obit., viii, 598.
- Rodney, John, obit., xi, 698.
- Rodrigues, J. C., x, 178.
- Roebling, John A., viii, 311, 318.
- Roebling, Washington A., viii, 318.
- Rogers, micrometer-telescope of, i, 554.
- Rogers, David L., obit., ii, 587.
- Rogers, Fairman, collection of, xi, 347.
- Rogers, Ferdinand, obit., i, 623.
- Rogers, John, x, 362.
- Rogers, Henry, obit., ii, 609.
- Rogers Bey, obit., ix, 621.
- Rogier, C., obit., x, 661.
- Rogozinski, x, 120, 122.
- Rokitansky, Baron von, iii, 732.
- Roll, Alfred P., x, 363.
- Rolland, P. O. A., obit., i, 642.
- Roller-skates, ix, 736.
- Rollet, Dr. A., ix, 518.
- Roman Question, the, vii, 627.
- Roman Catholic Church, in every volume; brief of the Pope to a German bishop, i, 703; aggressive measures of the Italian Government, i, 703, 704; superior instruction to be given only in Government schools, 703; theological students not exempt from mili-

tary service, 703, 704; seizure of foreign colleges in Rome, 704; interference with services in Germany, 704; release and banishment of Cardinal Ledochowski, 704; deposition of the Bishop of Münster, 704; church property to be administered by Government, 704; church schools closed, 704; the Pope to the Bishop of Paderborn, 704, 705; arrest of pilgrims at Marpingen, 705; trial of Bishop Janiszewski, 705; University of Paris, 705; festival of Lourdes, 705; liberty of worship discussed in Spain, 705; the Pope's brief to Spanish bishops on maintaining the Concordat, 705; anti-Catholic measures in Russia, 705, 706; return to Turkey of the banished Armenian Patriarch, 706; monastery founded in Scotland, 706; the public-school system in the United States, 706, 707; liberal movements in the Spanish-American republics, 707; Brazil, anti-clerical attacks, 707; missionary martyrs, 707; necrology, 707; ii, 682; iii, 738; iv, 774; v, 659; x, 718; xi, 789; the Pope's decree inserting certain words in the creed of Pius IV, ii, 676; allocution on the situation, 677, 681; clerical abuses bill, 681; episcopal jubilee of Pius IX, 681; seizure of churches, 681; condition of the Church in various countries, 682; death of Pius IX, iii, 732; election and coronation of Leo XIII, 732; restoration of the hierarchy in Scotland, 732; the Pope's policy foreshadowed, 733; intercourse with German and Swiss Governments, 736; negotiation with Russia in reference to the Catholic Poles 736; no direct communication with King Humbert, 736; societies in Italy encouraged, 736; persecutions in Germany, 736; churches in Switzerland transferred to Old Catholics, 736; clerical cases in the United States, iii, 737; affairs in Colombia, 738; persecutions in Corea, 738; encyclical against socialism, iv, 773; schisms in the Eastern churches, 773; opposition to the Ferry laws, 773; operation of the Falk laws, 773; Italian civil-marriage law, 774; school-conflict in Belgium, 774; confraternities in Brazil, 774; New York cathedral, 774; Italy, v, 658; suppression of religious orders in France, 658; agreement with the Russian Government, 658; the Pope's position in Rome, vi, 792; seizure of property of the Propaganda, 792; order for its sale, ix, 699; disturbances at the removal of the body of Pius IX, vi, 792; jubilee proclaimed, 792; the papal

theory of government, 792; agitation to restore the temporal power, 792; action of Prussia, 792; canonizations, 792; Knights of St. John, 792; hostility of the French cabinet, 798; action of the Irish clergy as to the Land League, 793; the Church in the United States, 798; vii, 726; litigation as to property, vi, 793, 794; semi-centennial of Sisters of Mercy, 794; official acts of Leo XIII, vii, 723; the encyclical, 723; case of Martinucci involving jurisdiction, 724; the Church in Germany, 725; French Government hostile, 726; viii, 694; seizure of property in Italy, viii, 692; the Vatican library open to historical students, 692; the Pope's letter on the Irish agitation, 693; case of Louise Lateau, 694; hostility in Belgium, 694; the American college at Rome, ix, 699; historical societies in America, 700; missions, 700; encyclical, *Immortale Dei*, x, 712; Order of Pius IX, x, 712; conflict with Orangemen in Newfoundland, x, 629; freedom of worship bill, ix, 700; x, 634; Church in China, 169, 170; relations with Russia, ix, 710; Concordat in Ecuador, 282; Golden Jubilee, xii, 716; Dr. McGlynn excommunicated, 717; envoy at the English court, 717; hierarchy established in India, 382. See also Papacy and Education.

Roman relics, ix, 22, 23, 26.

Romance, an ancient Egyptian, xi, 32.

Romanz, J. J., obit., ix, 621.

Rome, ancient mansions in, ix, 26; illustrations, ancient and modern map of, ii, 408; Piazza del Popolo, 409; the Lateran, 409; castle of St. Angelo, 411; capitol, i, 421; St. Peter's and the Vatican, 704.

Romilly, H. H., ix, 639.

Röntgen, invention by, iii, 545.

Rook Island, x, 681.

Roon, A. T. E., Count von, sketch, iv, 774.

Roosevelt, Mrs. Cornelia, obit., i, 623.

Roosevelt, Theodore, obit., iii, 644.

Roraima, Mt., ix, 539; x, 400.

Roscoe, Sir Henry E., xii, 100.

Rosegg, figure from tumulus of, illustration, ix, 23.

Rosenbach, Gen., x, 6.

Rosenthal, Toby, xii, 279.

Rosetti, experiments by, iii, 92.

Rosetti, C. X., reform plan of, in Roumania, vii, 729, 730; obit., x, 687.

Rosewood, exportation from Costa Rica, xii, 211.



- Roshan, state of, x, 2.  
 Ross, Mr., ix, 51.  
 Ross, Alexander M., sketch, iii, 789.  
 Ross, Sir David, obit., i, 642.  
 Ross, Sobieski, obit., ii, 587.  
 Ross, William H. H., obit., xii, 609.  
 Rossetti, D. G., obit., vii, 647; xii, 278.  
 Rostov, xi, 792.  
 Rothschild, Sir Anthony, Bart., obit., i, 642.  
 Rothschild, Baron, obit., iv, 701.  
 Rothschild, Mayer Carl von, obit., xi, 725.  
 Rothschild, Nathan, x, 606.  
 Rotumah Island, annexation of, vi, 47.  
 Roudaire, Capt., survey in Africa, ii, 328; obit., x, 667.  
 Rouge, M. de, researches, vii, 257, 258 *et seq.*  
 Rouher, Eugène, v, 284; obit., ix, 621.  
 Rouland, Gustave, obit., iii, 661.  
 Roumania, i, 787; ii, 688; iii, 789; v, 659; vi, 794; vii, 726; viii, 695; ix, 700; article on, in Berlin Treaty, iii, 257; dissatisfaction, 740; act to prevent Jews from buying lands, 740; attitude toward Danube Commission, viii, 270, 272; ix, 702; constitution revised, ix, 702; x, 718; Jews in, ix, 708; x, 714; tariff-war in, x, 877; xii, 720; attempted assassination of the prime minister, 719; crisis in, 720.  
 Roumelia, ix, 103; xi, 100; Eastern, x, 753; in favor of the Bulgarian union, 753, 754; Alexander made governor-general of, x, 754. See also Eastern Roumelia.  
 Round Table, the, xii, 836.  
 Rouquette, Adrian, obit., xii, 609.  
 Rous, Admiral, obit., ii, 609.  
 Rousseau, invention, i, 516.  
 Rousseau, Philippe, x, 367; obit., xii, 686.  
 Routt, John Le, i, 121; ii, 109.  
 Rouvier cabinet, the, xii, 291.  
 Roux, M., on the Panama Canal route, vi, 715.  
 Rowett, Richard, obit., xii, 609.  
 Rowland, discovery by, vi, 97.  
 Rowlands, Rev. J., ix, 27.  
 Rowley, W. R., obit., xi, 698.  
 Royal Academy exhibitions. See Fine Arts.  
 Royal succession, the, in France, viii, 106.  
 Rubens, Peter Paul, sale of pictures by, x, 859, 861, 865, 866.  
 Ruberine, vii, 88.  
 Rubies and garnets, discovery of, in Australia, xii, 311.  
 Rubner, investigations by, vi, 676.  
 Rubus Chamæmorus, xi, 291.  
 Rudersdorff, E. M., obit., vii, 648.

- Rudolph, crown prince of Austria, marriage of, vi, 51.  
 Ruffin, George Lewis, obit., xi, 699.  
 Ruffner, Lieut. E. H., x, 402.  
 Ruffo-Scilla, xii, 717.  
 Ruge, Arnold, obit., v, 603.  
 Ruggles, Prof. William, obit., ii, 587.  
 Rugs, viii, 96.  
 Rukhmabai, legal suit of, xii, 382.  
 Rumington, process of, ix, 658.  
 Rumpff, Herr, murder of, x, 417.  
 Rumsey, Henry Barlow, obit., xii, 610.  
 Runeberg, Johann Ludwig, obit., ii, 609.  
 Rupsch, ix, 358.  
 Rushton, John, obit., xi, 699.  
 Russell, Scott, obit., vii, 647.  
 Russell, Alexander, obit., i, 642.  
 Russell, Earl, sketch, iii, 740.  
 Russia, statistics, government, etc., in every volume; views in, i, 709, 710, 712; ii, 686-689; the Eastern question, i, 708, 711; see Eastern Question; the Czar's visit to the Crimea and speech at Moscow, 709; mobilization of the army, 709; Gortchakoff's views, 710, 711; separate administration in the Balkan provinces abolished, 711; changes in the Polish judiciary, 711; the Little Russian dialect forbidden in literature, 711; Finland canal, 711; conquest of Khokan, 711; congress of orientalista, 711-718; war declared against Turkey, ii, 688; see Turkey; trials of socialists, 688; origin of the Propagandists, 688; law about railroad stock, 689; commercial disasters, 689; additions by the treaty of Berlin, iii, 741; losses by the war, 742; the navy, 742, 743; reception of news of the congress of Berlin, 744; frauds in the commissariat, 744, trial of Vera Sassaulich, 744; attempt to assassinate Trepoff, 744; a shock to the government, 745; students and nihilists, 745; condition of society, 745, 746; proposed mixed occupation of Roumelia, iv, 775; war in Turkistan, 775; suspected designs on Merv, 775; victories of the Tekke Turkomans, 776; course of the Attek turned, 776; attempts on the Czar's life, 776; 778; nihilist plots, 777; v, 662; trials, 665; reforms proposed, iv, 778; secret presses, v, 662; winter-palace explosion, 662; attempt to kill Loris-Melikoff, 663; the Hartman affair, 665; convention with the Vatican, 665; reclamation of marshes, 666; conciliation of Poland, 666; annexed province of Kara, 666, 667; assassination of the em-

- peror, vi, 795-797; efforts to suppress nihilism, 796; trial and execution of the regicides, 797, 798; measures to protect the new Czar, 798; complicity of Duke Constantin, 798; arrests, and designs of the nihilists, 798-800; proposed reforms, 799; changes in the ministry, 799; secret correspondence of the Government, 800; advances in Asia, see Russian advances in Asia; emancipation of the serfs, 800-802; resignation of Gortchakoff-Giers ministry, sketch of M. Giers, vii, 734; great debt, 735; persecution of Jews, 735; viii, 709, 711; Ignatieff succeeded by Tolstol, vii, 736; nihilist plots and murders, 737; viii, 709; ix, 711; x, 718; xii, 723; oil and minerals found, viii, 700; coronation of the emperor, 704; German provinces, 708; reconciliation with Austria, ix, 63; censorship of the press, ix, 708, 709; reaction against education, 709; meeting of emperors, 712; the Petersburg sea-canal, x, 716; the Bulgarian revolution and the Baltic provinces, 719; laws against foreigners, xii, 724; constitutionalist conspiracy, 723; drainage of marshes, 818.
- Russian advances in Asia, ii, 6; iii, 2, 33, 97, 404; iv, 9; vi, 732, 800; vii, 415, 681, 734; viii, 706; territory gained, iii, 258; annexation of Merv, viii, 706; ix, 818; other operations in Asia, ix, 6, 712, 718; x, 1, 14, 720; relations with China, ix, 714.
- Russian Government, the, vi, 800.
- Russian language, act to establish, in literature, i, 711.
- Russian prisons, improvements in, xii, 704.
- Russian Turkistan, organized, ix, 712.
- Russians, troubles with the Chinese, v, 101; aid of, to Persia, v, 623.
- Russo-Turkish War. See Turko-Russian War.
- Rüstow, Wilhelm, obit., iii, 661.
- Rutherford, George V., obit., i, 623.
- Ryall, explorations by, iv, 400.
- Ryan, Abram J., obit., xi, 699.
- Ryan, George P., obit., ii, 587.
- Ryder, Lieut., xii, 816.
- Ryerson, Adolphus E., obit., vii, 643.
- Ryle, John, obit., xii, 610.
- Ryssakoff, vi, 796.
- Saavedra, the Carolines discovered by, x, 138.
- Sabbath, Congress for promoting the observance of, i, 740.
- Sabine, Sir Edward, obit., viii, 604.
- Sabine, Lorenzo, obit., ii, 587.
- Sablin, N., vi, 796, 797.
- Saccharinates of bitter alkaloids, xi, 291.
- Saccharine, xii, 109.
- Saccharomyces mycoderma, illustration, ix, 498.
- Sachan, E., explorations of, viii, 885.
- Sachs, Herr, experiments by, x, 690, 695.
- Sachse, Robert, x, 153.
- Sacramento, Cal., recent growth of, xi, 183; Capitol at, illustration, ii, 81.
- Sacrificial Calendar-stone, ix, 18.
- Sa Da Bandeira, Viscount, sketch, i, 718.
- Sadi-Carnot. See Carnot.
- Sadowa, battle of, x, 382.
- Sattler, S. P., discovery by, vi, 97.
- Safarik, Prof., observations of, viii, 24.
- Safe-deposit companies, x, 294; list of, 294, 295.
- Safroi, xi, 292.
- Saft-el-Henneh, x, 36.
- Safvet Pasha, sketch, ii, 689; obit., viii, 604.
- Sagasta, speeches of, vi, 818, 819; ix, 741; x, 739; xi, 808.
- Saghalien, exchanged for Kurile Islands, i, 427; colonization of convicts in, x, 397.
- Sahara, exploration of the, vi, 327; x, 393; proposed railway, v, 293; scheme for flooding, iv, 340; viii, 308; Spanish protectorate over the western, xii, 305.
- Said Pasha, reforms proposed by, vii, 808; dismissed, 808; recalled, 804.
- Sailors' Creek, fight at, x, 430.
- Saint Amand, pen-name, x, 663.
- Saint Augustine, cathedral of, destroyed by fire, xii, 717.
- Saint Bartholomew, island of, bought by France, ii, 819; iii, 777; price returned, for a charitable institution, iv, 824.
- Saint Bernard dog, the, ix, 259.
- Saint Croix, island of. See in articles on the West Indies.
- Saint Gaudens, Augustus, works of, ix, 245; x, 361; xii, 280.
- Saint Germans, Earl of, obit., ii, 612.
- Saint Gothard Railway and Tunnel, ii, 706; iii, 778; v, 667; vi, 819; vii, 11; illustrations, vi, 820, 821.
- Saint Hilaire, B., on Greek boundaries, vi, 375; v, 285.
- Saint Hilaire, Émile Marco de, obit., xii, 636.
- Saint John, Isaac M., sketch, v, 673.
- Saint John, New Brunswick, growth of, xii, 128.
- Saint John, John P., v, 420; ix, 774, 775.
- Saint John, R., iii, 463.

- Saint Joseph, growth of, xi, 183.  
 Saint Louis, growth of, v, 539; article on recent growth of, xi, 183; illustrations, i, 567; ii, 580.  
 Saint Lucia Bay, x, 137.  
 Saint Lucia Island, xii, 802.  
 Saint Paul, Minn., recent growth of, xi, 184; illustration, ii, 522.  
 Saint Paul's Cathedral, London, illustration, ii, 362.  
 Saint Petersburg sea-canal, x, 716.  
 Saint Simonists. See David, i, 220.  
 Saint Vallier, Comte de, obit., xi, 725.  
 Salah-Aga-el-Mek, viii, 299.  
 Saleh, Sheik, ix, 801.  
 Salamanca, Gen., x, 142; xii, 740.  
 Salamanca, Marquis of, obit., viii, 604.  
 Saldanha, Oliveira E. Daun, Duke of, sketch, i, 713.  
 Salembini, Count, xii, 2, 3.  
 Saletta, Gen., xii, 3.  
 Salicylic acid, synthesis of, ix, 425.  
 Saline Springs, x, 596.  
 Salisbury, Marquis of, x, 721; portrait on steel, 448; iii, 244; ix, 374, 375; x, 18; cabinet of, x, 448.  
 Salkowski, researches, viii, 637.  
 Salmeron, xi, 808.  
 Salmon, ix, 636, 800.  
 Salol, xi, 292.  
 Salor Turkomans, x, 4, 5, 6, 7.  
 Salt, John, xii, 480.  
 Salt, solution of a, x, 149.  
 Salt, beds of rock, in Ontario, xii, 726; mining, in New York, xii, 725; in Michigan, iv, 581.  
 Salt-deposits, formation of, ii, 92.  
 Salt-tax, in India, vii, 417; in Russia, vii, 733.  
 Salts of copper, poisonous properties of, xii, 680.  
 Salt Lake City, tabernacle in, illustration, ii, 756.  
 Salvador, i, 22; war, iii, 747; vi, 808; viii, 710; ix, 714; x, 722, 487; xii, 727.  
 Salvation Army, viii, 710; in Canada, ix, 676; in Switzerland, ix, 754; x, 452.  
 Salvini, v, 409.  
 Samaria, a new earth, x, 156.  
 Samarium, vi, 93.  
 Samoan Islands, treaty of, with Germany, iv, 442; xi, 792; map of, 793; xii, 728; American interests at, 732; Germany declares war on, 730; King Malietoa deposed, 731.  
 Sar., aqueduct of, xi, 34.  
 Sampson, Capt., observations by, viii, 20.  
 Sampson, W. T., experiments by, iv, 134.  
 SAn (Zoan), ix, 19, 600.  
 San Antonio, Texas, recent growth of, xi, 184.  
 Sanctuary, the right of, ix, 282.  
 Sand, George, sketch, i, 713.  
 Sandberger, Dr., xi, 538.  
 Sandborn, John S., obit., ii, 610.  
 Sand-dunes, control of, x, 833.  
 Sandeau, Jules, obit., viii, 604.  
 Sandeman, Sir Robert, i, 74; ii, 70; ix, 6, 7; x, 395; xi, 6.  
 Sanders, observations, vii, 39.  
 San Diego, recent growth of, xii, 128.  
 Sanday, invention by, x, 845.  
 Sandhurst, W. R. Mansfield, Baron, sketch, i, 715.  
 Sands, Benjamin F., obit., viii, 593.  
 Sands, Joshua R., obit., viii, 594.  
 Sandusky, O., recent growth of, xii, 129.  
 Sandwich Islands. See Hawaiian Islands  
 Saneha, story of, xi, 32.  
 Sanford, Charles W., obit., iii, 645.  
 Sanford, John L., obit., ii, 610.  
 San Francisco, vote on new charter, v, 73; trade of, x, 118; recent growth of, xi, 184; laundry ordinance, ix, 480; illustration, city hall, ii, 82.  
 Sangai, Mt., ix, 541; view of, 542.  
 Sanitary Commission, work of the, vii, 718.  
 Sanitary Congress in Peru, xii, 668.  
 Sanitary Conference, appropriation for, vi, 142; x, 506.  
 Sanitary Science, ix, 716.  
 San José, recent growth of, xii, 129; view of, vii, 177.  
 Sampoo River, the, identical with the Brahmapootra, iv, 399.  
 Sana, A., discovery by, vi, 20.  
 San Salvador. See Salvador.  
 Sansas, Pierre, obit., ii, 610.  
 San Stefano, Treaty of, iii, 292, 396, 402, 739, 798; principal provisions of, iii, 791.  
 Santa Anna, sketch, i, 715.  
 Santa Cruz, celebration at, ix, 804. See also West Indies, in vols. viii, ix, x, and xii.  
 Santa Fé, street scene in, illustration, ii, 559.  
 Santa Maria, D., sketch, vi, 806; message of, viii, 63; ix, 181; excommunicated, x, 165; attempt to kill, 165.  
 Santini, Giovanni, obit., ii, 610.  
 Santo Domingo, proposed annexation of, i, 685; x, 485; article, viii, 712; ix, 730; x, 723; xii, 732; rebellion in, 733.  
 Santonate of atropine, xi, 292.

- Santos, President, attempt to kill, xii, 787.  
 Santos case, the, x, 303.  
 Sappey, experiments by, vi, 751.  
 Sarakhs, taken by Russia, ix, 6, 648, 713; x, 4, 5, 12.  
 Sargent, Aaron A., obit., xii, 610.  
 Sargent, Epes, sketch, v, 667.  
 Sargent, John S., xii, 277.  
 Sarhad Mountains, the, discovery in, ii, 325.  
 Sarik Turkomans, the, x, 4, 5, 6, 7.  
 Särnström, experiments, viii, 520; x, 576.  
 Sartorius, Sir George R., obit., x, 667.  
 Sartorius Pasha, ix, 293.  
 Sarun tribe, the, ix, 7.  
 Sarzeand, Martin, incident, xii, 243.  
 Sarzek, researches of, vii, 263.  
 Saskatchewan, Territory, viii, 81; ix, 270.  
 Sasulitch, Vera, assassination attempted by, iii, 744; effect of acquittal of, iv, 682.  
 Satellites, orbits of, xi, 53; of the planets. See under Astronomy in each volume.  
 Satsuma, rebellion in, ii, 414.  
 Sattara, annexed, ix, 346.  
 Satterlee, Richard S., obit., v, 595.  
 Satterlee, Walter, xi, 346.  
 Saturn, rings of, i, 46; ii, 45; iii, 86; rotation of, ii, 45; orbit of Hyperion, 46; density of, iv, 52; system of, viii, 23; its mass and satellites, ix, 50; xii, 42; rings, 50, 51.  
 Saul, King, alleged descendants of, ix, 7.  
 Saulnier, John, xi, 344.  
 Saulsbury, Eli, obit., vi, 688.  
 Saunderson, Col., xii, 340.  
 Savages (independents), ix, 69, 72, 362.  
 Savanilla, xii, 756.  
 Savannah, Ga., recent growth of, xi, 186; capture of, x, 423.  
 Save, Carl, obit., i, 642.  
 Savings-bank, post-office, xii, 687.  
 Savoiron, Count, xii, 3.  
 Savoy, neutrality of, vi, 829.  
 Sawyer, E. F., observations by, iii, 37; iv, 52; vii, 40.  
 Sawyer, George Y., obit., vii, 643.  
 Sawyer, W. E., invention by, i, 520; v, 240.  
 Saxe, John Godfrey, sketch and portrait, xii, 733.  
 Saxifragine, x, 343.  
 Say, Léon, sketch, ii, 820; President of Senate, v, 281.  
 Saybolt, oil-tester of, viii, 464.  
 Sayce, A. H., ix, 23.  
 Sayn-Wittgenstein, Caroline, obit., xii, 636.  
 Sayn-Wittgenstein-Sayn, Prince, obit., i, 642.  
 Sayre, David M., obit., i, 623.  
 Sbarbaro, Signor, trial of, xi, 454.  
 Scandium, discovery of, ix, 119.  
 Schaarschmidt, Jules, experiments by, x, 695.  
 Schäberle, J. M., discoveries by, v, 35; vi, 39.  
 Schaffner and Helbig, experiments by, viii, 115.  
 Schall, M., xii, 111.  
 Schell, Augustus C., obit., ix, 611.  
 Sohem, Alexander J., obit., vii, 643.  
 Schenectady, N. Y., growth of, xii, 129.  
 Scherer, Wilhelmj, obit., xi, 725.  
 Scherr, Archbishop, obit., ii, 610.  
 Scherr, Johannes, obit., xi, 725.  
 Schiaparelli, observations by, viii, 20, 24; xi, 54.  
 Schieffeln, E., vii, 7.  
 Schilling, monument designed by, vii, 399.  
 Schimper, A. F. W., discoveries by, ix, 92, 93.  
 Schinz, Dr. H., xii, 306.  
 Schirmer, Heinrich Ernst, obit., xii, 637.  
 Schkara, Mt., in the Caucasus, xii, 318.  
 Schlagdenhauffen, experiments by, viii, 118.  
 Schlagintweit, Emil, quoted, i, 7, 73, 74; ii, 5, 70.  
 Schlagintweit, Herrmann, ix, 543.  
 Schlagintweit, Robert von, obit., x, 668.  
 Schleicher, G., obit., iv, 695.  
 Schleinitz, Baron von, explorations by, xi, 382; xii, 312.  
 Schleswig-Holstein, final disposal of, iv, 440; Danish subjects in, viii, 276.  
 Schley, W. S., ix, 29.  
 Schleyer, Johann Martin, inventor of Volapük, xii, 794.  
 Schliemann, Heinrich, explorations of, i, 28; ix, 23; xi, 33.  
 Schloesing, theory of, iii, 83; invention by, vii, 741.  
 Schmid, Theodor, obit., ii, 610.  
 Schmidt, Gen. von, obit., i, 642.  
 Schmidt, Julian, obit., xi, 725.  
 Schmidt, Prof., discoveries by, ii, 48; vii, 38; obit., ix, 621.  
 Schmidt, Wilhelm Adolf, obit., xii, 637.  
 Schmitz, Gustavus, obit., ii, 588.  
 Schmoele, Henry, invention by, x, 616.  
 Schnaebels, M., xii, 826.  
 Schneider, C. C., bridge designed by, viii, 313.  
 Schnetzler, M., xii, 675.  
 Schnitzler, Dr., discovery by, ii, 380; xi, 312, 369. See Emin Bey.  
 Schofield, Gen. John M., x, 429.  
 Schofield, Jacob L., obit., xi, 699.  
 Schöne, investigations by, iii, 90.

- Schools, national aid to, ix, 222; xi, 263; secular, in Belgium, xi, 84; the Bible in, v, 380; in Kansas, ix, 424. See also Education.
- Schrader, Dr., xii, 312, 647.
- Schreiner, Herr, xi, 85.
- Schröder, H., experiments by, viii, 637; ix, 521.
- Schröder, Karl, obit., xii, 637.
- Schulhof, Dr., prize to, iii, 39.
- Schulze-Delitzsch, H., obit., viii, 604.
- Schumaker, Herr, xii, 25.
- Schumann, Max, xii, 488.
- Schunk, Edward, experiments, iv, 185; xii, 112.
- Schur, W., prize to, viii, 28.
- Schurz, Carl, sketch, ii, 689.
- Schütt, Otto, explorations by, iv, 403.
- Schützenberger, experiments by, viii, 110.
- Schuyler, Peter, with out, xi, 10.
- Schwachhöfer, invention by, iii, 545.
- Schwartz, Herr, xi, 129.
- Schwarzenberg, Cardinal, obit., x, 668, 718.
- Schwann, Theodor, obit., vii, 647.
- Schwatka, voyage of, v, 298; xi, 380.
- Schweinfurth, Dr., explorations of, i, 331; ii, 328; iii, 363; v, 235.
- Schwerin, Baron von, discovery by, xii, 306.
- Scialoja, Antonio, obit., ii, 610.
- Science, Associations for the Advancement of, ix, 44; x, 44; xi, 46; xii, 34.
- Science, recent books on. See Literature, in every volume.
- Scindia, restoration of Gwalleor citadel to, x, 497.
- Scindiah Bhajeerut Rao, obit., xi, 726.
- Sclopis de Salerano, Count, obit., iii, 661.
- Scopoline, xi, 292.
- Scoresby, Capt., xi, 565.
- Scorpion, fossil, illustration, ix, 637.
- Scotland Yard, explosion in, ix, 377.
- Scott, Sir George G., obit., iii, 661.
- Scott, Henry L., obit., xi, 699.
- Scott, Levi, sketch, vii, 738.
- Scott, Robert N., obit., xii, 610.
- Scott, Thomas, murder of, x, 711.
- Scott, Thomas A., sketch, vi, 306.
- Scott, Gen. Walter, obit., i, 642.
- Scott-Moncrief, Col., ix, 286.
- Scranton, Pa., recent growth of, xi, 186.
- Scratchley, Maj.-Gen. Sir Peter, x, 59, 60; xii, 647; obit., x, 668.
- Screw-propeller railway, illustration, xi, 742.
- Scribner, John Blair, obit., iv, 695.
- Scroggs, Gustavus A., obit., xii, 611.
- Scrope, George P., obit., i, 642.
- Scrutin de Lists*, vi, 307; x, 376, 379.
- Soudder, S. H., ix, 637.
- Sculpture, ix, 244.
- Seal fisheries, vii, 7; xii, 284.
- Sealing bags, xii, 689.
- Sea-Lions, vii, 9.
- Searle, observations, viii, 24.
- Sears, Barnas, obit., v, 596.
- Sears, Edward J., obit., i, 623.
- Sears, George B., obit., ii, 588.
- Searing, John A., obit., i, 623.
- Sea-serpents, xi, 795; illustrations, 796, 797, 798.
- Seawanhaka, loss of the, v, 580.
- Sebastin, a new explosive, x, 344.
- Sebastopol, fortifications and siege of, ix, 761.
- Sebehr Pasha. See Zebehr Pasha.
- Secchi, Peter A., obit., iii, 738.
- Sechele, Chief, x, 88.
- Secret Societies, Reformed Church on, v, 652.
- Sedative, a new, ix, 272.
- Sedden, James A., obit., v, 596.
- Seed-cotton, bill on, in Alabama, iv, 16; invention for spinning, iv, 638.
- Seegen, experiments by, vi, 750.
- Seguin, Edward, obit., v, 596.
- Seiberling, J., obit., i, 623.
- Seid, Mohammed, ix, 712.
- Seismic area, chart showing, xi, 296.
- Seismographs, xi, 303.
- Seismometers, illustrations, xi, 303.
- Selden, Henry R., obit. and portrait, x, 724.
- Selden, Samuel L., obit., i, 623.
- Self, Edward D., xii, 431.
- Sell, E., study of Islam by, vi, 444.
- Sella, Quintino, obit., ix, 621.
- Sellon and Volckmar, invention by, vii, 265.
- Selmer, impeachment of, ix, 751.
- Selwyn, George A., obit., iii, 661.
- Semiramis, ix, 599.
- Semmes, Raphael, sketch, ii, 690.
- Senard, M., obit., x, 668.
- Senate, office of President of, i, 138-152; expulsions from, vii, 196; contested election to, in Texas, xii, 758. See Congress.
- Senatorial Question, the, in New Hampshire, vi, 638.
- Seneca River aqueduct, illustration, i, 603.
- Senefru, King, monuments of, vii, 257.
- Senegal, under French protection, xii, 305.
- Seney, George I., ix, 329; art collection of, x, 367; xii, 279.
- Sennaar, insurrection in, viii, 299, 301; massacre at, x, 317.

- Senses, special, ix, 656; x, 690.  
 Sepinau, Chief, ix, 115.  
 Serfdom, vi, 478; in Java, vii, 589.  
 Sermons, election, vi, 534.  
 Serrano, Capt., expedition of, x, 400; xii, 815.  
 Serrano, Duke, ix, 741; obit., x, 668.  
 Serrigny, Denis, obit., i, 642.  
 Servia, i, 753, 761, 763, 765; ii, 691, 724; iii, 748; vii, 788; map, i, 754; viii, 714; xii, 784; insurrection, viii, 715; articles on, in the Berlin Treaty, iii, 257; differences with Austria, v, 47; project for church union of, v, 847; troubles in, viii, 43; Russian views for, viii, 549; ix, 732; dispute with Bulgaria, 102, 733; x, 109, 112; war with Bulgaria, x, 727; treaty, xii, 736; changes of ministry, 735.  
 Service, U. S. Life-Saving, iii, 749; illustrations, i, 592 *et seq.*; iii, 759 *et seq.*  
 Service, U. S. Marine Hospital, iv, 778.  
 Sessions, L. B., case of, vi, 648; viii, 577.  
 Seti, King, ix, 20.  
 Settembrini, L., obit., i, 642.  
 Setters, described, ix, 255, 256.  
 Settled Estates Act, the, in Great Britain, x, 457.  
 Seubert, K., experiments by, vi, 93; x, 155.  
 Seven Days' Battles, the, x, 559.  
 Seven Pines, battle of, x, 558.  
 Seventh Day Adventists. See Adventists.  
 Seventh Day Baptists. See Baptists.  
 Severtzoo, explorations by, iv, 399.  
 Sevier, Robert, obit., iv, 695.  
 Sevilla, José, bequest of, xii, 663.  
 Sewage, influence of, on ground-atmosphere, i, 94; in houses, v, 863; disposal, vii, 741; see Sanitary Science, ix, 716; disposal of sludge, ix, 128; nitrification of, 128; purification of, x, 154.  
 Sewall, Harold Marsh, xii, 781.  
 Sewall, Henry, ix, 657; experiments by, x, 692.  
 Seward, Maj. Augustus H., obit., i, 623.  
 Seward Monument in New York, the, i, 716.  
 Sewers, ventilation of, iii, 722; ix, 724 *et seq.*; traps, 728; gas, 723, 725.  
 Sewing-machines, improvement in, ii, 497.  
 Seyffarth, Gustavus, obit., x, 669.  
 Seymour, Edward, obit., ii, 588.  
 Seymour, Sir F. B. P., portrait, vii, 245.  
 Seymour, Horatio, obit. and portrait, xi, 798.  
 Seymour, Origen S., sketch, vi, 808.  
 Seytre, M., invention by, x, 615.  
 Seyyid Bargash, x, 795, 796.  
 Sforza, Cardinal, obit., ii, 610.  
 Shachovski, Prince, sketch, ii, 692.  
 Shaftesbury, Earl, obit., x, 669.  
 Shah of Persia, travels of, i, 660.  
 Shah Jehan, ix, 7.  
 Shairp, John O., obit., x, 669.  
 Shakespeare, Dr. E. O., x, 798, 800.  
 Shaler, Gen. Alexander, x, 641.  
 Shanahan, Jeremiah Francis, xi, 699.  
 Shand, Peter J., obit., xi, 700.  
 Shandley, Edward J., obit., i, 623.  
 Shanghai Custom-House, illustration, iv, 146.  
 Shannon, Wilson, obit., ii, 588.  
 Shari River, the, iii, 863.  
 Sharkey, observations, viii, 684.  
 Sharp, Jacob, trial of, xii, 555.  
 Sharswood, G., obit., viii, 594.  
 Shaw, Aaron, obit., xii, 611.  
 Shaw, Henry W., obit., x, 654.  
 Shaw, Richard, obit., i, 642.  
 Shawe, Charles A., obit., i, 643.  
 Sheep-husbandry, in Georgia, iv, 427; in Australia, vi, 46.  
 Sheldon, George, obit., vi, 688.  
 Sheldon, James, obit., xii, 611.  
 Sheldon, Smith, obit., ix, 611.  
 Shell-Heaps, aboriginal, ix, 14.  
 Shelton, John T., obit., i, 624.  
 Shelton, William, obit., viii, 594.  
 Shendy, captured by Arabs, ix, 297; by Gordon, 301; bombarded, x, 314.  
 Shepard, observations, iv, 53.  
 Shephard, Charles Upham, obit., xi, 700.  
 Shepherd, Thomas P., obit., ii, 588.  
 Shepley, George F., sketch, iii, 767.  
 Sherbrooke, Quebec, xii, 180.  
 Shere Ali, i, 8; negotiations with Russia, ii, 6, 42; disputed succession, iii, 6; answer of, to the British Government, iii, 487; flight from Cabul, iii, 487; flight of, iv, 7; death, iv, 9; secret correspondence of, captured, vi, 2; ix, 4; x, 2, 12.  
 Sheridan, Gen. Philip H., sketch and steel-plate portrait, viii, 715; x, 427, 428, 429; his recommendation as to Indian lands, 763.  
 Sherif Pasha, vii, 239.  
 Sheriffs, convention of, v, 683.  
 Sherman, John, sketches, ii, 692; iv, 794; portrait, 794.  
 Sherman, Mrs. S. M. G., obit., iii, 645.  
 Sherman, Gen. Thomas W., obit., iv, 695.  
 Sherman, Mrs. Thomas W., obit., iv, 695.  
 Sherman, Gen. William T., charge of, against Jefferson Davis, x, 235; 424, 425, 426, 431.

Shibergan, district of, x, 4.  
 Shields, James, sketch, iv, 796.  
 Shields, James, experiments by, vii, 660.  
 Shiho, engagement near, x, 178.  
 Schilder-Shuldner, obit., iii, 661.  
 Shilleto, Rev. R., obit., i, 648.  
 Shiloh, battle of, x, 424.  
 Shimosé, experiments by, viii, 111.  
 Shinwarri rebellion, viii, 1.  
 Shipka Pass, contest for, ii, 741.  
 Shipley, H., x, 401.  
 Shipping, acts on, in Great Britain, i, 358; decline of American, ii, 110; iv, 887; v, 125; vi, 786; vii, 520; statistics of American, viii, 150; committees on, vii, 522, 523; bill on, in Congress, viii, 220; fines on, in foreign ports, vi, 777; restrictions in Spanish West Indies, viii, 268; deductions to British, *ibid.*; French bill, vi, 308.  
 Shipping-law Conference, x, 420.  
 Ship-railway, Tehuantepec. See Tehuantepec.  
 Ships, machinery for lifting, ii, 497; for conveying cars, 498; speed indicator, 499; sounding instrument, 498; steering large, iii, 724; rules for preventing collisions, vi, 778; building, 246; vii, 521; statistics of, in Maine, viii, 510; armored, iii, 591; classes of war, vi, 547; history of "Old Ironsides," vi, 620; the "Grosser Kurfürst," iii, 885; iv, 441; lists, of war, and descriptions of the "Oalliope," "Téméraire," "Inflexible," "Lepanto," etc., see Navies of Europe, vii, 568.  
 Shirley, Com. Paul, obit., i, 624.  
 Shoa, ii, 8; iv, 2; xi, 1.  
 Shoemaker, John L., obit., i, 624.  
 Shoring of bridge, ix, 813.  
 Short-hand writing, physiology of, xii, 670.  
 Shufeldt, Com. R. W., x, 265.  
 Shugnan, state of, x, 2; taken by Abdurrahman, 4.  
 Shuvaloff, Count, sketch, ii, 692; x, 2.  
 Siamen, King, ix, 20.  
 Siberia, Northern, difficulties of the new ocean route to, iii, 358; trade in, x, 397; influence of the presence of Russians in, 398.  
 Sibi-Quetta railroad, the, x, 4, 12.  
 Sibiriakof, Alexander, x, 897.  
 Sicilian Vespers, anniversary of, vii, 438.  
 Sickels, John B., obit., i, 624.  
 Sidersky, experiments, viii, 118.  
 Sidi Hadji, sherif of Wazan, ix, 839.  
 Sidi Mohammed Ben Ali es-Senoussi, x, 816.  
 Sidi Muley Hassan, obit., iii, 661.

Sidmouth, Viscount, x, 60.  
 Sidon, rock-cut tombs of, xii, 24.  
 Siemens, Charles W., sketch, viii, 718.  
 Siemens, D., xi, 539.  
 Siemens, Frederick, experiments by, iv, 419; viii, 378.  
 Siemens, Werner, invention by, iii, 276; experiments, v, 237; vii, 528.  
 Siemens, Sir William, inventions by, i, 519; vi, 255, 258, 400; viii, 676; theory of the sun, vii, 82.  
 Sierra Nevada Mountains, ix, 539.  
 Sight and touch, relative accuracy of, vi, 751; experiments on the sight, x, 690, 691.  
 Signal Service, Meteorological Division of the United States, with weather-maps and map of coast telegraph, iv, 797; station of Mount Washington, 800; illustrations, 800, 804, 806-810, 813, 815, 816.  
 Signals, sound-, viii, 719.  
 Sigurson, Jon, vi, 212.  
 Sila (Corea), x, 263.  
 Silicate tablet, the, xii, 688.  
 Silicon, discoveries concerning, ix, 809.  
 Silk, weighing of, iii, 229; substitute for, 724; commerce in, iv, 173; reduced yield in China, viii, 126; industry in Lyons, ix, 345; in Italy, ix, 415; in Mexico, xi, 555; artistic, ix, 246.  
 Sill, Edward Rowland, obit., xii, 611.  
 Silliman, Benjamin, invention by, i, 522; obit. and portrait, x, 732; statue of, x, 361.  
 Silos, their construction and uses, vi, 808; illustrations, 809, 810.  
 Silva, Francis A., obit., xi, 700.  
 Silver, salts of, ii, 91; reduction of, from ore, viii, 521; in lead ores, x, 155; determination of small quantities, ix, 127.  
 Silver certificates and coins, vi, 779.  
 Silver coinage, Léon Say on, iii, 314; in Germany, iv, 440; as legal currency, ii, 235, 291; iii, 138-164; effects of depreciation, iv, 163, 619; vi, 626; ix, 783; x, 275, 282; Cleveland on, x, 755; the question in India, xi, 437. See Bimetallic Standard.  
 Silver fish, 756.  
 Silver king, 756.  
 Silver, mining of, xii, 504; in Bolivia, x, 99; xi, 91; in Australia, ix, 59; working of, see Metallurgy.  
 Simmons, Edward E., xi, 846.  
 Simon, Jules, resignation of, ii, 307; speech of, 812, 813; v, 282.  
 Simon, Marie, obit., ii, 610.  
 Simon-Carves oven, the, x, 580.

Simonieh, Count, x, 1.  
 Simons, M. Laird, obit., v, 596.  
 Simons, Thomas Y., obit., iii, 645.  
 Simony, trial for, in Greece, i, 869-871.  
 Simplon tunnel, x, 746.  
 Simpson, J. H., x, 401.  
 Simpson, John Palgrave, obit., xii, 687.  
 Simpson, Matthew, obit., ix, 611.  
 Simpson, Richard, obit., i, 648.  
 Simrock, Karl, sketch, i, 718.  
 Sims, J. Marion, sketch, viii, 718.  
 Simon, Alfred, voyage of, i, 838.  
 Sinde, annexation of, ix, 846; mutinies in, 846.  
 Singing-bird, the, x, 613.  
 Sinkat, fall of, viii, 802; ix, 293; x, 319.  
 Sioux, war with the, i, 43.  
 Sippara, temple at, ix, 18, 19.  
 Siren fog-signal, v, 448; viii, 723.  
 Sir-i-pul, district of, x, 4.  
 Sirius, spectroscopic study of, x, 52; the companion of, ix, 53.  
 Sitting Bull, i, 43.  
 Sivotha, Prince, x, 119.  
 Skassi, M., surveys of, xi, 877; xii, 810.  
 Skate, ix, 733; illustrations, 734-737.  
 Skene, J. H., researches of, vii, 264.  
 Skierniewice, meeting of emperors at, ix, 64, 856, 712.  
 Skin, structure of the, xii, 672; new remedies for diseases of the, viii, 434; ix, 272, 273; x, 298, 300.  
 Skobeleff, M. D., sketches, ii, 698; viii, 742; his plan of campaign, x, 7.  
 Skye Crofters, ix, 378.  
 Skye terrier, the, ix, 261.  
 Slade, Adolphus, obit., ii, 611.  
 Slade, Edward, obit., iii, 645.  
 Sladen, Col., xi, 118.  
 Slag, utilization of, iii, 722.  
 Slater, John F., obit., ix, 612.  
 Slaughter, W. B., obit., iv, 695.  
 Slaughtering by machinery, x, 733; illustration, 735.  
 Slavery, in Brazil, i, 77; vii, 70; movement to abolish, viii, 67; emancipation, xi, 97; the Soudan, ii, 269, 270; v, 285; viii, 290, 292; in Cyprus, iii, 402; in Cuba, iii, 774; iv, 822; abolition, viii, 262; in United States, see Exodus, iv, 354; Southern Presbyterian Church on, i, 270; among Turkomans, vi, 738; in Madagascar, vii, 498; form of, in Queensland, viii, 86; virtual, in the South Pacific, x, 62; black laborers released, 62, 63; decree abolishing, in Egypt, ix, 286.

Slave-trade, the, field of, ii, 270, 329, 331; inquiry into, ii, 641; efforts of Gen. Gordon to stop, viii, 399.  
 Slavs, the, and schemes for their union, i, 58-60; ii, 263; v, 47; vii, 47, 53; viii, 46, 48; the south, ix, 537; conflict between, and the Czechs, in Austria, x, 71. See also Pan-slavists.  
 Sleep, drugs producing, x, 298, 300, 301.  
 Sleep-drunkenness, ix, 554.  
 Sleeper, John S., obit., iii, 645.  
 Slivinitza, battle near, x, 729.  
 Sloane, J. R. W., obit., xi, 700.  
 Small, John, obit., xi, 726.  
 Small-pox, Ceeley case, vii, 287; in Canada, x, 706; outbreak of, in Montreal, x, 706.  
 Smalls, R., pardon of, iv, 820.  
 Smee, Dr. Alfred, obit., ii, 611.  
 Smell, experiments on, viii, 636.  
 Smillie, James, obit., x, 654.  
 Smirke, S., obit., ii, 611.  
 Smith, Albee, invention, vii, 485.  
 Smith, Albert, obit., iii, 645.  
 Smith, Angus, x, 161.  
 Smith, Asa D., sketch, ii, 693.  
 Smith, Ashbel, obit., xi, 701.  
 Smith, Avery, obit., i, 624.  
 Smith, Benjamin B., obit., ix, 612.  
 Smith, O. M., observations by, viii, 525.  
 Smith, Cyrus P., obit., ii, 588.  
 Smith, David M., obit., vi, 688.  
 Smith, Dr., ix, 655.  
 Smith, Erminnie A., ix, 45, 46; x, 45; obit. and portrait, xi, 802.  
 Smith, E. Darwin, obit., viii, 594.  
 Smith, E. F., experiments by, iv, 194; v, 96.  
 Smith, Edward P., obit., i, 624.  
 Smith, Francis Gurney, obit., iii, 645.  
 Smith, Francis S., obit., xii, 611.  
 Smith, George, sketch, i, 718; researches of, vii, 262-264.  
 Smith, Green Clay, sketch, i, 441.  
 Smith, Henry B., sketch, ii, 694.  
 Smith, Henry Clay, obit., xi, 701.  
 Smith, Herbert E., xii, 675.  
 Smith, Ida G., obit., vii, 643.  
 Smith, J. Hyatt, obit., xi, 701.  
 Smith, Joseph, obit., ii, 588.  
 Smith, J. Cotton, sketch, vii, 742.  
 Smith, J. Lawrence, discovery by, iii, 87; sketch, viii, 718.  
 Smith, J. P., buoy, v, 452.  
 Smith, James Y., obit., i, 624.  
 Smith, Kirby, x, 431.



Smith, Leigh, cruises of, v, 303; vi, 323, 325; vii, 334.  
 Smith, Nathan R., obit., ii, 588.  
 Smith, Lady P., obit., ii, 611.  
 Smith, Piozzi, his theory of the great pyramid, ix, 21.  
 Smith, Robert Angus, obit., ix, 621.  
 Smith, S. Alden, xii, 17.  
 Smith, Thomas Kilby, obit., xii, 612.  
 Smith, William, obit., xii, 612.  
 Smith, William E., sketch of, ii, 770.  
 Smith, W. French, experiments by, x, 158.  
 Smith, William Henry, x, 449.  
 Smith, W. N. Howell, sketch, ii, 574; iii, 630.  
 Smith, W. Robertson, trial of, for heresy, ii, 648; iii, 698; v, 634; vi, 760, 769.  
 Smoke consumer, a, i, 518.  
 Smyth, Douglass, x, 362.  
 Smyth, J. F., insurance superintendent, trial of, iii, 616.  
 Smythies, Bishop, xi, 370; xii, 303.  
 Snakes, venom of, xii, 679.  
 Snead, J. Timberlake, obit., vi, 688.  
 Sneezewood, x, 185.  
 Snell, Ebenezer L., obit., i, 624.  
 Snipe, in the United States, x, 890.  
 Snow-shoes, xi, 803; illustrations, 803, 804.  
 Snowden, J. R., obit., iii, 645.  
 Sobrero, x, 344.  
 Societies, Mutual Aid, xii, 523; of Jesus, Incorporation of, in Quebec, 708; Psychological Research, 509.  
 Socialism, State, of Bismarck, viii, 393; radical land-theories tending to, x, 457.  
 Socialists, in Denmark, ii, 250; increase of, in Germany, 282; measures against, iii, 379-381, 384; x, 417; xi, 389; attempt on the Emperor's life, iii, 381; effect of anti-Socialist bill, 383; in the Reichstag, iv, 440; law against, v, 818; Emperor's rescript, iii, 398; x, 357, 360, 361; trials in Russia, ii, 688; iii, 744; trials in France, vii, 326; schools of, viii, 368; ix, 344; x, 378; riots in Austria, viii, 46; ix, 67; x, 72; in Italy, iii, 458; congress proposed, vi, 329; held at Copenhagen, viii, 276; in the Netherlands, x, 625; xii, 529; disturbance in Amsterdam, xii, 529; agitations in London, xii, 342.  
 Society Islands, the new king of, ii, 53; annexation of, v, 40.  
 Socotra, i, 9; British treaty, 718.  
 Soda, manufacture of, viii, 114.  
 Sojourner Truth, obit., viii, 595.  
 Sokolo, town of, vi, 328.

Solar corona, the, photographed, x, 47.  
 Solar parallax, xii, 40.  
 Soldiers and sailors, committee on violations of statutes as to appointments of, iv, 770; retired list, x, 252; memorial arch, Hartford, xi, 347; orphans' home, xi, 440.  
 Soldiery, mutiny of Egyptian, vi, 236.  
 Soleillet, Paul, expeditions of, iii, 364; v, 292; xi, 371.  
 Solids, solubility of, in gases, iv, 136.  
 Solly, Edward, obit., xi, 726.  
 Solms, Count, x, 142, 143.  
 Solomon, S. J., xii, 277.  
 Solovieff, Alexander, iv, 776, 777.  
 Solymossy, Esther, case of, viii, 47.  
 Somali Land, xii, 736.  
 Somerby, Gustavus A., obit., iv, 696.  
 Somerset, Duchess of, obit., ix, 622; Duke of, obit., x, 669.  
 Somerville, xi, 186.  
 Somnolentia, ix, 554.  
 Soopayalat, xi, 114.  
 Sophia, Queen of the Netherlands, obit., ii, 611.  
 Sophocles, Evangelinus A., obit., viii, 595.  
 Sopt, the god, x, 36.  
 Sorabjé, experiments, x, 153.  
 Sorby, investigations, vii, 532.  
 Sorby-Brown micro-spectroscope, ix, 217.  
 Sorghum, experiments, iv, 341; ix, 422.  
 Sosnovski, expedition to China, i, 329.  
 Sothern, Edward A., sketch, vi, 811.  
 Soto, Marco A., sketch, iii, 424.  
 Soudan, the, Col. Gordon appointed, ii, 269; his intentions regarding slavery, *ibid.*; slave-trade in, v, 235; exploration of, vi, 326; rebellion in, vii, 255; viii, 298, 507; history and productions, 290; commerce, 386; British policy, 301; Gordon's mission, 399; operations in, ix, 283, 285, 288, 293-304, 371; map of Eastern, 287; its history, x, 308; English army disasters in, 313; xi, 310; Coe-sacks in, 311; fighting in, xii, 244.  
 Soullart, Prof., prize to, viii, 28; xii, 95.  
 Soule, Gideon L., obit., iv, 696.  
 Soulié, Eudore, obit., i, 648.  
 Sound, aberration of, viii, 724.  
 Sound-Signals, viii, 719; maps, 721, 727; illustrations, 721, 722, 728, 729, 730.  
 Soust de Boreckenfeld, A. van, obit., ii, 611.  
 South Africa, ix, 109, 112, 115; Germany in, 362-365; troubles in, with native tribes, x, 88-89. See also Cape Colony.  
 South African Confederation, discussed in Parliament, v, 388; scheme for, ix, 346.

- South America, boundaries in, i, 333; see Boundaries, Disputed; explorations in, ix, 539-543; xi, 381; xii, 314.
- South American Commission, x, 772.
- Southard, W. F., experiments by, vi, 751.
- South Carolina, statistics, legislative proceedings, State officers, elections, etc., in each volume; view in, i, 723; Hamburg massacre, i, 719, 720; Federal assistance, 720; other disturbances, 720; contested election, 723-727; settlement, ii, 694; robe of the speaker of the House, iii, 767; State-debt, 768, 769; election of Wade Hampton, 771; accident to Governor Hampton, 772; jetties to be constructed in Charleston harbor, 772; decision of Supreme Court, 772; Governor chosen in place of Wade Hampton, elected Senator, iv, 817; judges elected, 817; constitutional amendments, 818; ix, 739; miscegenation prohibited, iv, 818; artificial limbs for Confederate soldiers, 818; resignation of Governor Simpson, election of Johnson Hagood, 667, 670; phosphate mines, v, 669; vi, 814, 815; question of revising the Constitution, vi, 812; exodus of negroes, 812; anniversary of the battle of Cowpens, 815; education, vii, 744, 745; viii, 785; election law amended, vii, 748; Hugh S. Thompson made Governor, viii, 739; election cases, 739; Charleston, x, 737; cyclone, x, 738; earthquake, xi, 807; see also Earthquake; J. P. Richardson Governor, 806; forfeited lands, State capitol, State canal, xii, 737.
- South Mountain, battle of, x, 560.
- South Sea, German annexations in the, x, 415.
- South Sea Company, the German, x, 681.
- Spafford, M. H. G., sect founded by, vi, 707.
- Spain, statistics, government, etc., in each volume; views in, i, 728, 730, 732; ii, 699, 700, 701; the Carlist war, capture of Guetara, and other victories, i, 728; Estella taken and Tolosa entered, 729; flight of Don Carlos and return of the King to Madrid, 729; the law of religious liberty discussed in the Cortes, 729; the Pope's protest against it, 730; new constitution adopted, 730; modification of the special privileges of the Basque provinces, 730; return of ex-Queen Isabella, 731; expedition against the Sooloo pirates, 732; controversy relative to the Cuban rebellion, 732; war-loan and shipment of troops to Cuba, 733; extradition treaty and surrender of W. M. Tweed, 733; indemnity to the United States, ii, 701; the royal marriage, iii, 773, 774; iv, 822; marriage bill passed, 773; the Cuban loan, 774; attempt to shoot the King, 774; the Cuban insurrection, 774; the Queen's death, 774; proposed abolition of slavery in the Antilles, iv, 822; attempted regicide, 822; new outbreak in Cuba, 822; the coolie-trade, 823; events in Cuba, v, 672; Carlist movements, 673; the French expelled orders, 673; the regicide Otero, 673; free-trade plans, vi, 816; demand for American products, 817, 818; liberal views of Alfonso, 818; Calderon centenary, 819; troubles with England, vii, 751; case of Maceo and Rodriguez, 751-752; socialism, viii, 740; organization of the Mano negra, 740; military insurrection, 740; insult to the King in Paris, 741; revolutionary movements, ix, 742, 743; death of the King, x, 738, 739; the Queen regent, 738; dynastic rivalries, 740; failure of the Anglo-Spanish convention, 740; popular disturbances, 741; earthquakes, 741; claim to the Caroline Islands, 140, 741; feeling toward Germany, 141, 142; the Sooloo convention, 742; military revolt in Madrid, xi, 808; cabinet changes, 808; politics and legislation, popular discontent, xii, 40, 740; foreign relations, recognized as a great power, 740.
- Sparkman, James D., obit., i, 624.
- Spaulding, Judge A., obit., i, 624.
- Special delivery of letters, xii, 687.
- Special senses, ix, 656; x, 690; xi, 756; xii, 672.
- Specie Resumption, in Italy, viii, 451; in United States, ii, 237, 290, 663; iii, 164, 175, 325, 801; iv, 28, 367. See also Resumption of Specie Payments, iv, 763.
- Spectra, of vapors and gases, v, 95; of the planets, xi, 54.
- Spectres of Ben Lomond, illustration, xi, 569.
- Spectroscope, new form of, xii, 111.
- Spectroscopic Observations, i, 49.
- Spectrum, the solar, evidence from, iv, 130; stellar, changes in, x, 53; discovery of the cause of Fraunhofer's lines, xii, 412.
- Spectrum analysis, xii, 412.
- Spectrum photography, ix, 127.
- Speed, James, obit. and portrait, xii, 741.
- Spelling Reform, Faculty of University of Mississippi on, iv, 637; article on, ix, 743; German, 745.
- Spelter, market, ix, 481.
- Spence, J. B., discovery by, v, 93.
- Spence, Thomas A., obit., ii, 539.

Spencer, Herbert, on the nature of the elements, iii, 91.  
 Spezzia, ordnance experiments at, vii, 578; illustrations, 579-580.  
 Sphinx, the, clearing of sand from, xii, 18.  
 Spicer, William F., obit., iii, 645.  
 Spinal ganglia, xii, 672.  
 Spinoza, statue of, v, 555.  
 Spirilla, ix, 498.  
 Spitaler, Prof., ix, 52.  
 Spleen, the, function of, vi, 751; viii, 685; extirpation of the, ix, 748.  
 Splenectomy, viii, 751.  
 Spofford, Henry M., obit., v, 596.  
 Spong, Harry, xii, 678.  
 Spontaneous generation, ix, 94.  
 Spooner, Alden J., obit., vi, 688.  
 Spooner, Lysander, obit., xii, 612.  
 Sporer, Herr, xi, 57.  
 Sports, recent books on. See Literature, in every volume.  
 Spottiswoode, W., obit., viii, 605.  
 Spotts, James H., obit., vii, 644.  
 Spottsylvania, battle of, xi, 418.  
 Sprague, John J., obit., iii, 646.  
 Sprague, Peleg, sketch, v, 678.  
 Sprague, William B., sketch, i, 738.  
 Sprehels, Claus, x, 62; xii, 352.  
 Sprigg, Gordon, vi, 8, 88.  
 Spring, Samuel, obit., ii, 589.  
 Spring, W., experiments by, viii, 113; ix, 120; xi, 187.  
 Springfield, Ill., Capitol at, illustration, ii, 883.  
 Springs, waters of mineral, x, 598 *et seq.*  
 Sproat, Morgan L., obit., i, 624.  
 Spurgeon, Charles H., xii, 60.  
 Squirrels, in the United States, x, 390.  
 Stabrovski, Dr., xii, 678.  
 Stafford, broken dam in, ii, 227.  
 Stahl, on lichens, iii, 476.  
 Stahr, A. W. T., sketch, i, 733.  
 Stained glass, ix, 242.  
 Stämpfli, J., obit., iv, 701.  
 Standeford, Elisha D., obit., xii, 613.  
 Standing Bear, Chief of the Poncas, iv, 653; speech by, 654.  
 Stang, Fredrik, obit., ix, 622.  
 Stanhope, Edward, x, 450.  
 Stanley, Arthur P., sketch, vi, 822.  
 Stanley, Frederick Arthur, x, 449.  
 Stanley, H. M., sketch, ii, 701; explorations of, i, 333; ii, 323, 329; iii, 363; vii, 336; viii, 385; ix, 166, 167; x, 192, 193; xii, 250, 302.

Stannard, George Jennison, obit., xi, 701.  
 Stanton, Henry Brewster, obit., xii, 613.  
 Starob, in leaves, ix, 129.  
 Starchevich, Dr., ix, 70, 72.  
 Starkweather, Henry H., obit., i, 624.  
 Starr, Chandler, obit., i, 624.  
 Starrett, Mrs., iv, 639.  
 Star-Route Trials, vii, 753; viii, 168, 777.  
 Stars, discoveries of, i, 49; ii, 47, 48; double, ii, 37; v, 36; vii, 36; viii, 26; xi, 53; xii, 44; red, iii, 38; variable, iii, 38; v, 36; vi, 39; vii, 40; viii, 27; xi, 55; xii, 43; motion of, vi, 39; charts of, viii, 27; motion of, ix, 53; x, 52; x, 53; xi, 53; the nearest fixed, ix, 53; occultations, x, 53; catalogues, xi, 58; xii, 44.  
 Star-shower, the Biela, xi, 52.  
 State Claims, Florida, against Federal Government, v, 269; Missouri, vii, 565; Georgia, viii, 387.  
 State judges, indictment of, v, 703.  
 State officials, suits against, in Georgia, v, 304.  
 State Rights, Congress on, i, 166; as to suits against municipalities, iii, 10; conflict between United States and Arkansas courts, 25; alleged Federal interference with, v, 203; decisions on, vi, 477.  
 States, claims against, v, 479; New York law on, vi, 516; proposed amendment, vii, 462; obligation of contracts, vii, 648; viii, 493; Board of Claims, 570.  
 Statistical Congress, International, i, 734.  
 Statues at Athens, xi, 701; of Liberty, 323, 649; illustration, 650; ancient, newly discovered. See the articles on Archæology.  
 Stauber, Anton, xii, 316.  
 Stauffenberg, Dr. von, xii, 333.  
 Stead, Mr., x, 452-453.  
 Steam, exhaust, utilization of, iii, 723; pressure, vi, 546.  
 Steamboat Accidents, v, 580; vi, 220. See Disasters in 1885.  
 Steam-Engine, Wells's Balance, iii, 774.  
 Steamships, iron-clad, first built, xii, 229.  
 Steamships, line from Rio Janeiro to New York, iii, 63; to Halifax, v, 16; from Hudson Bay, 218; subsidized, in Germany, ix, 361; in Mexico, 492; privileges of, in Guatemala, xii, 347; mail, to Australia, x, 61; lack of American, x, 40.  
 Steam-tugs for canals, vi, 250.  
 Stearns, Charles W., obit., xii, 613.  
 Stearns, Marcellus L., i, 295.  
 Stearns, Onslow, obit., iii, 646.

- Stearns, William A., obit., i, 624.
- Steel, ferro-manganese process, i, 515; new theory, vi, 100; use and manufacture, vi, 542; vii, 530; influence of silicon on, xii, 480; manganese, 480; viscosity of, 479; carbon in, 480. For improved processes in working, see the articles on Metallurgy.
- Steel and Iron Industry, xi, 449.
- Steele, Maj., x, 129.
- Steele, J. Dorman, obit., xi, 702.
- Steeple-chasing, xii, 771.
- Steere, Bishop, African journey of, i, 382.
- Steers, George, x, 788.
- Steifensand, Xavier, obit., i, 643.
- Stein, Dr., microscopical experiments, ix, 515.
- Steiniger, L., xi, 375.
- Steinen, Dr. von den, xii, 314.
- Steiner, O. von, ix, 350.
- Steiner, D. W., experiments, x, 692.
- Steinmetz, K. F. von, obit., ii, 611.
- Steinway, Albert, obit., ii, 589.
- Steinwehr, Baron, obit., ii, 589.
- Stellaland, ix, 112; x, 85, 87.
- Stellar parallax, ix, 53.
- Stellmacher, Madame, ix, 754.
- Stenhouse, C. F., observations by, viii, 526.
- Stephan, Mr., x, 53; xi, 56.
- Stephen, Condie, x, 4.
- Stephens, Alexander H., sketch, ii, 702; inaugural address, vii, 346; sketch and portrait, viii, 741.
- Stephens, Ann Sophia, obit., xi, 702.
- Stephens, George, ix, 23.
- Stephenson, J. W., ix, 507 *et seq.*
- Stern, Daniel. See Agoult.
- Sternberg, Count, ix, 636.
- Stevens, Aaron Fletcher, obit., xii, 618.
- Stevens, Alfred, medal awarded to, x, 866.
- Stevens, Ambrose, obit., v, 596.
- Stevens, Henry, obit., xi, 702.
- Stevens, L. I., experiments by, viii, 632.
- Stevens, William B., sketch and portrait, vii, 767; ix, 304.
- Steuer, Gustav, obit., ii, 611.
- Stewart, Alexander, obit., i, 643.
- Stewart, Alexander T., sketch, i, 735.
- Stewart, Balfour, obit., xii, 637.
- Stewart, Sir Donald, v, 5; x, 13.
- Stewart, Sir Herbert, in the Soudan, x, 813; obit. and portrait, ix, 745.
- Stewart, Isaac Dalton, obit., xii, 614.
- Stewart, Julius L., x, 362.
- Stewart, Col. Patrick, x, 4.
- Stigmata, case of Louis Lateau, viii, 694.
- Stigmata maidis, ix, 272.
- Stiletto, the yacht, x, 193.
- Stille, R. B., obit., iv, 696.
- Stillman, J. M., experiments by, vi, 100; vii, 86.
- Stillman, W. J., observations by, viii, 526.
- Stillwell, Silas M., obit., vi, 689.
- Stirling-Maxwell, Sir William, obit., iii, 661.
- Stisted, Sir Henry W., obit., i, 643.
- Stockbridge, Mass., view of a house at, xii, 367.
- Stock Exchange, the London, report on, iv, 176.
- Stockhardt, Julius Adolf, obit., xi, 726.
- Stockley, Charles C., sketch, vii, 189.
- Stock Market, vii, 117; viii, 335. See Finances and Financial Review.
- Stockton, John D., obit., ii, 589.
- Stockton, Richard, obit., i, 624.
- Stockton, Cal., growth of, xii, 130.
- Stoletoff, Gen., x, 2.
- Stone, Charles P., obit., 614.
- Stone, Delia Charlotte Hall, obit., 615.
- Stone, Lucy, iv, 598.
- Stone, Ormond, xi, 56.
- Stone, Prof., observations, vi, 39.
- Stone, Dr. W., opinions on yellow fever, iii, 816.
- Stoney, G. J., observations by, iv, 52; xii, 489.
- Stoney, G. M., explorations by, viii, 383; xi, 380.
- Stoneman, George, vii, 81.
- Storage batteries, ix, 307.
- Storer, F. H., experiments by, vi, 676; x, 157.
- Storey, Wilbur F., obit., ix, 612.
- Storms, frequency of, x, 582; xi, 543, 562; xii, 491, 492; movements of, 493.
- Storm-signals, cautionary, iv, 806.
- Storthing House, the, illustration, i, 738.
- Story, Julian, xii, 276.
- Stoughton, Edwin W., sketch, ii, 703.
- Stowe, Calvin E., obit., xi, 703.
- Strachan, Capt. J., xi, 381.
- Stradbroke, John E. O. R., obit., xi, 727.
- Strahan, Sir G., ix, 60.
- Strakosch, Maurice, obit., xii, 638.
- Strandberg, O. W. A., obit., ii, 612.
- Strange, Gen., x, 128, 129.
- Strangford, Emily Anne, obit., xii, 638.
- Stransky, M., x, 108.
- Strasburg, university at, ix, 359; view of the cathedral of, ii, 351.
- Stratford de Redcliffe, Viscount, obit., v, 603.
- Strathnairn, Lord, obit., x, 670.
- Stratton, Charles H. (Tom Thumb), viii, 596.
- Stratton, J. Willis, obit., i, 624.

Strauch, Col., x, 191.  
 Street, Alfred B., sketch, vi, 825.  
 Street, George E., obit., vi, 696.  
 Street-cars, law regarding, iii, 523; modes of traction, ii, 495; iv, 346. See Railroads, Elevated.  
 Strelok, the Russian ship, x, 13.  
 Stremayr, Dr. von, sketch of, iv, 60.  
 Strikes, ix, 344; xi, 277, 358, 453; xii, 742 *et seq.* See also Labor-Strikes.  
 Stringham, Silas H., sketch, i, 736.  
 Strohecker, Dr., xi, 588.  
 Stromeyer, August, obit., xii, 638.  
 Strong, water-gas process, viii, 375.  
 Strong's island, discovered, x, 138; views on, 141, 143.  
 Stronhal, V., experiments of, xii, 749.  
 Strontium, ix, 477.  
 Strophanthin, x, 300.  
 Strousberg, B. H., obit., ix, 622.  
 Structure of organisms, causes of, xii, 668.  
 Struve, Otto, experiments, ix, 47, 53; x, 594; xi, 51.  
 Stry, burning of, xi, 73.  
 Strychnine, identification of, xii, 109.  
 Strype, W. G., experiments by, viii, 113.  
 Stuart, Sir John, obit., i, 643.  
 Stuart, Villiers, ix, 279.  
 Stubbs, experiments, vi, 280.  
 Sturgeon, Daniel, obit., iii, 646.  
 Styron, x, 300.  
 Suakin, expedition in, viii, 300; railroad in, ix, 316.  
 Subsidies, Congress on, i, 166.  
 Substances, New, xi, 139; xii, 104.  
 Successions, intervention in cases of, vii, 627.  
 Succoth, ix, 19; x, 36.  
 Sudeikin, Col., murder of, xii, 724.  
 Suez Canal, the, effect of, ii, 263; profits of, 270; affected by the Turkish War, 271; cost of, to Egypt, 271; profits in 1878, iii, 268; value to Egypt, vii, 236; Granville's proposal, 363; enlargement of, viii, 307; condition in 1883, viii, 743; progress, ix, 311; x, 308; xi, 311; construction of, xii, 240; neutralization of, 242.  
 Suffrage, resolutions on interference with the right of, i, 180, 181; Garibaldi on universal, iv, 526; property qualification for, 771; agitation in Belgium for universal, vi, 59; restrictions upon, xii, 245. See Reforms and Women.  
 Sugar, culture in Minnesota, iii, 568; commerce in, iv, 169; test for, v, 94; culture in Queens-

land, vii, 44; in Cuba, viii, 264; xii, 216; duty on, viii, 219; tests, etc., viii, 745; law in Belgium, ix, 80; tax in France, 343; crisis in trade, 379; new kind, x, 154; xi, 139; refining of, in Ohili, xii, 115; bounties, 345.  
 Suleiman Bey Sami, obit., viii, 605.  
 Suleiman Pasha, sketch, ii, 703; obit., viii, 605.  
 Suleiman Nyasi, x, 318.  
 Sul Hippi, x, 752.  
 Sullivan, Alexander M., obit., ix, 622; x, 713.  
 Sullivan, Algernon S., obit., xii, 615.  
 Sullivan, Sir Edward, obit., x, 670.  
 Sulphur, new oxide of, i, 93; as a mordant, 99; new process, vii, 90; test for, viii, 112; from alkali waste, 115; discovery of, xi, 556; xii, 307; process for extracting, ix, 122.  
 Sulphur-Alcohol, xii, 678.  
 Sulphurets, reducing action of, ii, 93.  
 Sulphur Springs, x, 598.  
 Sultan, plot to dethrone the, xii, 773.  
 Sulu, cession of, to North Borneo Company, vi, 329.  
 Sumatra, revolt in, iii, 597, 598; vii, 590; viii, 557; war in. See Acheen.  
 Sun, the, observations on, i, 44, 45; utilizing the heat of, 519; oxygen in, ii, 42; iv, 130; spots, cycle of, ii, 42; explosion, ii, 43; total eclipse, iii, 33; vii, 33; viii, 20; xii, 41; spots, iii, 35; iv, 51; v, 33; vii, 33; ix, 49; x, 47; connection of the spots with the auroræ, x, 47; with the weather, xi, 49; parallax, v, 33; vi, 38; vii, 36; xii, 40; Siemens's theory, vii, 32; heat from, vii, 33; xi, 49; spectrum of the corona, iv, 134; xi, 49; disturbances in, vi, 38; viii, 20; physical constitution of, ix, 48.  
 Sunday Laws, iv, 667; in Maryland, 591; in Texas, 880; in Ohio, vi, 699; in California, viii, 78.  
 Sunday-schools, in India, i, 405; Raikes anniversary, v, 674.  
 Sunderland, Thomas, obit., xi, 703.  
 Sungari, sources of the, discovered, xii, 311.  
 Sungarians, revolt of, ii, 101.  
 Sunsets, red, x, 48; xi, 54, 546.  
 Sunshine, recording of, x, 588.  
 Surand, Gustave, x, 358.  
 Surgery, process in, vi, 555; viii, 747; ix, 746; x, 742; recent books on, see Literature, in every volume.  
 Susiana, excavations in, xi, 26.  
 Suspensions from office, xi, 238.  
 Suspension bridge, Brooklyn, illustration, i, 257.

- Sutherland, Josiah, obit., xii, 615.  
 Suro Tunnel, the, iii, 288.  
 Sutter, John A., sketch, v, 674.  
 Sutton, George L., invention by, xi, 748.  
 Sutton, Henry, invention by, vii, 266.  
 Sutton's battery, vii, 266.  
 Sverdrup, Johan, x, 745.  
 Swaim, Gen. D. G., trial, ix, 776.  
 Swamp-Lands, reclamation of, iv, 625; vi, 251.  
 Swan, electric lamp of, vii, 275; ix, 305; illustration, 308.  
 Swann, Thomas, obit., viii, 595.  
 Swat, the Akhund of, authority of, see Afghanistan, ii, 4, 6; hatred for British influence, 7; iii, 582; obit., 648.  
 Swayne, Noah H., obit., ix, 612.  
 Swaziland, xii, 93.  
 Sweat-ducts, effect of closing the, v, 356.  
 Sweden and Norway, statistics, government, legislative proceedings, etc., in each volume; Sweden: views in, i, 737, 738; ii, 705; the King's address to parliament, i, 738; the Council of State made a ministry, 738; metrical system, 738; army bill, iii, 777; the island of St. Bartholomew ceded to France, 777; emigration, vii, 769; the constitution of Sweden, viii, 754; Norway: admitted to the monetary union, i, 738; railroads and telegraphs, ii, 704; railroad loans, iii, 777; royal vetoes and dead-lock, v, 676; cabinet changes, 675, 676; radical party, vi, 827; Republican movement, vii, 771; constitutional monarchies under one king, vii, 767; Norway a republic of peasants, 771; conflicts between the King and Storting, 771; Björnsterne Bjørnsen leader of the peasant party, 772; political crisis, viii, 755; ministers impeached, new ministry, ix, 751, 752; conflict with Sweden, x, 745; sentiment in favor of separation, 745; ministerial crisis, xii, 754.  
 Swedenborgians. See New Church.  
 Sweets, disease from use of, viii, 289.  
 Sweetser, Seth, obit., iii, 646.  
 Swift, Edward D. T., xi, 57; x, 53.  
 Switt, Lewis, discoveries by, ii, 46; iii, 83, 86; iv, 51; v, 85; vi, 88, 89; prizes to, iii, 89; vii, 41; observatory for, v, 86; discoveries, x, 51, 53, 56; xii, 45.  
 Swinhoe, R., obit., ii, 612.  
 Swisshelm, Jane Grey, obit., ix, 612.  
 Swiss lakes, soundings in the, xii, 313.  
 Switzerland, statistics, government, etc., in every volume; views in, i, 739; ii, 705, 706; cantonal constitutions adopted, i, 739; difficulty in Ticino, 739; international postal congress, 740; uniform citizenship law, 740; St. Gothard tunnel and railway, ii, 706; iii, 778; v, 667; capital punishment restored, iv, 825; school act, 825; military defenses, v, 676; vii, 775; bill for separation of church and state rejected, v, 676, 677; rectification of Baden boundary, 677; rights of asylum, vi, 829; Socialist congress forbidden, 829; the Savoy question, 829; land-slips, 830; Col. Frei, vii, 775; ix, 754; x, 746; religious conflict, viii, 756; salvation army, 756; ix, 754; Mormon agents, 754; conflict with Ticino, 754; expulsion of Anarchists, 754; x, 746; withdrawal from the Latin Union, ix, 754; international conference, 755; the temperance question, x, 746; the church question in Ticino, 746; the Simplon tunnel, 746; copyright conference, x, 746; xi, 810; xii, 755.  
 Swords, Thomas, obit., xi, 703.  
 Sybaris, contemplated excavations at, xii, 22.  
 Sydney, Australia, exhibition at, ii, 52; iii, 55; v, 40; Parliament buildings, illustration, iv, 58.  
 Synge, Col., captivity of, v, 690.  
 Syntheses, new, v, 96.  
 Syracuse, N. Y., growth of, xi, 186.  
 Syr Darya, diversion of the, viii, 309.  
 Syzygium jambolanum, x, 300.  
 Szechenyi, Count Stephen, explorations by, v, 289; sketch, 371; statue of, 371.  
 Taafe, Count Eduard, sketch, iv, 60; x, 71.  
 Tabriz, city gate of, illustration, ii, 637.  
 Taché, Archbishop, x, 711.  
 Tacitus, quoted, ix, 600.  
 Tadjika, the, x, 3, 8.  
 Taft, Alphonzo, sketch, i, 740.  
 Tag-envelopes, registered package, xii, 688.  
 Taghioni, M., ix, 310; obit., ix, 623.  
 Tahpanhes, palace of, and ruins of, illustrations, xi, 28, 29.  
 Tahiti, annexed to France, v, 40.  
 Taimyr-Land, discoveries in, iii, 356, 357.  
 Tainter, experiments by, vi, 257, 787.  
 Tait, Archibald Campbell, sketch and portrait, vii, 775.  
 Tait, Lawson, investigations by, x, 742.  
 Takale, ix, 301.  
 Talbot, Sir Charles, obit., i, 643.  
 Talbot, Joseph, obit., viii, 595.  
 Talbot, Thomas, iii, 535.  
 Talbot, W. H. F., obit., ii, 612.

Talcott, John Ledyard, obit., xii, 615.  
 Taljanzeff, experiments, viii, 632.  
 Tallahassee, Fla., university at, ix, 331.  
 Tamaniel, battle of, ix, 295.  
 Tamerese, xii, 730.  
 Tamsui, siege of, ix, 143.  
 Tanis, relics at, ix, 20.  
 Tanganika, Lake, outlet of, v, 297.  
 Tangyet Woon, xi, 115.  
 Tannate of punicine, x, 300.  
 Tannin, estimation of, ix, 123.  
 Tanno cannabine, ix, 272.  
 Tapestries, ix, 787.  
 Tappan, H. P., obit., vi, 689.  
 Tappan, Mason Weare, obit., xi, 708.  
 Tappeiner, experiments by, x, 694.  
 Tarafat, Madagascar, fight at, x, 565.  
 Tarawera, Mt., eruption of, xi, 66.  
 Tarbox, John Kemble, obit., xii, 615.  
 Tariff, in Argentine Republic, ii, 32; Austria, 56, 58; iii, 42; x, 70; France and Germany, ii, 114; iv, 435; Mexico, iii, 553; Brazil, v, 63; Chili, 97; Canada, 213, 219; iv, 317; Peru, vi, 735; Spain, vii, 752; effect of high, in Germany, viii, 394; United States, Presidents on, ii, 667; viii, 160; bill for commission, v, 172; vii, 189; Morrison's bill, ix, 203; Russian, x, 716. See Tariff Revision.  
 Tariff Revision, vii, 777; viii, 193; text of act, 194; xi, 252; in Germany, x, 416.  
 Tariff War, between Austria and Germany, x, 70; France and Roumania, 377.  
 Tarim River, explored, xii, 310.  
 Tarnoczy, Archbishop, obit., i, 643.  
 Tarpom or tarpum. See Tarpon.  
 Tarpon, the, illustration, xii, 756.  
 Taschereau, Cardinal, xii, 716, 717.  
 Tattgrain, Francis, xii, 275.  
 Taunton, recent growth of, xi, 187.  
 Tasmania, viii, 36; ix, 60; queen and last native of, i, 53; tin-mines in, vi, 44; gold, 47; x, 66; xi, 64; xii, 48.  
 Taxation, in Italy, iv, 524; v, 408, 409; vi, 449; in Austria, v, 44; viii, 42; in Great Britain, vi, 362; remission of, in Prussia, vi, 775; in India, vii, 416; in Russia, 733; in United States, President Arthur on, vi, 780; on reduction of, viii, 160; of State property, vii, 409; of sectarian asylums, iv, 721; of mortgages and mortgaged property, iv, 598, 673; vi, 535; reduction, viii, 789; ix, 786; of national banks, x, 621; reform, x, 770; of national bank shares, 621. For State laws, see under titles of States.

Tay Bridge, the, x, 328; construction pontoon, illustration, 328.  
 Tayler, Robert W., obit., iii, 646.  
 Taylor, Arthur F., obit., viii, 595.  
 Taylor, Bayard, sketch, iii, 778.  
 Taylor, Benjamin F., obit. and portrait, xii, 755.  
 Taylor, Gen. Sir Henry G. A., i, 643.  
 Taylor, Sir Henry, author, xi, 727.  
 Taylor, Isaac, ix, 23.  
 Taylor, Judge, opinion, x, 323.  
 Taylor, Richard, sketch, iv, 825.  
 Taylor, S., experiments by, iii, 727.  
 Taylor, Tom, obit., v, 603.  
 Taylor, William, obit., xi, 704.  
 Taylor, W. B., theory of, viii, 24.  
 Tcherkaskij, Prince, obit., iii, 662.  
 Tohernajeff, Gen., x, 6.  
 Tchernytchevsky, nihilism of, iv, 683.  
 Tebbutt, J., discovery by, vi, 38.  
 Tecchini, F., observations by, xi, 49, 546.  
 Tecchio, Sebastiano, obit., xi, 727.  
 Tees River, breakwater on, iii, 287.  
 Teheran, old south gate of, illustration, ii, 638.  
 Tehuantepec Ship Railroad, ix, 312; x, 591; xii, 230, 502.  
 Teimene tribe, the, x, 8.  
 Teisserenc de Bort, ii, 320.  
 Tekke Turkomans, the, x, 7.  
 Telegram Company, Reuter's xi, 636.  
 Telegraph companies, contest between, v, 417; suits against, viii, 576; confidential nature of messages, iv, 533; conference, tariff adopted, x, 420.  
 Telegraphs, subterranean, ii, 278; iv, 347; v, 252; ocean, iv, 346; v, 242, 251, 252; in Costa Rica, xii, 211.  
 Telegraph system, Signal-Service, iv, 816.  
 Telegraphs and Telephones, statistics of, i, 240; vii, 119, 785.  
 Telegraphy, improvements in, i, 515, 520; vi, 255, 256; synchronous, ix, 309.  
 Teleki, Count, obit., i, 643.  
 Tel-el-Mashkutah, x, 35.  
 Tel-el-Yehoodieh, cemeteries of, xii, 18.  
 Telephone, the, i, 740; ii, 706; statistics, vii, 785; ix, 807; illustrations, ii, 707, 708; xi, 811; mechanical, xi, 811; litigation concerning the patent, xii, 649.  
 Telescope, the Lick, x, 54.  
 Telescopes, manufacture of, xii, 137.  
 Tell Defenneh, xi, 28.  
 Teller, Henry M., portrait, vii, 811.  
 Tellkampf, J. L., sketch, i, 741.  
 Tell Nebesh, excavations at, xi, 27.

- Tellurium, new oxide of, viii, 111; in copper, ix, 477.
- Telpherage, viii, 679.
- Téméraire, the, illustration, vii, 569.
- Tempel, discoveries, ii, 46; iv, 51.
- Tempel's comet, x, 50.
- Temperance, local-option laws, iii, 519; iv, 421; viii, 519; civil damages, iii, 625; iv, 516, 599; high license; vii, 567; viii, 546; Scott act, vi, 219; screen-law, 539; Pond bill, vii, 658; resolution in Parliament on, iv, 456; v, 842; decisions on questions of, iv, 579, 592; vi, 467; vii, 448; Downing law, ix, 532; agitation in Canada, ix, 268; in Switzerland, x, 746; local-option law in Georgia, 409; xi, 252. See also Prohibition, viii, 661. For conventions and State acts, see under titles of States.
- Temperature, sense of, x, 689; determination of the rate of, xi, 540; conditions that affect, xii, 488; observations of, in Russia, 488; of the ocean, 489; at Boston, England, and at Mount Washington, 489; effect of, on the blood, 673.
- Temple, Sir Richard, ix, 46.
- Temple of Amphiaraus, xi, 84.
- Temple of Bubastis, xii, 19.
- Temple of Jupiter Olympius, xii, 21.
- Temporal Power, the, Spanish Cortes on, ii, 699. See Papacy.
- Tenants, compensation for improvements by, viii, 410.
- Tenduf, vi, 327.
- Tengkoë Arab, spiritual chief of the XXVI, v, 555.
- Tennessee, statistics, government, legislative proceedings, elections, etc., in every volume; views in, i, 744; ii, 711; commission of agriculture, statistics, and mines, i, 741; State debt, i, 742, ii, 708, 710; iii, 780; iv, 827; vi, 830, 831; viii, 757; James D. Porter elected governor, and Judge Bailey senator, i, 745; Bank of Tennessee, ii, 711; Albert S. Marks elected governor, iii, 782; sketch of his life, 784; decision on the legal status of the Southern States during the war, 784; bill to abolish fees, iv, 826; repudiation of railroad bonds, 827; repeal of the Memphis charter and others, 829; debt of Memphis, 829; yellow fever, 829; Alvin Hawkins elected governor, v, 677, 681; education, penal institutions, 681, 682; increase of representatives, vi, 831; mineral wealth, vii, 789; manufactures, 790; Governor W. B. Bates, viii, 756; ix, 756; ochre deposits discovered, ix, 757; timber, 757; peanuts, x, 748; xii, 758; Robert L. Taylor elected governor, xi, 813.
- Tenney, Sanborn, obit., ii, 589.
- Tenney, Sarah M. B., obit., i, 624.
- Tenney, William J., sketch, portrait, viii, 758.
- Tenno (Mikado), the, ix, 416.
- Tenom, rajah of, ix, 558.
- Tenure-of-Office Act, x, 432.
- Te Rama Rao, volcano of, ix, 275, 276.
- Tergukassoff, A. A., sketch, ii, 712.
- Terhune, John, obit., xi, 704.
- Terra-cotta, ix, 246.
- Terra del Fuego, x, 41; xii, 815; character of the Fuegians, x, 41, 42.
- Terrapin-Culture, x, 748.
- Terreros, Gen., x, 142.
- Terriers, ix, 260, 261.
- Territories, United States, survey of, i, 338; iii, 336; admission of, ix, 213.
- Terry, Gen. Alfred H., i, 43; x, 429.
- Teschenberg, Ernest von, obit., xi, 727.
- Test-oath, repeal, ix, 208.
- Tetnuld, Mt., in the Caucasus, xii, 313.
- Teuffel, W. G., obit., iii, 662.
- Teusch, Dr., xi, 382.
- Tewfik Bey, death of, viii, 302.
- Tewfik I, x, 305, 307. See Mohammed Tewfik.
- Tewksbury Almshouse, Gov. Butler's charges, viii, 517.
- Te Whiti, vii, 45.
- Texas, statistics, legislative proceedings, government, elections, etc., in every volume; view in, xi, 814; new constitution, i, 745, 747; land-office, 747; election of Senator Ooke, 747; the Rio Grande crossed by an armed band, ii, 712; the criminals demanded of the Mexican government, and the reply, 713, 714; further troubles, 714; natural advantages of the State, 714; sketch of Gov. Roberts, iii, 787; cotton-crop, cattle-trade, 786; constitutional amendments, iv, 829; vi, 836; xii, 760; land-frauds, iv, 831; fugitive criminals, 831, 832; school-lands, v, 685; cost of frontier battalion, vi, 884; State capitol burned, 837; Gould system of roads, 835, 836; export trade at Galveston, 836; fire in, x, 749; new capitol, vii, 794; xi, 815; the governor's course as to convicts, etc., vii, 795; resources, soil, and climate, 795; John Ireland governor, viii, 758; fire in Galveston, x, 749; drought, xi, 815; Greer county, xii, 760.



- Texas Indemnity stock, vii, 899.  
 Textile fiber, a new, xii, 140.  
 Textile manufactures, improvements in, vi, 543.  
 Text-books, recent. See Literature, in every volume.  
 Thacher, George Hornell, obit., xii, 616.  
 Thackray, George E., experiments by, xi, 534.  
 Thalberg, xi, 48.  
 Thalline, x, 800.  
 Thalophytes, ix, 93.  
 Thamnoi, battle at, x, 31.  
 Thanksgiving-day, Japanese, xi, 459.  
 Thasos, ruins at, xii, 22.  
 Thatcher, Thomas Antony, obit., xi, 704.  
 Thaxter, Benjamin, obit., xi, 704.  
 Thaxter, Edward R., obit., vi, 689.  
 Thayer, Nathaniel, obit., viii, 595.  
 Thayer, Thomas, B., obit., xi, 704.  
 Thebaud, Dr. J. S., obit., i, 625.  
 Thebaw, King, iv, 100; attempt to assassinate, v, 69; position of, vii, 416; x, 113, 114, 115; xii, 81.  
 Thebes, royal mummies at, vii, 261.  
 Thein, detection of, ii, 95.  
 Theistic Church, ix, 759.  
 Thekut, x, 86.  
 Themistocles, wall of, x, 86.  
 Theological Schools in the United States, viii, 760.  
 Theology, recent books of. See Literature, in every volume.  
 Thermo-Chemistry, discovery in, iii, 90.  
 Thessaly, anarchy and brigandage in, v, 690.  
 Thetis, the, ix, 29 *et seq.*  
 Thibaudin, M., viii, 357, 366, 367.  
 Thibaut, M., x, 155.  
 Thibet, explorations in, i, 329; iii, 359; iv, 399; v, 289; ix, 348; x, 395, 396, 397; xi, 377; cause of difficult access, iv, 400; productions, 400, 401; proposed mission to, xi, 489.  
 Thiers, L. A., sketch, ii, 715; address of, to electors, 315.  
 Thionville, defense of, x, 480.  
 Thiophen, ix, 123.  
 Thollon, observations by, viii, 20, 25.  
 Tholuck, F. A. G., obit., ii, 612.  
 Thomas, Benjamin F., obit., iii, 646.  
 Thomas, Edward, obit., xi, 727.  
 Thomas, Gen. George H., x, 428.  
 Thomas, Francis, obit., i, 625.  
 Thomas, Sidney G., invention by, v, 208; obit., x, 670.  
 Thompson and Houston, invention by, iii, 279; vii, 266.  
 Thompson, Elizabeth, ix, 44.  
 Thompson, George, obit., iii, 662.  
 Thompson, Jacob B., x, 159.  
 Thompson, Joseph P., obit., iv, 696.  
 Thompson, L., discovery by, iii, 84.  
 Thompson, Launt, x, 362; xii, 280.  
 Thompson, Robert L., observations by, xi, 536.  
 Thompson, Richard W., sketch, ii, 716.  
 Thompson, S. P., theory of electricity, vi, 240.  
 Thompson, William Tappan, obit., vii, 348.  
 Thoms, William J., obit., x, 670.  
 Thomsen, Julius, experiments by, ii, 499.  
 Thomson, Sir O. Wyville, expedition of, vii, 381; obit., 647.  
 Thomson, Elihu, xii, 486.  
 Thomson, Joseph, explorations by, iv, 402; v, 296; viii, 385; ix, 347, 545; x, 393, 395.  
 Thomson, J. J., xii, 100.  
 Thomson, R. T., xii, 108.  
 Thomson, Sir William, inventions and researches of, ii, 498; iii, 351; iv, 419; vi, 239, 253, 255; vii, 223, 269; viii, 116; ix, 46.  
 Thorington, James, obit., xii, 616.  
 Thorium, x, 153.  
 Thorne, Charles R., obit., viii, 596.  
 Thorne, John S., obit., v, 596.  
 Thornton, Sir Edward, x, 4, 11.  
 Thornton, John W., obit., iii, 646.  
 Thorpe, Prof., xii, 110, 111.  
 Thorpe, Thomas B., sketch, iii, 788.  
 Thorwaldsen museum, illustration, i, 228.  
 Thousand Islands, the, vi, 838.  
 Thoulet, M. J., xii, 816.  
 Thrasher, John S., obit., iv, 696.  
 Thrift Congress, iii, 314.  
 Thuku-t (Pithom), x, 36.  
 Thuong, Regent of Anam, obit., xi, 728.  
 Thursday Island, fortified, x, 61.  
 Thurston, F. T., discoveries, vi, 542; ix, 46, 477, 478, 737.  
 Thurston, J. B., x, 420.  
 Thuen-Quan Fort, besieged, French losses at, x, 26.  
 Thuyet, x, 30, 31.  
 Thury, M., ix, 519.  
 Thymol as an anti-ferment, i, 95.  
 Thyroidectomy, ix, 748.  
 Thyroid gland, the, x, 695.  
 Tiberias, city of, xii, 25.  
 Tidemand, Adolf, sketch, i, 747.  
 Tidy, Meymott, on water analysis, iii, 91.

- Tientsin, treaties of, x, 28, 29.  
 Tierra de la Guerra, v, 298.  
 Tiff, or baryta, use of, in white lead, iv, 639, 640.  
 Tilbury docks, x, 333.  
 Tilden, Moses Y., obit., i, 625.  
 Tilden, Samuel J., sketch and portrait, i, 748; his nomination, 785; letters from, iii, 717; v, 697; obit. and portrait, xi, 815.  
 Tilden, W. A., xi, 137; xii, 102.  
 Tiles, ix, 248.  
 Tileston, William M., obit., v, 596.  
 Tilghman, Richard O., obit., iv, 697.  
 Tillamook Light-house, vii, 288; illustration, v, 448.  
 Tilton, John Rollin, xi, 347.  
 Timbuctoo, vi, 328.  
 Time, standard and cosmopolitan, colored map, viii, 761; signals, ix, 48; system of universal, 54; reckoning, xi, 59.  
 Timoffski, i, 323.  
 Timor Island, revolt in, xii, 684.  
 Tin, alloys of, iv, 4; deterioration of, vii, 583; viii, 116; in Dakota, 523; market, ix, 460.  
 Tindall, Admiral, obit., i, 643.  
 Tinedek, xi, 115.  
 Tippoo Tip, x, 795; xii, 251.  
 Tirard, Pierre E., sketch, iv, 386; viii, 357, 367.  
 Tirard cabinet, the, xii, 297.  
 Tirhakah, King, ix, 20.  
 Tiryna, excavations at, ix, 23; x, 37; xi, 33.  
 Tisdell, N. P., report of, on the Congo region, x, 192, 193.  
 Tisserand, observations, iii, 86.  
 Tissot, Charles J., obit., ix, 623.  
 Tissues, process for examining, ix, 124.  
 Tisza, Koloman, ix, 70; xii, 51.  
 Tithes, in Quebec, viii, 674.  
 Titian, sale of a picture by, x, 86.  
 Titiens, Theresa, obit., ii, 612.  
 Toadstools and Mushrooms, xi, 590.  
 Tobacco, commerce in, iv, 170; cultivation of seed, v, 197; inspection, vii, 463; monopoly in Germany, 356; injured by manures, x, 274.  
 Tobias, Laging, x, 625.  
 Tobler, Titus, obit., ii, 612.  
 Tobogganing, ix, 759.  
 Toqueville, Count de, obit., i, 644.  
 Todleben, E. F. I., sketch, ii, 716; obit. and portrait, ix, 761.  
 Toggle-press, illustration, xi, 735.  
 Togo negroes, ix, 365.  
 Tokar, battle of, ix, 292, 293.  
 Tokio, University of, vi, 453.  
 Toll, Baron E. von, xii, 316.  
 Toledo, Ohio, growth of, xi, 187.  
 Tolles, ix, 508, 509, 512, 514.  
 Toloachi plant, the, viii, 538.  
 Tolstoi, Alexis, i, 475.  
 Tolstoi, Demetrius, v, 346.  
 Tolstoi, Count Lyof, i, 475; x, 546; xi, 442.  
 Tolstoi, Count, vii, 736; ix, 709.  
 Tombs, in Spain, xii, 23; of Sidon, see Sidon.  
 Tommasi, experiments, iv, 444.  
 Tom Thumb, obit., viii, 596.  
 Tonic Sol-fa, ix, 545; illustrations, 549, 550.  
 Tonga Islands, the, ix, 366; church trouble in, x, 588.  
 Tonite, x, 343.  
 Tonquin, war in, viii, 370; article, map, viii, 763; ix, 137-143, 338, 340; x, 24 *et seq.*; cost of the campaign to France, 27, 28; massacre of Christians in, 31; x, 170 *et seq.*; the war unpopular with French radicals, 375; "the sinister man of," 380.  
 Toomath, John, obit., i, 625.  
 Toombs, Robert, obit., x, 749.  
 Tooth, Rev. Arthur, case of, ii, 19 *et seq.*  
 Topanovich, Col., x, 729.  
 Topeka, Kansas, growth of, xi, 187; Capitol at, illustration, ii, 416.  
 Topnaars, the, x, 138.  
 Torlonia, Alessandro, obit., xi, 728.  
 Tornado, in Iowa, vii, 483.  
 Tornadoes, prediction of, x, 581.  
 Toronto, Canada, growth of, xii, 130; views in, ii, 255; xii, 131.  
 Torpedoes, ii, 717; illustrations, 717, 718, 719.  
 Torrens, Sir Robert, his system of land-transfer, x, 674.  
 Tortuga, island of, xii, 357.  
 Total depravity, x, 708.  
 Totten, O. L., invention, ii, 626.  
 Totten, George M., obit., ix, 618.  
 Tousey, Sinclair, obit., xii, 616.  
 Tower of London, the, illustration, ii, 364; explosion at, ix, 378; x, 454.  
 Townsend, Charles, v, 608.  
 Tracy, Phineas L., obit., i, 625.  
 Trade commission, South American, x, 165.  
 Trade-dollars, x, 246, 282; redemption of, xii, 201.  
 Trade-marks, decision on, iii, 831; x, 682; patents, copyright laws relating to, xii, 204.  
 Trade Union Congress, xi, 359.  
 Trafalgar Square, London, illustration, ii, 361.  
 Trampa, iv, 307, 516, 663, 675, 686, 715, 848; vi, 6.

Trans-Caspian lands explored, xii, 307; railroad, x, 16.

Transfusion, ix, 748.

Transits of planets. See article *Astronomical Progress*, in each volume.

Transportation, bill for commission, v, 188; on the Mississippi, 488.

Transvaal Republic, war in, i, 748; annexation to the British Empire, ii, 7, 721; dissatisfaction in, iv, 128; revolt in, v, 81, 83; independence, vi, 4; outbreak, 86; settlement, 88, 859; feeling in Holland, 626; troubles in, viii, 92; ix, 115.

Traube, Ludwig, obit., i, 644.

Traube, M., theory of, viii, 120; researches by, xii, 108.

Traumaticene, ix, 278.

Travancore, Rajah of, v, 386.

Travel, recent books of. See *Literature*, in every volume.

Travers, William Priggin, obit., xii, 616.

Traversi, Dr., travels of, xii, 304.

Treadwell, John P., obit., i, 625.

Treason-trials at Leipsic, xi, 826.

Treasury surplus, xi, 263.

Treat, Selah B., obit., ii, 589.

Treat, Samuel H., obit., xii, 617.

Treaties: extradition, xi, 456, 822; xii, 346; literary, xii, 140; secret, between Austria and Russia, xii, 51; reciprocity, between Great Britain and Spain, xi, 276; between Germany, Austria-Hungary, and Italy, xii, 328, 399; power of United States, xii, 760; boundary, between France and Portugal, xi, 371; of peace, between Bulgaria and Servia, xi, 102; of China with other nations, xi, 156; xii, 117, 684; notice of termination of, by Brazil, xi, 93; of Berlin, see *Berlin*, treaty of. Other treaties of importance will be found referred to under the names of the countries making them.

Treaty, right of Government to make a, viii, 396.

Tree-planting, xii, 765.

Trelawney, Edward J., sketch, vi, 388.

Tremain, Lyman, obit., iii, 646.

Trench, Richard Chenevix, obit. and portrait, xi, 820.

Trenchard, Stephen D., obit., viii, 596.

Trenholm, George A., obit., i, 625.

Trenton, growth of, xii, 132; illustration, ii, 552.

Trépied, observations, vii, 87.

Tresca, experiments by, vi, 255.

Trescott, T. C., xii, 107.

Trespass suits, in Illinois, v, 381.

Trevelyan, Charles, obit., xi, 728.

Trevelyan, Charles E., ix, 690; xi, 399.

Trevisanato, Cardinal, obit., ii, 618.

Trials, criminal, vii, 182; for bribery in New York, xii, 555; for treason in Germany, xii, 326.

Trichinosis. See *Pork*, viii, 643.

Tricycles, ix, 85; illustration, 85.

Tridæma squamosa, the, x, 85.

Trieste, five hundredth anniversary of union with Austria, vii, 54; harbor-works of, viii, 306.

Trikoupis, xi, 411.

Trinidad, ix, 802; fire in, 802; asphaltum in, 808; xii, 801.

Triple Alliance, the, viii, 452; xii, 328, 399.

Tristan d'Acunha, island of, xii, 316.

Trn, fighting at, x, 728.

Troad, researches in the, ix, 25.

Trolle, Henrik Af, obit., xi, 728.

Trollope, Anthony, sketch, vii, 798.

Tromholt, S., experiments by, viii, 30, 383.

Trommel, experiments by, iii, 91.

Trouvelot, observations by, i, 46; iii, 37; ix, 51.

Trow, John F., obit., xi, 704.

Troy, site of ancient, ix, 24.

Troy, N. Y., recent growth of, xi, 188.

Troyon, Constant, xi, 846.

Trujillo, Gen. Julian, iii, 103.

Trumbull, Henry C., explorations by, ix, 27.

Trumbull, John, x, 677.

Trumpeter, the, x, 618.

Truss bridge, at Rock Island, illustration, i, 414.

Trust companies, x, 293.

Truxtun, William Talbot, obit., xii, 617.

Tryon, D. W., xi, 346; xii, 278.

Trypsin, x, 301.

Tsaribrod, fight at, x, 781.

Tschabuschnigg, Adolf Ritter von, obit., ii, 613.

Tseng, Marquis, x, 27, 28.

Tso-Tsung-t'ang, v, 105; obit., x, 670.

Tsuchiakabe, Japanese drug called, xi, 292.

Tubercle bacillus, viii, 770.

Tuberculosis, bacterial origin of, vii, 798; ix, 663.

Tuckerman, Edward, obit., xi, 705.

Tucson, Arizona, xii, 132.

Tu Duc, Emperor of Anam, obit., viii, 605; x, 80, 82.

Tufts, Charles, obit., i, 625.

Tuileries and Louvre, the, illustration, ii, 810.  
 Tulane, Paul, obit., xii, 617; his donations, vii, 484.  
 Tulipine, x, 802.  
 Tulloch, John, obit., xi, 705.  
 Tundra, or Thadden Island, vii, 838.  
 Tungurahua, eruption of, xi, 806.  
 Tungus, the, vii, 838.  
 Tunis, i, 9; French intervention in, vi, 809, 811, 449, 840; Italian excitement over, vi, 448; vii, 437; treaty, 822; viii, 858; ix, 838, 840; x, 881; xii, 298.  
 Tunkers. See the articles on Baptists, in each volume.  
 Tunnels, i, 255; ventilation of, vi, 248; spiral, *ibid.*; restoration of an old Roman, 249; the Hudson River, ii, 278; iii, 291; disaster at, v, 580; vii, 281; Baltimore, ii, 278; cost of Hoosac, vi, 537; Severn, ii, 278; vi, 249; vii, 282; British Channel, iv, 340; vi, 243, 248; panic concerning, vii, 284; viii, 806; Mersey, viii, 81; x, 831; illustrations, xi, 316, 817; in Saxony, ii, 278; St. Gothard, iii, 280; iv, 340; v, 246; vi, 248, 819; vii, 11, 280; Mont Cenis, v, 247; Arlberg, vi, 243, 244, 247; vii, 281; viii, 810; x, 831; proposed Simplon, vii, 11; through the Pyrenees, vi, 243; through Popocatepetl, viii, 537; illustration of the, at Hallett's Point, i, 880; xi, 816; Severn Railway, 817; Big Bend, 818; at Stockholm, illustration, 819; submarine, 819; of Galeria, 752.  
 Tupman, G. L., observations by, iii, 86; iv, 58.  
 Turco-Greek commission, the, iv, 459.  
 Turf, ten years' record of the, xii, 767.  
 Turgenieff, Ivan, sketch and portrait, viii, 771.  
 Turkey, the, x, 890.  
 Turkey, statistics, government, etc., in every volume; maps, i, 750, 755; ii, 722, 723, 781, 782, 787; iii, 789; views in, i, 756, 757, 759, 762, 765, 768; ii, 725, 729, 733, 736; religions and nationalities of, i, 753; the Danube commission, 753; Servia, Montenegro, 753, 754, 761, 762; the Andrassy note, 754; threats of war, 756; relief of Nicsic—victory by Raouf Pasha, 756; Mukhtar Pasha takes command, 756; reforms promised, 756; the Bosnian commission, 756; Herzegovinian insurgents reject the provisions of the Andrassy note, 757; demands of insurgents, 758; military encounters, 758; expedition of Liubibratica, 758; attacks of Mukhtar Pasha, 758, 759; massacre at Salonica, 759, 760; conference at Berlin, 760; dethrone-

ment of Abdul-Aziz, 760; Murad V becomes Sultan, 760; death of Abdul and murder of ministers, 760, 761; Ristich-Grutch ministry, 761; declaration of war, 762; military resources of the belligerents, 762, 763; Servians storm Bielina—are beaten back on the Timok, 763, 764; army of the Ibar under Gen. Zach, 764; Montenegrins take Stolatz, 764; Turks take Saitchar, 765; Servians beaten at Mramor, 765; battles of Alexinatz and Plana, 765, 766; defeat of Turks, 767; Roumanian demands, 767; the convention of Ghent agreed to, 767, 768; Murad V insane and removed, 768; Abdul Hamid, Sultan, 768; armistice, 769; plot against the Sultan, 770; capture of Alexinatz, Russian interference, truce, 771; Midhat Pasha, Vizier, 773; new constitution, 773, 774; the three sultans, 774; Russia declares war, ii, 723; the Sultan deposed, 724; Bosnian insurrection, 725; the Danube closed by Russia, iii, 728; action on the river, 729, 730; scene of the war in Armenia, 730, 732; movements against Kars and Batoum, 732, 733; operations on the Black Sea and the Danube, 733, 735; in Armenia, 736; revolt in the Caucasus, 736; the Shipka Pass, 736, 741; Russian defeats—vessels sunk at the mouth of the Danube, 738, 739; Mehemet Ali removed from command, 741; movements of the British fleet, 743; Plevna, 740; its surrender, 744; Russian operations, iii, 738; treaty of San Stefano, 791; Greek invasion, 793; advance upon Constantinople, 793; English fleet ordered there, 793; Batoum occupied by the Russians, 796; revolt in Bagdad, 797; office of Grand Vizier abolished, iv, 833; Russian treaty of peace, 834; Albanian demands, v, 687; ministerial changes, 688; scheme of government for Asia Minor, 689; famines, 689, 690; murders, 690; captivity of Col. Syngé, 690; complication of the Eastern Question, vi, 839; the former Grand Vizier arrested on a charge of murdering Abdul-Aziz, vi, 841; Russian interference, 842; Albanian league, 842; financial schemes of the Sultan, vii, 802, 803; Said Pasha's proposed reforms, 803; discontent and sedition, 804; the Armenian question, viii, 773; action in reference to Bulgaria, x, 110; Cretan troubles, 774; x, 752; xii, 773; religious difficulties, ix, 764; war preparations, x, 751; disturbances in Albania, 752; agreement with

England on the Egyptian question, 755; treaty with the United States, xi, 822; palace intrigues, xii, 778; the œcumenical patriarchate, 778; the Montenegrin boundary, ix, 764; xii, 774; famine in Asia Minor, xii, 774; Turkish bath, illustration, ii, 725.

Turkistan, i, 775; ix, 712; annexed by Russia, x, 2; statistics of, 721.

Turkomania, x, 4; plains of, xii, 808.

Turkomans, robberies by, i, 7; Persian expedition against, 44; irruption of, 661; war with Russians, iv, 775; successes of, 776; turning of the Attrek, 776; character of, vi, 733; vii, 681; ix, 4; x, 2.

Turko-Russian War, the, i, 260, 756; ii, 269, 688, 688, 691; Russia's declaration of war, 688, 724; conference, 723; operations, 725-745; armistice, 745; treaty of peace, iii, 791; iv, 884; effect on markets, ii, 119. See Eastern Question.

Turnbull, Robert, sketch, ii, 745.

Turner, O. Y., prize awarded to, x, 861.

Turner, John, obit., ii, 589.

Turner, J., observations by, xi, 584.

Turner, Joseph M. W., xi, 844; sale of a picture by, x, 866.

Turner, W. G., statue by, x, 867.

Turpentine manufacture, iv, 428.

Turpin, Eugène, x, 153; x, 846.

Tuthill, Joseph H., obit., ii, 589.

Tuttle's Comet, x, 51.

Tuxedo Park, T. C. Van Buren's house at, illustration, xii, 370.

Tweed, William M., sketch, iii, 798; his trial, ix, 627.

Twosten, August D. C., sketch, i, 776.

Twiggle, James W., obit., iii, 646.

Twiss, Sir Travers, x, 191.

Tycho, in the moon, illustrations, xi, 586, 587.

Tycoon, the last, ix, 419.

Tyers, J. R., invention by, ix, 786.

Tyler, Dr. John E., obit., iii, 647.

Tyler, Gen. John S., obit., i, 625.

Tyler, Morris, obit., i, 625.

Tyler, Samuel, sketch, iii, 799.

Tyndall, John, on the germ theory, iii, 887; experiments by, vi, 787; ix, 804.

Tyng, Stephen H., obit., x, 654.

Tyre, researches at, ix, 28.

Tyrol, the, autonomy refused to, ii, 58; first Protestant church in, iv, 67; intolerance in, v, 45.

Tyson, explorations, iii, 858.

Uchatius, Baron von, his gun, i, 57; experiments by, ii, 500; obit., vi, 696.

Uffelmann, observations, vi, 749.

Uffington, Roman pavement in, illustration, ix, 22.

Uhde, Frederick, x, 862; xii, 276.

Uthoff, Dr., experiments by, x, 691.

Uhrich, Joseph Alexis, obit., xi, 728.

Uhrich, Jean Jacques Alexis, obit., xii, 638.

Ujfalvy, M. de, ethnologic researches of, ii, 827.

Ule, Otto E. V., sketch, i, 777.

Ulea Island, x, 189.

Uled-Bonasog, rebellion of, i, 21.

Uled-Sidi-Sheik, tribe of, i, 20.

Ulrich, Charles F., x, 861; xi, 846.

Ulrici, Hermann, obit., ix, 628.

Ulundi, battle of, iv, 126.

Ulysses, palace of, ix, 28.

Umbellulic acid, vii, 87.

Umnyamana, ix, 114, 115.

Umquikala, Chief, x, 186.

Uncle Tom, obit., viii, 596.

Underwood, Judge, x, 481.

Underwood, Joseph R., obit., i, 625.

Unitarians, statistics, etc., in vols. i, ii, iii, v, vii, ix, and xii; schools and societies, i, 777; national conference, i, 777; iii, 799; v, 691; ix, 765; German Protestant Union, i, 777; Hungarian synod, 778; ix, 765; xii, 775; British association, ii, 746; bureau of supply, iii, 799; American and foreign associations, 800; non-subscribing Presbyteriana, 800; finances, v, 691; benevolent societies, ix, 765; in Great Britain, 765; xii, 775; year-book, xii, 774, 775.

United Brethren Church, statistics, etc., in vols. i, ii, iii, v, vii, x, and xi; increase in numbers, i, 778; general conference, ii, 746; x, 755; missions, iii, 801; convention of clergymen and laymen, 801; collections, v, 691; xi, 822; bishops, v, 691; seminaries, 692; constitutional changes, xi, 823.

United States, article in every volume giving statistics, government, foreign relations, election returns, etc.; proceedings of Congress under the title Congress in every volume; army operations under the title Army of the United States in first seven volumes; census and map, see below, United States Census; center of population, see Population, Center of; finances, see Finances of the United States, and Financial Review; views in, i, 277, 503, 784, 786; Cabinet changes, i, 778; Centennial exhibition, see Exhibition,

- Centennial; presidential nominations and letters of acceptance, i, 781, 788, 785, 787, 790; settlement of the election question, 793; President Hayes's Cabinet, ii, 748; Federal troops withdrawn from South Carolina and Louisiana, 748; civil-service reform, 748; the silver bill, 750; fishery commission, 752; granger cases, 753; Bread-Winners' League, 751; Baltimore Convention, 752; question of fraud in the election, iii, 802; investigating committee, 802; origin of the present relations with China, iii, 810; sketch of the new Secretary of War, iv, 834; minister to Berlin, 834; the war-levy decided not to hold against the States, 835; Mormon emigration, 837; decline of the carrying trade, 837, 838; comparison of census returns, v, 692; changes in the Cabinet and diplomatic service, 692, 693; presidential nominations, etc., v, 698-696; Chinese treaty on immigration, 704; President Garfield's Cabinet, vi, 846; trouble with Senator Conkling on appointments, vi, 846; the murder of President Garfield, 846, 847; changes in the Cabinet under President Arthur, 848; star-route frauds, 848; trials, viii, 777; Sergeant Mason's offense, vi, 848; Cabinet changes, vii, 806, 807; trial and execution of the assassin of the President, 809; Capt. Howgate's arrest and escape, 810; efforts to secure peace between Peru and Chili, 810, 811; isthmus canal project, 813, 814; census, vii, 814-822; Indians captured by Gen. Crook, viii, 777, 778; pensions, 780; the treasury, reduction of taxation, 789; new bureaus and commissions, ix, 766; treaties, 767; the presidential election, 767-774; trial of Gen. Swaim, 776; the life-saving service, 777; prime meridian conference, 777; Washington monument, 777; sketches of members of President Cleveland's Cabinet, x, 756, 757; their portraits, 756-764; diplomatic and civil appointments, 757-759; the navy, 760; trouble with Indians, 764; coast defenses, 764; anti-polygamy act, 764; the fisheries, x, 764; Alaska, x, 765; xi, 826; xii, 779; Mexico and the Cutting case, xi, 825; claims of Greer County, Texas, 760; Cabinet changes, xii, 775; centennial of the constitution, 780.
- United States, census of, vii, 815; maps showing distribution of population, of foreign, and of colored, vi, 850.
- United States, exhibitions in, xi, 846.
- United States Finances, for 1883, viii, 781; for 1884, ix, 777; for 1885, x, 766; for 1886, xi, 827; for 1887, xii, 780.
- United States, fish-culture in, viii, 791.
- United Workmen, Ancient Order of, xii, 784.
- Universalists, statistics, general conventions, etc., in vols. i, ii, iii, v, vii, viii, ix, x, xi, and xii; societies and institutions, i, 798; amendment to the constitution, iii, 813; women's centenary association, iii, 813; viii, 811; ix, 787; x, 771; xi, 832; xii, 786; missions, vii, 822; the Winchester profession of faith, vii, 822; historical society, viii, 811; ix, 787; x, 771; xii, 786; the Brevoort mission, xii, 786.
- University federation, proposed, in Ontario, x, 675.
- University of Copenhagen, 400th anniversary of, iv, 818.
- Unruh, Herr von, obit., xi, 728.
- Upchurch, John J., obit., xii, 618.
- Upholstery, ix, 787.
- Upjohn, Richard, obit., iii, 647.
- Uppington, xi, 184.
- Uppington, Mr., x, 86, 87, 88.
- Upright, Elizabeth, case of, iv, 573.
- Upton, Winalow, xii, 493.
- Uranus, ellipticity of, viii, 24.
- Urdaneta, x, 776.
- Urea, formation of, viii, 637.
- Urethane, x, 801.
- Urgel, Count of, ix, 845.
- Uruguay, i, 794; vi, 857; troubles in, v, 16; viii, 811; ix, 789; x, 771; xii, 786.
- Usibepu, defeat of Cetewayo by, viii, 91; ix, 114, 115; x, 136.
- Uslar, Baron, i, 323.
- Usury, West Virginia, bill, iv, 845; Georgia law, vi, 334; effect of Kiernan law, vii, 117.
- Usutus, the, ix, 114.
- Utah, statistics, officers, etc., in volumes ii, iii, vi, viii, ix, x, xi, and xii; view in, ii, 756; recommendations of the Governor, ii, 755; finances, school-law, 755; polygamy, 755; iii, 813, 814; vi, 859, 860; viii, 812; ix, 791, 792; x, 773; xi, 833; xii, 789; death of Brigham Young, 756; accounts of, iii, 814; silk-culture, iii, 756; population, vi, 859; missionaries of Mormonism, 859; the hierarchy, the dominant power, 859; preachers and converts, 859, 860; reorganized church opposed to polygamy, 860; the Edmunds law, viii, 812; its operation, ix, 791; x, 773; xi, 833; Edmunds-Tucker act, xii, 789; edu-

- cation, x, 778; salt, x, 778; xi, 833; constitutional convention, xii, 788; prosecutions for bigamy, 789.  
 Utes, attack upon the, xii, 148.  
 Utica, N. Y., growth of, xi, 188.  
 Uvura, ix, 347.  
 Uzbecks, x, 2, 8.  
  
 Vaccination with disease, vi, 347.  
 Vail, Aaron S., obit., vi, 689.  
 Vakkan, province of, x, 2; its submission to Russia, xi, 5.  
 Valdau, G., xi, 373.  
 Valence, theory of, x, 149.  
 Valerii, palace of the, ix, 28.  
 Vallés, Jules, obit., x, 870.  
 Valparaiso, illustration, ii, 99.  
 Valuation and taxation in the States, vii, 409.  
 Vambery, Arminius, ii, 5; iii, 3.  
 Vanadium compounds, new, x, 154.  
 Vanata, Aloysius, obit., i, 625.  
 Vanatta, Jacob, obit., iv, 697.  
 Van Bokkelen, Mr., x, 468.  
 Van Brunt, Henry, x, 361.  
 Van Buren, William H., obit., viii, 596.  
 Van Camelbeke, Bishop, x, 31.  
 Vance, Albinus, v, 552.  
 Vanderbilt, Cornelius, sketch, ii, 756.  
 Vanderbilt, John, obit., ii, 589.  
 Vanderbilt, William H., obit. and portrait, x, 774; gift of, to New York city, ix, 595.  
 Vanderbilt University, gift to, x, 775.  
 Van der Heyden, Gen., honors to, vi, 625; ix, 558; x, 625.  
 Van der Hoeven, Pruis, x, 625.  
 Vanderpoel, Aaron J., obit., xii, 618.  
 Vanderpool, Dr. James, obit., i, 625.  
 Van der Weyde, invention by, ii, 498.  
 Van Diebble, Cornelius, invention by, x, 614.  
 Van Dyke, Anton, sale of pictures by, x, 360, 366; xii, 277.  
 Van Dyke, John, obit., iii, 647.  
 Van Gèle, Capt., explorations by, xii, 308.  
 Van Heurck, Dr., experiments by, ix, 515.  
 Van Malderen, invention by, iii, 275.  
 Van Marcke, x, 367.  
 Van Niekirk, P. J., ix, 112, 113; x, 86, 87.  
 Van Nostrand, David, obit., xi, 705.  
 Van Oeckelen, invention by, x, 618.  
 Van Raust, Lydia, obit., xi, 705.  
 Van Swieten, Gen., ix, 557; x, 625.  
 Van Zandt, Charles O., ii, 675; iii, 728; iv, 770.  
 Vara, Giovanni B., obit., ix, 628.

- Varick, Theodore Romeyn, obit., xii, 618.  
 Varna and Dijmphna, loss of the, viii, 333.  
 Varroy, Henri A., sketch, iv, 386.  
 Vassali Bey Luigi, obit., xii, 634.  
 Vassalot, Count de, x, 135.  
 Vatican, the, mission from, to China, x, 170; conspiracy of the, xi, 454; illustration, i, 704; relations of, with governments. See Papacy.  
 Vatican Library open to historians, viii, 692.  
 Vaucanson, invention by, x, 618.  
 Vaughan, Victor O., xii, 106.  
 Vaughn, O. A. J., obit., i, 625.  
 Vaux, W. S. W., obit., x, 671.  
 Vedder, Alexander M., obit., iii, 647.  
 Vedder, Elihu, ix, 249.  
 Vierzon, strike at, xi, 359.  
 Vega, Count de la, x, 141.  
 Vega, the, voyage of, iv, 411; entrance into Behring Strait, 415; in Yokohama, 416; x, 398.  
 Vegetable analysis, vi, 95.  
 Vegetable chemistry, vii, 92.  
 Vegetable physiology, ix, 660; x, 695.  
 Veintemilla, Gen., made dictator in Ecuador, iii, 260; government of, iv, 328; v, 231; defeat and flight of, vii, 225; viii, 287.  
 Veitch, obit., x, 671.  
 Venezuela, i, 795; vi, 860; viii, 812; ix, 793; x, 775; silk, ix, 794; rebellion, x, 776; xii, 789; tariff changes, 790; national museum, 790.  
 Venice, aqueduct at, x, 332.  
 Venosta, v, 408.  
 Venusti, sale of a, x, 366.  
 Ventilation, v, 361.  
 Venus, diameter of, ii, 48; transit of, *ibid.*, vii, 35; viii, 20; ix, 49.  
 Vera Cruz, illustration, ii, 514.  
 Veraschagin, picture by, x, 712.  
 Verbeck, Mr., x, 401.  
 Verboeckhoven, E., obit., vi, 697.  
 Verdi, ovation to, xii, 522.  
 Vereschagin, Basil, xii, 277.  
 Verme, Count L. dal, xi, 380.  
 Vermilye, Washington R., obit., i, 625.  
 Vermont, statistics, State government, election returns, etc., in each volume; celebration of the centennial of the battle of Bennington, ii, 757, 758; investigation of the reprieve of a sentence for murder, ii, 758; iii, 818; Redfield Proctor elected Governor, iii, 816; revision of statutes, 817; v, 708, 709; bequests, iii, 818; vii, 827; relative profits of farming

- in, compared with those in the West, iv, 840, 841; sorghum sugar, 841; railroad monopolies, 841; a famous law-case, iv, 842; election case, 842; election of Governor Roswell Farnham, v, 707; re-election of Senator Edmunds, v, 707; xi, 839; act to equalize taxation, vi, 863; duties of State school superintendent, 864; revenue bill, vii, 823; schools, 826, 827; xii, 791; election of Governor John L. Barstow, vii, 827; of Governor Samuel E. Pingree, ix, 795; forestry, ix, 796; maple-sugar, x, 777; Ebenezer J. Ormsbee, xi, 838.
- Véron, Madame, xii, 294.
- Verona, bridge at, x, 330.
- Vessels, iron-turreted, xii, 229.
- Vestal virgins, house and statues of the, ix, 26.
- Vetromilla, Eugène, obit., vi, 689.
- Vetulovia, site of, xi, 35.
- Veuillot, Louis, sketch, viii, 815.
- Veyressat, J. J., x, 368.
- Viardot, Louis, obit., viii, 605.
- Vibert, G. J., xi, 847.
- Vibriones, ix, 498.
- Vickovich, x, 1, 2.
- Vicksburg, siege of, x, 424, 426.
- Victor Emanuel II, King of Italy, iii, 819.
- Victoria, Queen, power of, to cede Indian territory, iii, 438; attempt on the life of, vii, 369; portrait, iii, 819; jubilee of the fiftieth year of her reign, xii, 791.
- Victoria, Apache chief, v, 27.
- Victoria, province of. See under Australia, in each volume.
- Victoria Nyanza, mission at, iii, 362.
- Victoria Station, explosion at, ix, 377; x, 454.
- Viel-Castel, M. de, obit., xii, 638.
- Vielle, x, 151, 154.
- Vienna, fire in, iv, 51; views in, opera-house and cathedral, ii, 58, 59.
- Vieuxtemps, Henry, obit., vi, 697.
- Vigilant, the, lost whaler, vi, 323.
- Vigorite, x, 345.
- Vilain, Vicomte, obit., iii, 662.
- Vilaa, William F., sketch, x, 757; portrait, 762.
- Vincent, C., discovery by, iv, 75.
- Vincent, Edward, x, 811.
- Vincent, Mary A. Farley, obit., xii, 618.
- Vines, S., experiments by, iv, 36.
- Virchow, Rudolph, theory of, vi, 550; xii, 669.
- Virgin Mary, insult to the, x, 713.
- Virginia, article on, in every volume, giving statistics, State government and legislation, election returns, etc.; views in, i, 801; ii, 759, 761, 762; vi, 870; constitutional amendments, i, 800; stationing of troops at Petersburg, i, 800, 801; sympathy with South Carolina, 802; gifts to the University, 802; the Moffat register law, ii, 758; election of F. W. M. Holliday Governor, and sketch, ii, 762; the State debt, iii, 820, 821; iv, 842, 843, 844; v, 709; decision under the civil-rights act, iii, 825; the Readjustment party, iv, 843, 844; colored juror question, 845; the Governor's veto of the repudiation bill, v, 709; the Yorktown centennial, vi, 869; diagram and description of the proposed monument, 870, 871; William E. Cameron, Governor, vii, 827; Riddleberger bill, 828, 829; election riot, viii, 816; acts passed over the veto, ix, 797; bond cases, x, 268; the oyster interest, x, 777; Fitzhugh Lee elected Governor, xii, 792.
- Virginia City, growth of, xii, 133.
- Vischer, Friedrich Theodor, obit., xii, 639.
- Vitale, Count Luigi, obit., i, 644.
- Vital force, doctrine of, ix, 808.
- Viticulture, in United States, vi, 353; viii, 79; in Ecuador, 288; in Mexico, 537.
- Vitu, Sultan of, x, 796.
- Vivarez, Henri, x, 578.
- Vivisection, regulations for the practice of, i, 360; bill to prohibit, iv, 457; licenses, 457.
- Vizier, the grand, office of, abolished, iv, 833.
- Voconius, Pollio, palace of, ix, 26.
- Vodges, William, obit., xi, 705.
- Vogel, H. C., observations by, vii, 37; star catalogue by, viii, 28.
- Vogel, H. M., ix, 122.
- Vogt, C., discovery by, vi, 303.
- Voice, physiology of the, viii, 636.
- Voigts-Rhetz, Gen., ii, 613.
- Volapük, structure of, xii, 794; derivation of words, 795; adoption of, 797; meeting of societies, 797; bibliography, 798.
- Volcanic eruptions, of Cotopaxi, ii, 268; ix, 28; in Patagonia, iii, 365; of Etna, iv, 527; in Ecuador, vi, 331; of Krakatoa and others, viii, 526; ix, 53; x, 400; in Hawaiian Islands, ix, 389; atmospheric effects of, viii, 526; of Ometepe, viii, 582; of Momotombo, xi, 66, 653. See Earthquakes, etc., viii, 284.
- Volcanoes, ix, 389, 541; colored chart showing the principal volcanoes, seismic areas, and coral reefs, xi, 296; Irazu, x, 398; Jorullo, illustration, ii, 511; Asama-jama, xii, 811; Krakatoa, x, 400; a new, 400.



- Volekmar, Wilhelm, obit., xii, 689.  
 Volkhart, Wilhelm, obit., i, 644.  
 Volkmann, Alfred W., obit., ii, 618.  
 Vollmer, Alexander J., obit., i, 644.  
 Volta, Alessandro, researches of, vii, 265.  
 Volta, discovery of the sources of the, xii, 805.  
 Von Lenk, x, 848.  
 Vories, Henry M., obit., i, 626.  
 Vote by proxy, viii, 47.  
 Voysey, Rev. C., ix, 759.  
 Vriendt, Albrecht de, xi, 848.  
 Vuillefroy, Félix, x, 368.  
 Vulcacius Rufinus, house of, ix, 26.  
 Vulpian, Edme Felix Alfred, obit., xii, 689.
- Wackernagel, Philipp, obit., ii, 618.  
 Wadai, vi, 327.  
 Waddington, Joshua, obit., i, 644.  
 Waddington, William H., sketch, ii, 320; Cabinet of, iv, 386; ix, 290.  
 Wade, Benjamin F., sketch, iii, 825.  
 Wagner, A., process for water-examination, vi, 94.  
 Wagner, Moritz Friedrich, obit., xii, 689.  
 Wagner, Rudolf J. von, obit., v, 604.  
 Wagner, Richard, music of, i, 571; festival at Baireuth, 572; *Ring des Nibelungen*, i, 573; sketch, portrait, viii, 816.  
 Wahala, Bishop, obit., ii, 618.  
 Wahl, W. H., x, 159.  
 Wailes, J. W., xi, 536.  
 Waitangi, treaty of, x, 66, 67.  
 Waite, Morrison R., sketch, vii, 831; portrait, vii, 126.  
 Waitapu Mount, ix, 540.  
 Waitz, George, obit., xi, 728.  
 Wakkan. See Vakkan.  
 Walad Denkal, ii, 2.  
 Walcott, O. D., x, 404.  
 Walcott, Charles F., obit., xii, 619.  
 Walda, Michael, revolt of, i, 4, 5.  
 Waldeck-Rousseau, P. M., viii, 857, 867.  
 Waldegrave, Countess, obit., iv, 701.  
 Waldensians, ii, 762; vi, 771.  
 Waldo, L., observations by, v, 86.  
 Waldstein, M., xi, 32.  
 Walenn, inventions, ii, 538.  
 Wales, Agrarian agitation in, xi, 404.  
 Wales, Prince of, in India, i, 44, 401.  
 Walker, Sir Baldwin W., sketch, i, 802.  
 Walker, Jonathan, obit., iii, 647.  
 Walker, J. T., x, 47.  
 Wallace, A. R., xii, 670.  
 Wallace, J., invention-by, i, 91.

- Wallace, Mackenzie, ix, 279.  
 Wallace, W., inventions by, iii, 272; ix, 306.  
 Wallace, William Ross, obit., vi, 689.  
 Wall-decoration, ix, 250.  
 Waller, Augustus D., experiments by, xii, 674.  
 Waller, Thomas M., vii, 173.  
 Wallis, Robert, obit., iii, 662.  
 Wallner, Franz, obit., i, 644.  
 Wallo Galla, ii, 2.  
 Walloon Churches, vii, 709.  
 Wall-paper, viii, 615; ix, 247.  
 Walmsley, W. H., ix, 521.  
 Walpole, Frederick, obit., i, 644.  
 Walpole, Sir Robert, obit., i, 644.  
 Walrand, M., ix, 478.  
 Walsh, Archbishop, appointment of, x, 455.  
 Walter, M., engineering work of, x, 382.  
 Walter, Thomas Ustick, obit., xii, 619.  
 Walther, Carl Ferdinand Wilhelm, obit., xii, 619.  
 Walworth trial, the, ix, 627.  
 Ward, Captain, invention by, iii, 766.  
 Ward, Durbin, obit., xi, 705.  
 Ward, Edward M., obit., iv, 701.  
 Ward, George Cabot, obit., xii, 619.  
 Ward, John Q. A., x, 361, 367.  
 Ward, L. F., quotation from, vi, 241; x, 404.  
 Ward, R. H., ix, 507.  
 Ward, W. Hayes, ix, 19; xi, 25.  
 Wardell, Daniel, obit., iii, 647.  
 Ware, Jairus, obit., ii, 590.  
 Ware, J. F. W., obit., vi, 689.  
 Waring, George E., ix, 723, 724, 728.  
 Warrington, experiments, vi, 98.  
 War-levy, on Southern States, iv, 429, 835.  
 Warner, Hiram, obit., vi, 690.  
 Warner, H. H., xi, 54, 57.  
 Warner, Olin L., x, 361; xi, 847.  
 Warner, Susan, obit., x, 654.  
 Warner Observatory, the, v, 36; vii, 41.  
 War Records of the Rebellion, iii, 32.  
 Warren, Sir Charles, ix, 114; x, 86 *et seq.*  
 Warren, Edward J., obit., i, 626.  
 Warren, Fitz-Henry, obit., iii, 647.  
 Warren, Lieut. G. R., x, 401.  
 Warren, H., xii, 488.  
 Warren, Henry J., obit., i, 626.  
 Warren, John C., ix, 641.  
 Warren, J. W., xii, 672.  
 Warren, Joseph, sketch, i, 802.  
 Warren, Samuel, obit., ii, 618.  
 Warren, Susanna, obit., xi, 706.  
 Warrington, pen-name of William S. Robinson, *q. v.*

- Warrington, R., experiments by, x, 157.
- Wars, Revolutions, and Insurrections in Turkey, see *Turko-Russian War*, ii, 725; iii, 793; vii, 804; in Roumelia, v, 286; in Montenegro, v, 543; vi, 842; viii, 549; in Servia, viii, 43; in Croatia, 49; in Crivoscia and Herzegovina, vii, 55; in Spain, see *Carlist War*; in Crete, iii, 411; in Candia, i, 2; in Greece, vii, 370; in Afghanistan, see *Afghan War*; in Beloochistan, i, 73; in Kurdistan, v, 623; vi, 731; in Kashgaria, see *Kashgaria*; in Turkistan, see *Turkomans*; in Persia, vii, 681; in Japan, i, 428; ii, 413; in Corea, vii, 176; in China, i, 110; ii, 101; iii, 98, 101; iv, 143; in India, ii, 394; iv, 494; v, 388; vii, 415; in Tonquin, viii, 370; in Madagascar, iii, 41; viii, 370, 507; in Sennaar, viii, 299; in Egypt, see *Egyptian War*; in the Soudan, see *Soudan*; in South Africa, see *Zulus and Cape Colony*; in Abyssinia, see *Abyssinia*; in Algeria and Morocco, i, 9, 20; iv, 27; vi, 311; in West Africa, vi, 4; in Sumatra, see *Sumatra*; in Dahomey, i, 8; iv, 15; in Feejee, i, 53; in New Caledonia, iv, 58; in Chili and Peru, see *Chilian War*; others in South America, i, 22, 118, 240, 662; ii, 72, 266; iii, 21, 261; iv, 29, 82, 149; v, 117, 625; vii, 225; viii, 287; in Mexico and Central America, i, 22, 213, 545; ii, 229; vi, 663; in Cuba, see *Cuba*; in Hayti, viii, 429; between Bulgaria and Servia, ix, 102, 733; x, 109, 112, 727; xi, 100; xii, 734; in North America, see *Indians*.
- War-vessels, new British, x, 444.
- Washburn, Emory, sketch, ii, 762.
- Washburn, Israel, the elder, obit., i, 626.
- Washburn, Israel, the younger, obit., viii, 597.
- Washburn, William Barrett, obit., xii, 619.
- Washburne, Elihu B., sketch and portrait, xii, 798.
- Washburn Observatory, vii, 41.
- Washington, city of, its recent growth, xii, 133; views in, i, 786; ii, 751, 753.
- Washington aqueduct, ix, 316.
- Washington, Treaty of, xii, 282.
- Washington Territory, articles giving statistics, government, etc., in volumes ii, viii, ix, x, xi, and xii; progress in wealth and population, ii, 763; x, 779; finances, ii, 763; viii, 849; ix, 799; xii, 798; tide-lands, ii, 763; salmon and other fisheries, 763; coal and lumber, ii, 763; ix, 800; x, 780; xi, 837; Gov. William A. Newell, viii, 819; education, viii, 819; ix, 801; x, 780; xii, 800; Indians, viii, 819; ix, 801; x, 780; xii, 800; statehood, viii, 819; Northern Pacific Railroad, 819; products, commerce, banks, railroads, newspapers, churches, ix, 799-801; territorial government, x, 779; Chinese in, x, 780; coal, 780; anti-Chinese disturbances, xi, 836; resources and development, 837; iron in, 837; hop-culture, 837; xii, 800; census, xii, 799; mining and lumber industries, 800; exports, 800.
- Wasserfuhr, invention, x, 345.
- Wasson, David Atwood, obit., xii, 620.
- Wassum, Herr, observations by, xi, 534.
- Watch-springs, new method of tempering, xii, 480.
- Water, analysis of, iii, 91; iv, 186, 628; vii, 9; viii, 111, 118; loss of oxygen in electrolysis of, iii, 93; purification of, v, 94, 367; chemical analysis insufficient, iv, 135; purity of, ix, 125; composition of ocean, 126; to heat rapidly, xi, 742.
- Water-gas, processes, viii, 373.
- Waterhouse, J. W., pictures by, x, 365; xi, 345; xii, 276.
- Water-motor, the, vi, 871; xi, 742; illustration, 742.
- Water-shed of South Africa, iv, 405.
- Water-spaniel, the Irish, ix, 257.
- Watertown, N. Y., recent growth of, xi, 188.
- Watkins, Alice, obit., xii, 620.
- Watkins, Gen. N. W., obit., i, 626.
- Watrin, murder of, xi, 359.
- Watson, J. C., discoveries by, i, 46; ii, 44; iii, 33; v, 34; obit., v, 597; prize to, ix, 55.
- Watson, Jean L., obit., x, 671.
- Watta, George Frederick, pictures by, x, 361, 365; xi, 345; xii, 277.
- Watts, Henry, obit., ix, 623.
- Watts, Sir James, obit., iii, 662.
- Watts, W. L., explorations in Iceland, ii, 324.
- Waugh, William B., obit., ii, 590.
- Wauters, A. J., x, 393.
- Wave-power, utilization of, with illustration, xi, 743.
- Waynesboro, engagement at, x, 429.
- Weather, the instrument for forecasting, iv, 808; affected by forests, viii, 350; influence of the moon on, xii, 487; popular signs of, 487.
- Weather Bureau, maps, observations, and reports. See *Signal Service*, iv, 797.
- Weather indicator, illustration, iv, 804.
- Weaver, Archibald J., obit., xii, 620.

Weaver, Gen. J. B., acceptance of presidential nomination, v, 699.

Webb, George James, obit., xii, 620.

Webb, James Watson, obit., ix, 618.

Webb, Matthew, obit., viii, 606.

Webb, Thomas W., obit., x, 671.

Weber, Karl P. von, obit., vi, 697.

Webster, experiments by, viii, 524.

Webster, Albert F., obit., ii, 590.

Webster, Caroline L. R., obit., vii, 644.

Webster, Daniel, centennial of, vii, 520; statue of, xi, 847, 619.

Webster, J., invention by, vii, 581.

Webster, John A., obit., ii, 590.

Webster, Joseph D., obit., i, 626.

Webster, Thomas, obit., xi, 729.

Wedenskii, experiments by, x, 690.

Weed, Thurlow, sketch, vii, 883.

Weeds, germination of, ix, 129.

Weekes, Henry, obit., ii, 618.

Wehrenpfennig, E., experiments by, x, 575.

Weidenheim, Baron Korb, iv, 60.

Weilenmann, invention by, iii, 545.

Weiler, Lazare, xi, 588.

Weimer, Dr., v, 665.

Weinstein, Dr., observations by, xi, 545.

Weir, John F., x, 861.

Weir, Col. Thomas B., obit., i, 626.

Weiske, Julius, obit., ii, 613.

Weld, Mason Cogswell, obit., xii, 620.

Weldon, Walter, obit., x, 671.

Welle River, conjectures concerning, iii, 863; exploration of, v, 292; viii, 886.

Welles, Gideon, sketch, iii, 825.

Wellington, Duke of, obit., ix, 624.

Wells balance, the, illustration, iii, 775.

Wells, C. S., discovery by, vii, 86.

Wells, Elijah, obit., ii, 590.

Wells, Henry, obit., iii, 647.

Wells, J. R., invention by, iii, 774.

Wells, Mary, obit., iii, 647.

Welsbach, Auer von, xii, 101, 652.

Welsh, John, sketch, iii, 826; obit., xi, 706.

Welte, M., invention by, x, 612.

Wenham, Mr., ix, 508, 509, 510, 512.

Wennecke, xi, 50.

Werden, Reed, obit., xi, 706.

Werder, August Carl Leopold, obit., xii, 640.

Werdermann, R., invention by, iii, 272.

Werner, Gustav, obit., xii, 640.

Wertheimer, Joseph, Ritter von, obit., xii, 640.

Weesyans. See Methodists, in each volume.

West, Stephen W., obit., i, 626.

Westbrook, T. R., charges against, vii, 602.

Western, Lucilla, obit., ii, 590.

Weston, E., invention by, viii, 803; ix, 805; x, 159.

West Indies, the, in vols. viii, ix, x, and xii.

Westminster Abbey, illustration, ii, 363.

Westminster Hall, explosion at, x, 454.

Westmoreland, Greek inscription in, ix, 22.

West Point hazing case, v, 30.

West Virginia, article on, in every volume, giving statistics, government, election returns, etc.; view in, ii, 764; impeachment of public officers, i, 802; H. M. Mathews elected Governor, 808; disagreement with Virginia as to the debt prior to 1861, iii, 827; improvement in the Kanawha, 827; opposition to Normal schools, iv, 845, 846; vi, 872, 873; proposed constitutional amendments, iv, 846; v, 714; disorders in Wetzel County, 846, 847; estates of married women, 847; ferry privileges at Harper's Ferry, 847; case of Strander, 847; Jacob B. Jackson chosen Governor, v, 714; University, vi, 873; land-titles, vii, 885; the land league, 885; John G. Kenna elected Senator, viii, 821; election of Charles P. Snyder, 822; election irregularities, ix, 806; the capitol building, 806; E. Willis Wilson governor, 806; settlement of boundary, xi, 839.

Wetmore, Prosper M., obit., i, 626.

Weyher, O. L., musical telephone of, iii, 588.

Weyprecht, K., plan for polar stations, vi, 325; vii, 385; viii, 382.

Whalley, George H., obit., iii, 662.

Whalley, William H., obit., i, 626.

Wharton, Joseph, experiments by, vii, 532; viii, 522; x, 159.

Wheatley, William, obit., i, 626.

Wheaton, on international law, vii, 620.

Wheat-tax, in France, ix, 243.

Wheeler, Amos D., obit., i, 627.

Wheeler, Dora, ix, 247, 248.

Wheeler, George M., x, 402, 403.

Wheeler, Mrs. T. M., ix, 247, 248.

Wheeler, William A., sketch, i, 805; sketch and portrait, xii, 804.

Whetham, J. W. B., ix, 589.

Whigs, policy of the, x, 483.

Whipping-post, bill to introduce, into Missouri, iv, 689.

Whipple, George, obit., i, 627.

Whisky-tax in England, the, x, 447.

Whitall, Henry, obit., xii, 620.

White, Dr. C. A., x, 404.

- White, Edwin, obit., ii, 590.  
 White, Mrs. E. G., prophecies of, ii, 4; iv, 5.  
 White, Gilbert, observations by, viii, 526.  
 White, Hale W., xii, 671.  
 White, Joseph, invention by, xii, 94.  
 White, Richard Grant, obit. and portrait, x, 785.  
 White, Sir William, x, 752, 753.  
 White Cross Society, the, xii, 805.  
 White Book, the, ix, 861.  
 White Mountains, measurements of, ix, 538.  
 Whiteley, James, ix, 539, 540.  
 Whiteway, Sir William, x, 629.  
 Whites, a supposed tribe of, in Africa, iv, 406.  
 Whitley, Harry G., x, 392.  
 Whitman, Mrs. Sarah Helen, obit., iii, 648.  
 Whitney, J. D., x, 402, 407; xi, 545.  
 Whitney, Miss, xi, 377.  
 Whitney, William C., sketch, x, 757; portrait, 760.  
 Whitney, Mt., ix, 539.  
 Whittaker, Cadet, case of, v, 30.  
 Whittingham, William R., sketch, iv, 847.  
 Whittlesey, Charles, obit., xi, 706.  
 Whitworth, Sir Joseph, obit., xii, 640.  
 Wholmuth, Arctic voyage of, viii, 838.  
 Whympcr, Edward, explorations by, vi, 380; viii, 528; ix, 540.  
 Wichita, growth of, xi, 189.  
 Widdin, siege of, x, 728.  
 Widor, M., xii, 520.  
 Wieniawski, Henry, obit., v, 604.  
 Wiggin, Henry, ix, 478.  
 Wilde, invention by, iii, 276.  
 Wilde, Sir Alfred T., obit., iii, 662.  
 Wilde, Sir William R. W., obit., i, 644.  
 Wilder, Marshall P., obit., xi, 707.  
 Wilder, Royal G., obit., xii, 621.  
 Wildermuth, Ottilie, obit., ii, 618.  
 Wilderness, battle of the, x, 427; xi, 416.  
 Wiles, Irving R., xi, 846.  
 Wiley, Charles, obit., iii, 648.  
 Wiley, H. W., experiments by, vi, 851.  
 Wilhelm of Brunswick, obit., ix, 624.  
 Wilhelmshöhe, illustration, iii, 388.  
 Wilkes, Charles, sketch, ii, 766; expedition, x, 401.  
 Wilkes, John, expulsion of, from House of Commons, vii, 202.  
 Wilkesbarre, Penn., growth of, xi, 189.  
 Wille, Capt., explorations by, iii, 358.  
 Willett, James M., obit., ii, 590.  
 William I of Germany. See Germany, in every volume.  
 William III of the Netherlands. See Netherlands, in every volume.  
 William Barent, the, voyage of, x, 398.  
 Williams, A., obit., i, 627.  
 Williams, Albert, x, 404.  
 Williams, Alpheus S., obit., iii, 648.  
 Williams, A. S., observations by, viii, 21.  
 Williams, Barney, sketch, i, 805.  
 Williams, Henry S., x, 45.  
 Williams, James D., sketches, i, 411; v, 715.  
 Williams, John S., obit., i, 627.  
 Williams, Samuel Wells, obit., ix, 618.  
 Williams, William, railroad director, obit., i, 627.  
 Williams, William, English bishop, obit., iii, 662.  
 Williams, W. M., new theory of, vi, 100; observations by, viii, 526.  
 Williams, William R., obit., x, 654.  
 Williamsburg, battle of, x, 558; xi, 415.  
 Williamson, A. W., address on the atomic theory, vi, 91.  
 Willis, Benjamin A., obit., xi, 707.  
 Willis, Lieut.-Gen., in Egypt, vii, 253; portrait, *ibid.*  
 Willkomm, Ernst Adolf, obit., xi, 720.  
 Wills, act on, in Michigan, viii, 539.  
 Wills, T., experiments by, iv, 135.  
 Wilmarth, Seth, obit., xi, 707.  
 Wilmer, Rev. J. B. P., obit., iii, 648.  
 Wilmington, Del., recent growth of, xi, 189; Swedish church at, illustration, ii, 247.  
 Wilmington, N. C., recent growth of, xii, 185; in the war, x, 429.  
 Willoughby, Gen., xi, 518.  
 Wilson, observations by, vi, 89.  
 Wilson, Sir Charles, ix, 804; x, 814, 815; xi, 27.  
 Wilson, Andrew, obit., ii, 590.  
 Wilson, H. D., surveys by, ii, 837.  
 Wilson, H. M., new process for copper, ii, 500.  
 Wilson, Sir James Erasmus, obit., ix, 625.  
 Wilson, Gen. James Harrison, raid of, x, 431.  
 Wilson, John, obit., i, 627.  
 Wilson, Rivers, appointed Minister of Finance in Egypt, iii, 266; iv, 328; assailed, 329; recalled, 332.  
 Wilson, Thomas, bequests of, vii, 510.  
 Wilson, Thomas P., obit., ii, 590.  
 Wilson scandal, the, sale of decorations, in France, xii, 294.  
 Wiltz, L. A., death of, vi, 514.  
 Winans, Ross, obit., ii, 590.  
 Winchell, Alexander, ix, 44.  
 Winchester, battle of, x, 428.

- Winchester, Oliver F., obit., v, 597.  
 Winds, xii, 493; in mountain regions, 494.  
 Windthorst, Herr, ix, 356, 357, 361; x, 120, 415; xi, 388.  
 Windward Islands, the, xii, 802.  
 Windward, the yacht, x, 192.  
 Wines, commerce in, iv, 169; sulphates in, vii, 90.  
 Wines, Rev. E. C., xii, 702, 704.  
 Winkler, experiments by, ii, 500.  
 Winneke, Dr., discovery, ii, 46; observations, vi, 39.  
 Winona, view in, ii, 524.  
 Winslow, E. D., case of, i, 232.  
 Winslow, F., observations of, vi, 713, 714.  
 Winslow, Henry C., obit., i, 627.  
 Winsor, H. D., ix, 273.  
 Winter palace, the, illustration, i, 712; explosion in, v, 662.  
 Winther, Christian, obit., i, 644.  
 Winton, Sir F. de, x, 192.  
 Wire, new galvanizing process for, x, 579; machine for painting, xi, 743.  
 Wire-fences, xi, 743; illustration, 743; patent declared invalid, xii, 650.  
 Wisconsin, article on, in every volume, giving statistics, legislative proceedings, election returns, etc.; views in, i, 807, 808; repeal of railroad-legislation act, i, 806; State railroad commissioner, 806; refusal to admit a woman to the bar, 809; geological survey, ii, 768; William E. Smith elected Governor, 769; sketch, 770; local indebtedness, iii, 828; railroad commissioner's report, 829; reduction of tariff-rates, 829; election of Senator Matthew H. Carpenter, 831; unconstitutionality of the law to protect trademarks, 831; tramp-law, iv, 848; viii, 822; Indians, vi, 875; election of Jeremiah M. Rusk as Governor, vi, 876; constitutional amendment, 876; immigration, vii, 838, 839; money appropriated for Gettysburg monuments, xii, 806; animal mounds in, xi, 23; act to prevent the killing of birds for millinery purposes, xii, 806.  
 Wise, Henry A., sketch, i, 809.  
 Wissmann, Lieut., explorations of, viii, 885; x, 392; xii, 808.  
 Wittich, Ludwig von, obit., xii, 641.  
 Woburn, Mass., growth of, xii, 135.  
 Woehler, Frederick, obit., ix, 808.  
 Woeikoff, Dr., observations by, xi, 541, 544; xii, 489.  
 Woermanns, the, ix, 364, 365.

- Wolf, discovery by, ix, 52.  
 Wolfe expedition to Babylonia, the, ix, 19, 52; xi, 25.  
 Wolfe, Catherine L., sketch and portrait, xii, 807; bequest of, xii, 279.  
 Wolfe, Joel, obit., v, 597.  
 Wolfe monument, illustration, ii, 259.  
 Wolff, Sir Henry Drummond, in Egypt, x, 810, 443, 755; xi, 318; xii, 241.  
 Wolff, experiments by, vi, 753; xii, 675.  
 Wolofski, L. F. M., ix, 358; sketch, i, 810.  
 Wolseley, Sir Garnet, sketch, vii, 839; portrait, vii, 232; in South Africa, iv, 125; in Egypt, ix, 203; x, 314, 711.  
 Wolter, Charlotte, ix, 465.  
 Wolverton, George Grenfell Glyn, obit., xii, 641.  
 Women, in India, ii, 389; x, 496, xii, 382; order conferred only on, iii, 406; instruction at Harvard for, iv, 602; admitted to the bar in Maryland, ii, 481; in California, iii, 71; not in Massachusetts, vi, 539; deaconesses, v, 688; Presbyterian Church on preaching by, iii, 693; v, 630; in office in Massachusetts, viii, 519; in Belgium, in public service, vii, 67; property rights of married, ii, 223, 340; iii, 676; iv, 107, 299, 847; v, 610; vii, 365; of widows, v, 610; vi, 575; contracts by married, in Indiana, vi, 426; right of husbands to vote in consequence of the property of their wives, iii, 732; suffrage question, ii, 103; iii, 525, 808; iv, 454, 598, 639; v, 344, 611; vi, 622; vii, 47, 134, 516; viii, 411, 444; ix, 374; x, 725; in England, iv, 454; in the Isle of Man, v, 344. For conventions, see under titles of States.  
 Wood, H. C., experiments by, vii, 690.  
 Wood, Sir Evelyn, vii, 87; x, 306.  
 Wood, Mrs. Henry, obit., xii, 641.  
 Wood, James F., sketch, portrait, viii, 823.  
 Wood, John, obit., v, 597.  
 Wood, William, obit., ii, 590.  
 Woodbridge, Jonathan E., obit., ii, 591.  
 Wood-carving, ix, 246.  
 Woodcock, in the United States, x, 390.  
 Woodford, James R., obit., x, 671.  
 Wood-gas, viii, 376.  
 Woodlark Islands, x, 631.  
 Woodruff, Israel C., obit., iii, 648.  
 Woods, Oregon pine, vi, 222; in Brazil, viii, 72; cedar, 141; pine in Honduras, 431; cabinet, in Japan, viii, 456; of Madagascar, viii, 505.  
 Woods, Leonard, obit., iii, 648.

Woods, Jacob A., obit., iv, 697.  
 Woods, William B., obit. and portrait, xii, 621.  
 Woodson, E. C., obit., iii, 648.  
 Woodthorpe, Ool., x, 397.  
 Woodward, C. M., experiments by, vi, 753.  
 Woodward, Dr. H., ix, 636.  
 Woodward, Warren J., obit., iv, 697.  
 Wood-wool, ix, 747.  
 Woodworth, John M., obit., iv, 697.  
 Wool, commerce in, iv, 172.  
 Wool-growers' convention, xi, 194.  
 Woolridge, L. C., experiments by, viii, 633.  
 Woolworth, Samuel B., obit., v, 597.  
 Woonsocket, R. I., growth of, xii, 135.  
 Wooten, Edward, obit., xii, 621.  
 Worcester, Mass., growth of, xii, 136; soldiers' monument at, iii, 526.  
 Worcester, Thomas, obit., iii, 648.  
 Worthworth, Christopher, obit., x, 671.  
 Work, Henry C., obit., ix, 618.  
 Working-people, accidents and sickness, insurance for, in Germany, viii, 394; xii, 328; new English law on housing of, x, 453. See also Labor.  
 World's Fairs, viii, 824.  
 Worsaac, J. J. A., obit., x, 672.  
 Wortley, S., observations by, viii, 528.  
 Wrangel, Count von, obit., ii, 618.  
 Wrangel Land, v, 301; an island, vi, 323, 324.  
 Wright, A. W., invention, ii, 498.  
 Wright, Elizur, obit., x, 654.  
 Wright, Horatio G., v, 29.  
 Wright, R. S., x, 420.  
 Wrinkler, Clemens, xi, 140, 145.  
 Wroblewski, Mr., experiments by, ix, 122, 484; xi, 138.  
 Wunderlich, K. A., obit., ii, 614.  
 Wurtz, O. A., experiments by, vi, 96; obit., ix, 625.  
 Wuttke, Heinrich, obit., i, 644.  
 Wyatt, Sir Matthew D., obit., ii, 614.  
 Wyckoff, Dr. William H., obit., ii, 591.  
 Wylie, Robert, obit., ii, 591.  
 Wyman, Luther B., obit., iv, 697.  
 Wyoming Territory, statistics, government, etc., in volumes, ii, viii, ix, x, xi, and xii; the geysers, illustration, ii, 770, 771; state of affairs, ii, 770; sheep and cattle exported, 770; viii, 826; ix, 810; winter grazing and wheat raising, ii, 770; Indians, ii, 770; viii, 826; finances, ii, 771; ix, 810; x, 787; xi, 840; xii, 808; books on, ii, 771; William Hale, Governor, viii, 825; resources and general

conditions, 826; schools, ix, 810; x, 787; xi, 840; xii, 808; penitentiary commissioners, ix, 810; x, 787; the Chinese, x, 787; irrigation, xi, 840; public buildings, xi, 840; oil, xii, 808; railroads, charities, 808.  
 Xingu River, exploration of the, x, 104.  
 Yachts, trials of steam, vi, 546; illustrated article on, x, 788.  
 Yahya Khan, x, 14.  
 Yaki Deshik, cave in the hill of, illustration, x, 38.  
 Yakoob Beg, i, 776; ii, 41, 418; iii, 96; burning of the body of, iv, 145; children of, *ibid.*  
 Yakoob Khan, iii, 437; iv, 7, 9, 13, 491. See Afghan War, v, 4.  
 Yale College, xi, 840; buildings of, illustrations, ii, 222, 224, 225, 226.  
 Yamdok Cho, Lake, x, 395.  
 Yang-Woo, destruction of the, ix, 141, 142.  
 Yap Islands, x, 139.  
 Yaqui Indians, the, fights with, x, 590.  
 Yate, Capt., x, 8, 9, 10, 12.  
 Yeames, William F., x, 364.  
 Yellow Fever, ii, 298; iii, 12. See Fever, Yellow.  
 Yellow Flags, viii, 767.  
 Yellow River, exploration of, v, 289.  
 Yelverton, Sir Hastings R., obit., iii, 663.  
 Yemen, rebellion in, ix, 764.  
 Yeo, G. F., experiments by, vi, 748; ix, 658, 661; x, 695.  
 Yeoman and small holdings act, x, 524.  
 York, England, Roman relics at, ix, 22.  
 York, Pennsylvania, growth of, xii, 136.  
 Yorktown, centenary of, and monument, vi, 869; illustration, vi, 870; x, 861; siege of, x, 558.  
 Yosemite Valley, map, iii, 70; views in, iii, 71, 73.  
 Youmans, Edward L., sketch and portrait, xii, 808.  
 Young, Brigham, sketch, ii, 771.  
 Young, Charles A., observations by, iii, 84; viii, 21, 24, 26.  
 Young, Daniel P., obit., iii, 648.  
 Young, Dominic, obit., iii, 648.  
 Young, E., explorations of, i, 331.  
 Young, J. W., xii, 111.  
 Younghusband, Mr., xii, 810.  
 Young Men's Christian Association, ii, 773.  
 Yules, David Levy, obit., xi, 707.  
 Yunker, explorations, viii, 386.

Yunnanites, Chinese methods for converting, iv, 146.  
 Yussuf Pasha, viii, 290; defeat of, 300.  
 Zabriskie, Rev. J. L., xii, 672.  
 Zakzaga, battle of, i, 5.  
 Zakrejewsky, Col., x, 9.  
 Zaldivar, R., President of Salvador, iii, 747; his relations with Barrios, x, 465, 466.  
 Zaldua, F., President of Colombia, his death, vii, 104.  
 Zaleski, Bodhan, obit., xi, 729.  
 Zankoff party, the, in Bulgaria, ix, 102; x, 780-782.  
 Zanzibar, seizure of ports of, i, 246; article on, x, 794; contest with Germany, x, 795-796; Anglo-German treaty concerning, xii, 810.  
 Zapote-wood, ix, 493.  
 Zavala, Joaquin, vi, 661.  
 Zebehr Pasha (or Sebehr), iv, 2; viii, 290, 296, 301, 302; ix, 299-301; x, 310, 313, 315, 316; xii, 244.  
 Zeiss, Mr., ix, 509 *et seq.*  
 Zelenoy, Gen., x, 5, 6, 16.  
 Zenger, theory of, viii, 25.  
 Zentmayer, Joseph, ix, 501-505, 517.  
 Zhob Valley Expedition, ix, 7; x, 395.  
 Zibepu. See Usibepu.  
 Ziegler, Franz, obit., i, 644.  
 Ziemialkowski, Dr., iv, 60.  
 Zil-es-Sultan, Prince of Persia, x, 14, 686.  
 Zimmermann, Apallon E., sketch, ii, 778.

Zimmermann, C., experiments by, viii, 117.  
 Zimmermann, Karl, obit., ii, 614.  
 Zimmermann, Wilhelm, obit., iii, 663.  
 Zinc, reduction of ores, vii, 581; purification of, x, 154; mining, xii, 485; process of extracting from blende, 485. See also under Metallurgy.  
 Zircon, ix, 304.  
 Zirconia, xii, 109.  
 Zoan (Sän), ix, 19, 600.  
 Zöller, Hugo, x, 122, 393.  
 Zoölogy, work in, x, 304.  
 Zöpf, Heinrich M., obit., ii, 614.  
 Zorbas, battle at, vii, 371.  
 Zorillista, the, ix, 742.  
 Zorka, Princess, marriage of, viii, 549.  
 Zaedenyi, Eduard von, obit., iv, 702.  
 Zuccalmaglio, Vincenz von, obit., i, 644.  
 Zulfikar, Pass of, x, 17, 18.  
 Zulus, the, history of, iv, 852; war with, iii, 82; iv, 121; discussed in Parliament, v, 330; Cetewayo reinstated, viii, 91; effects of, *ibid.*; dancing, illustration, ii, 86.  
 Zululand, map of, iv, 122; division of, ix, 114; x, 136; xi, 135; annexation of, xii, 92. See also Zulus and Cape Colony.  
 Zunz, Leopold, obit., xi, 729.  
 Zuyder Zee, proposed reclamation of, vii, 280.  
 Zweifel, explorations by, v, 290; xii, 676.  
 Zwysen, John, bishop, obit., ii, 614.  
 Zymotic diseases, x, 796. See also Germ Theory of Disease.





Vertical line on the right side of the page.



1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities related to the business.

2. It is essential to ensure that all financial data is properly documented and stored in a secure location. This includes maintaining a detailed ledger of all income and expenses.

3. Regular audits should be conducted to verify the accuracy of the records and to identify any discrepancies or errors. This helps in maintaining transparency and accountability.

4. The second part of the document outlines the various methods and techniques used to collect and analyze data. This includes the use of surveys, interviews, and focus groups.

5. Data analysis is a critical step in the research process, allowing researchers to identify patterns, trends, and correlations. This information is used to draw meaningful conclusions from the data.

6. The final part of the document discusses the importance of reporting the results of the research in a clear and concise manner. This involves the use of tables, graphs, and charts to present the data effectively.

7. The document concludes by emphasizing the need for ongoing research and the continuous improvement of research methods and techniques.

UNIVERSITY OF  
OXFORD  
LIBRARY  
SERIES  
STANDARDS  
UNIVERSITY OF  
OXFORD  
LIBRARY  
SERIES  
STANDARDS  
UNIVERSITY OF  
OXFORD  
LIBRARY  
SERIES  
STANDARDS

REFERENCE ROOM  
DOES NOT CIRCULATE

AE  
5  
A72  
Index  
N.S.  
1876-1887

