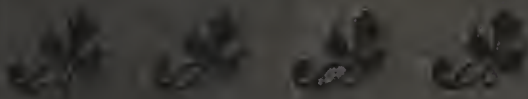


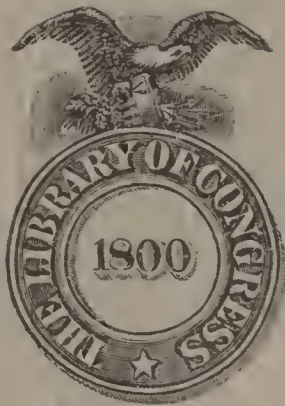
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Just One



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Synopsis of Appletons'
Universal Cyclopaedia
and Atlas

and the

ART OF SELLING

By

William T. Dickerson



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“ Knowledge is of two kinds : we either know a subject ourselves, or we know where we can find information on it.”—SAMUEL JOHNSON.

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THE ART OF SELLING.

Introduction.

IN this circular of suggestions it is not my desire to put words into the agents' mouths, but rather to explain what to talk about, and how to talk about it.

In selling books, especially a Cyclopædia, the "parrot canvasser" can meet with but little success. There is some virtue in the theory that requires an agent to memorize a canvass, the chief value of this method being that it increases the agent's knowledge of his book. It is better, however, to economize the facts in the canvass, constantly adding the new facts discovered by you in the work. The stories of having the door shut in the agent's face, and a positive refusal to examine a book, are confined largely to the inferior class of agents, whose preparation has been so insufficient that it was apparent to the customer at a glance. But few words are necessary in introducing a Cyclopædia, and these should be simple, and candidly spoken to the point.

A successful agent must be thoroughly conversant with his book; have honest convictions of its merit and enthusi-

asm gained by the knowledge that he is selling the best work of its kind; and believe that he is giving value received and know how to prove it.

Begin Right.

Thoroughly familiarize yourself with your prospectus. It is for this reason that we have inserted leaves, in the front part of the same, containing general principal facts about the work. You may very seldom have occasion to use all the information, but knowing it, you have constantly at your command interesting details in connection with the work to explain to your customer.

Topical Method of Selling.

It is a waste of energy to jump from one topic to another without dwelling enough on any one subject to make an impression. Confine yourself to one topic at a time, thus availing yourself of the power of concentration on the customer's part as well as your own. This method is new, and will be found agreeable to the customer, who rather expected the humdrum, cut-and-dried speech of the ordinary canvasser. If possible, discover a subject that is a hobby with him and dwell on that.

In the old method of canvassing—viz., opening a prospectus, commencing at the first leaf and turning leaf after leaf—your customer immediately, seeing a large prospectus, loses all interest, thinking of the amount of his time you will require, grows impatient and possibly irri-

table, therefore he is not in a frame of mind to interest himself in your work ; whereas, the important point is to awaken curiosity, and then to create an interest on the part of your customer in the book you are selling.

A better way is to open up a conversation on some subject—possibly a topic of recent interest and at present discussed by the press. Your customer at once becomes interested and anxious for information, and does not feel that you have set in for an all-day talk.

The successful salesman endeavors to avoid creating the impression that he is a polished book agent, or that he is delivering a set speech or has a methodical cut-and-dried plan of selling books. On the other hand, he will make his customer feel that he is speaking from experience, and on the firm conviction of the great use and necessity of a Cyclopædia.

The more completely you can sink your identity as a book agent the more effective will be your argument on your customer, and the less will he dispute your nice points on the ground of their being the “song of the book agent.”

In adopting the topical system of canvassing, you interest your customer in the subject—if you have succeeded in selecting the one suited to him—without his becoming aware of the fact that you are awakening in him a desire to own the Cyclopædia. Use diplomacy and tact. Never presume to teach your customer anything, but recount facts about your book in such a way that he may gradually

recognize the great need to him of such a work, thus inciting his ambition to own a Cyclopædia.

At no time should you allow your customer's interest to lag for an instant. Keep his mind and your own concentrated on the prospectus. Avoid criticising any books your customer may have previously purchased. In all cases tell him that he has used excellent judgment in the selection of his library, and remind him that the foundation of every library is the Cyclopædia.

How to Gain an Audience.

If you are canvassing through the aid of a newspaper, always present your card—for example: “Mr. Jones, representing *The New York Mail.*” The customer immediately is curious to know the business upon which you have called; then, in an easy manner, say, “Good morning, Mr. Blank; I represent *The New York Mail Cyclopædia Club*; as you know our paper has always taken a great interest in education. At an enormous expense we have secured a special edition of the ‘*Universal Cyclopædia and Atlas*,’ published by the great house of D. Appleton and Company. To a few of the prominent people in the city we are prepared to make an exceptional offer, for a double purpose: first, to introduce Appletons’ new Cyclopædia; secondly, to increase the circulation of our paper. As you are aware, the advertising depends upon circulation, and we have taken this means of making new subscribers. We can now supply you with the greatest

reference library in the English language at a saving of 25 per cent., and I find that the better class of people are wonderfully interested in this proposition.”

Stating the Price.

In quoting the price of the Cyclopædia always mention the price of the cloth binding, and lay great stress upon the fact that purchasing at once and through this special medium this great saving can be made. When your customer has decided to order them, say : “The cloth binding is very serviceable, and splendidly bound. Appletons’ house, as you know, has always been noted for their bindings, but of course as a great reference work of this kind will be constantly used by every member of the family for the next twenty years, perhaps it is advisable to buy the half-morocco binding, and it is only a case of making your payments a few months longer ; but please yourself, although the School Boards and Libraries invariably order the half-morocco binding on account of the great amount of hard wear a cyclopædia is subjected to.” Don’t press the half-morocco binding too hard. A number of sales are lost by salesmen being too persistent on a high-priced binding, whereas the customer would have bought the cheaper binding ; but from the salesman giving the impression that cloth binding is not very serviceable, etc., the customer concludes that half-morocco is more money than he can afford, or that he wishes to spend, and concludes not to buy at present. Therefore

be very careful on this point of your canvass or you will lose a number of sales.

Speak Correctly.

In using the names of Sciences, Countries, or Authors be careful, and do not be guilty of mispronunciation. You may be obliged to mention a name unfamiliar to you, but a second mistake is inexcusable, and the greatest care should be used to become familiar with correct pronunciations. Error in pronunciation betrays your ignorance and creates a certain amount of disgust and distrust on the part of your customer in everything you have said regarding your work; and as the first principle in selling books or any merchandise is to gain your customer's confidence, not only in yourself, but in what you say of your work, it would be almost impossible to take an order if such an error should occur.

Important Parts of Selling.

Thoroughly familiarize yourself with all up-to-date subjects, such as Liquid Air, Motor Carriages, Acetylene Gas, Wireless Telegraphy, etc., and also prove the necessity of a cyclopædia by running through the Census Table, using those subjects that appeal most strongly to you. These matters you will always find very interesting to your customer, and to bring to him very strongly the necessity for owning a good reference work.

Instead of giving the impression of an instructor by

saying, "This teaches you how acetylene gas is made," etc., always use the words, "This describes," etc. Never for a moment assume the air of an instructor.

It is the practice of this sort of diplomacy that will produce results in bookselling and will always make your canvass congenial, polite, and interesting, and aid you toward success in your business. Necessarily the canvass requires strict attention, sincerity, and earnestness. This is what gives it power, and if you devote yourself entirely to your work you will find it a pleasure to follow out the plan that will strengthen your ability and lead you on to success.

Importance of the Atlas.

The most valuable adjunct to a cyclopædia is a good atlas. In Appletons' Universal Cyclopædia and Atlas you will find the maps distributed throughout the work in their proper places. Political and geographical maps are of great importance and value, illustrating the height of the land, the depth of the sea, the growth of civilization, the increase of races and religions; and in studying these more can be learned and retained than by reading dozens of pages on the same subjects.

Our ability for remembering facts greatly depends upon the conditions under which we learn them, and as illustrations always appeal to the sight as well as the mind, learning obtained in this manner is generally retained; for instance, take the maps United States and Possessions. You have illustrated before you the original thir-

teen States, when and how each of the other States were acquired—whether by purchase, conquest, or treaty—also all the colonies of the United States. The same applies to all statistical maps. You must make one or two distinct points by showing by the illustration the great value of a good atlas, and that in having the maps distributed throughout the work each map is found with the subject-matter pertaining thereto. The map of Pekin—at a glance you have before you the plan of operation adopted by all the countries in the recent Chinese trouble, the map itself describing and explaining more than could ordinarily be written in twenty pages of text.

Illustrations.

Pictures are frequently looked upon and considered merely in the light of ornaments, something to amuse, but not in the spirit in which they are made, to aid in the interpretation of the text. To impress your customer with the illustrative importance and value, giving a demonstration and the facts connected with them, for this purpose study well those illustrations in your prospectus that appeal most strongly to you—for example, the illustration of American food fishes—and thoroughly familiarize yourself with the subject so that you will be able to talk interestingly upon its importance.

Testimonials.

Testimonials, if properly used, are of great benefit, but great care should be used. The old method of an

agent running over a list of names of influential men who have bought is a great mistake. While it is a fact that human nature is greatly influenced by the actions of others, yet at the same time it is true that human nature also wishes to conceal the fact that he is influenced by the actions of others, and it is a mistake for an agent to attempt to force a customer into buying simply because another, or many others, have bought. This can be avoided by, from time to time, in making your canvass, alluding to the names of certain subscribers by saying, "Mr. Blank wrote the house that he considered the article so and so the most complete he had seen;" that the *New York Tribune* in their testimonial said "our maps were the best they had yet seen;" that Melvil Dewey, the Librarian of the State of New York, said he had had the Cyclopædia examined by twelve experts and proclaimed it by far the best reference work published. Testimonials used in this manner will be found of great assistance in selling the Cyclopædia. And it is scarcely necessary to add that the agent must be thoroughly familiar with all testimonials.

Procrastination.

It is human nature to put off until to-morrow what should be done to-day, and this possibly applies more to buying books than to anything else. You will find most men interested in a new cyclopædia—more so than in any other set of books—therefore your one aim must be to con-

vince him that it is necessary for him to buy at once, using arguments like the following : “ Why, Mr. Blank, you cannot afford to be without a cyclopædia ; it is a very rare case to-day to find a professional or business man without such a work of reference. You say you can’t afford it ? I ask you, Can you afford to be without it for the mere cost of ten cents a day ? It is a complete college education, and if you paid ten cents a day for the use of them it would be a great investment for you. Every day you are without such a valuable reference work as Appletons’ Universal Cyclopædia and Atlas you are at a disadvantage. You are unjust to yourself. Mr. Blank, have you ever seen the time since you commenced business that you could not afford ten cents a day ? Well, you don’t believe you are going backward ; surely you can easily pay ten cents a day. Here, sign an application and own and use the greatest reference library in the English language.”

To Sell.

I believe that more orders are lost through a prolonged canvass than from any other one cause. Watch your customer, and immediately you find that you have his entire attention, and that you have convinced and converted, at that moment show him your bindings, and say, “ What binding do you prefer ? ” Your customer (if you have selected the right moment) will make a selection and say, “ Well, if I bought I’d take this one.” At

once take out your contract and begin filling it in. Your customer will probably say, "I've not decided to buy yet," to which you can reply, "Why, Mr. Blank, you will certainly take advantage of this offer, for it is more difficult to-day to find a nice home without a cyclopædia than it is to sell one. You know the house of D. Appleton and Company, and you are satisfied that it is the best Cyclopædia, and at a cost of ten cents a day you surely won't deny yourself this necessity."

Faultfinding.

It is safe to say that one-half of those that purchase, before they do so, make a great number of objections and find fault. This is a sure indication that they are interested. The experienced agent knows that the man who immediately praises his book seldom buys it. The critic is the buyer. So meet all faultfinding or objections politely and pleasantly. Skilfully get back to your canvass, and with all your energy and enthusiasm sum up all the strong points of your canvass. Do this so thoroughly that the merits of the Cyclopædia will appeal so strongly to your customer that he cannot find an excuse for not purchasing. These are the features that finally land you the order. Do not be disturbed, but rather encouraged, by

The Violent Man.

Occasionally you may meet a man who expresses himself forcefully, perhaps violently, or even profanely, about

the extortions of publishers, the worthlessness of their books, the annoyance and persistence of canvassers, etc. Such a man is a very easy subject if properly handled. Encourage him to express himself fully and freely, and then make your most vigorous and enthusiastic canvass. The philosophy of his case is this : he assumes a brusque manner, because he knows his own weakness. When successfully reached you will find him well-disposed and particularly pliable when you once get down to the presentation of your books and their merits.

The Dignified Man.

Occasionally you will meet a man who reminds you that he knows about what he wants in the way of books, that he keeps up his library according to his own judgment, and that his time is too valuable to give to agents, etc. A good way to meet such a man is to remind him that you did not come to make a social call, but on business, and that you really believe that what you have to offer will interest him.

For the Children.

If your customer has children, convince him of the importance to them of a cyclopædia and the assistance it will render them in their school studies. Explain the advantage of a ready reference work, treating fully upon every subject known to man, and supplying all possible

information—in fact a “college education in the home.” As soon as you have convinced him and created a desire on his part for a Cyclopædia, *convert* him to the belief that Appletons’ Universal Cyclopædia and Atlas is the best on the market. *It is the best.*

Unassisted Selling.

A method adopted by one of the most successful agents in the book business, and which will always succeed in canvassing small towns, is the following :

First, form the acquaintance of the Bishop of the diocese, if possible, and obtain his order for the Cyclopædia. The next move is to see the clergyman of the same diocese ; interview him in the following manner (Present a card with simply your name upon it. This arouses his curiosity and obtains the desired interview): “Good morning, Mr. ——. I had the pleasure of spending an hour or two with your Bishop yesterday, and he expressed the wish that I should call and see you regarding our new Cyclopædia, which the Bishop thinks would greatly interest you. D. Appleton and Company, the publishers, are also anxious for your opinion on the article ‘Episcopal Church.’ ” Then discuss this article with him, and continue your canvass as your judgment dictates. By this method you have made your customer feel that he is of great importance. He is flattered with the attention you have shown him, and you will generally succeed in getting his order, also his testimonial, and possibly an in-

roduction to one or more influential people. This will give you a good footing for thoroughly canvassing the town.

The above method can be used not only with clergymen, but in connection with any other professional or business men.

Evening Work.

Many agents ignore the importance of after-dinner work. It is the writer's experience that, where "callbacks" are to be made, better results are obtained by seeing your customer after he has dined than at any other time. First, he is free from the cares of his business. Second, he has dined, and feels in a receptive mood. Third, you can more easily convince him of the need of a cyclopædia in his home, and this argument is more forcible at his home than at any other place. If your former interview has been a progressive one, he will receive you cordially, and you will be able to concentrate his thoughts and your own directly on the work. Many business men who are severe and almost unapproachable in their places of business soften down to social affability when seen in their homes.

Possibilities of Bookselling.

A canvasser visited Fishkill Landing on the Hudson. Directly opposite the hotel was a marble-yard. Seeing the proprietor in his office he called upon him. He rid-

iculed the idea of any one buying books in Fishkill Landing, saying : “ The people have all the books they want. I can tell you every man that lives here, and those who buy books are already supplied. The book business has been drummed to death. Book agents have hounded the lives out of people in this town. You cannot find a man who will buy the Cyclopædia.”

The canvasser answered : “ You have a yard packed with slabs of marble. Whom do you expect to sell to? Can you mention the name of any one man in this town who will buy your marble? ” He answered : “ No, but each year I fill my yard with marble and sell it.” “ How do you reason,” said the canvasser, “ that, without present prospects, you can sell marble, and under the same conditions I cannot sell books. My firm, D. Appleton and Company, publish over a million dollars’ worth of books each year. We don’t know just who will buy them, but we do know that we sell them ; therefore, I think that the marble and book businesses are very similar, the only difference being that in your goods a demand is created by necessity, and with my goods a demand is brought about by creating a desire.”

After a stay of three weeks in the town he again called on the marble-dealer, and showed him a number of orders and also sold him the Cyclopædia. He agreed that, after all, business was largely done by precedent.

Realize for a moment that there are thousands of people employed in making books and millions of dollars

of capital invested in the enterprise ; that every home contains books—some a few, some a great many ; but everybody buys books.

Concentration and Persistency.

It can be truthfully stated that an agent never graduates from the book business. There is possibly no calling that affords so many opportunities to study human nature as that of the book agent. Assuming that he is observing, he will learn facts connected with the books he is selling from almost every customer he canvasses. The successful agent concentrates his mind upon the ONE publication that he is selling. The cause of failure of many agents is that they attempt to sell three or four publications at the same time. This method has but one ending—*failure*.

Persistency.

The advice given the writer when he first started to canvass was this : “ If you work all day and get a sale, go home whistling ; if you get five sales you will surely whistle ; but if you make no sale—whistle just the same.” Don't become discouraged, work regularly and systematically, and you will find that at the end of the month your aggregate sales will make a good showing. If you make five sales the first day, don't loaf the next, for the following day you may get none. Work industriously, and success is assured.

Warning.

Be conservative in your conversation, avoid exaggerations, and, above all, make no statement that is not the whole truth. This applies especially where you compare other cyclopædias with Appletons' Universal Cyclopædia and Atlas, for any misstatement then will destroy your chance to sell, as a customer is quick to catch any statement concerning other cyclopædias that you cannot prove and substantiate.

If you are to be successful above the average, you must, at the close of your canvass, wax warm with enthusiasm. You must feel, and cause your customer to feel, that Appletons' Universal Cyclopædia and Atlas is the best work that he could possibly buy, and that it is indispensable to him.

Of Great Importance.

The illegibility of many subscribers' signatures often causes delay and trouble, and sometimes the cancellation of orders is misinterpreted. Write the subscriber's name in full in Salesman's Report. It is necessary to get the correct spelling of the customer's name at the time the contract is signed. The signature of any man is usually a matter of personal interest with him, being the result of evolution and persistence in what he is pleased to call his style, even though it may be "fearfully and wonderfully made," and it is just such signatures that need to be carefully written out by the salesman.

The filling in of the Salesman's Report is a very important detail, and one that must not be slighted or overlooked in any particular. It may not, of course, be possible to procure two references at all times, nor all the information asked for in that report, but in the majority of cases there will be little or no difficulty in doing so if the salesman makes up his mind to get it.

Experienced salesmen will agree that many orders are lost on account of lack of details ; whereas, if the Credit Department was supplied with them, it would be much better equipped to successfully keep the business good.

Interesting Quotations.

Dr. Newell Dwight Hillis, of Plymouth Church, Brooklyn, writes us : " Appletons' Universal Cyclopædia and Atlas is a veritable storehouse of information. Literally, tens of thousands of volumes are condensed into twelve books. . . ."

Daniel Webster said : " My opportunities in youth for acquiring an education were limited, but I had the great good fortune of being well supplied with useful books, and these gave me my start in life."

John C. Calhoun said : " I pity the man who is too poor and mean to buy books for his children. He might as well refuse them bread and meat."

Henry Clay said : " A wise mother and good books enabled me to succeed in life. She was very poor, but

never too poor to buy books for her children. It is a mean sort of poverty that starves the mind to feed the body.”

Cicero said : “ Books are the food of youth, the light of old age, the ornament of prosperity and the refuge and comfort of adversity, a delight at home and no hindrance abroad.”

Determination and Will-Power.

It goes without saying that one of the chief elements of success with the book agent is a determined will. One person says : “ I will,” meaning “ I will, providing the difficulties are not too great, and the exertion required not extraordinary.” Another person says : “ I will,” meaning “ I will, and there is no reservation, and I have no line of retreat. I have cut the bridge behind me and I must succeed along this line ; I simply will not be vanquished by failure.” This is the kind of will-power that wins. Have you ever stopped to think that all homes contain books ? Some contain many, some few ; but every home has bought books, every one can sell books—some only a few, some a great many.

Famous Men as Book Agents.

Napoleon Bonaparte sold *L’Histoire de la Révolution*, and canvassed with vigor and success. George Washington canvassed *The American Savage, and How He may be Tamed by Civilization*, a copy of which is exhibited in Washington as a memorial of George Wash-

ington's experience as a book agent. And there are countless others, among whom are Jay Gould, Mark Twain, Longfellow, Daniel Webster, General Grant, Ex-President Hayes, James G. Blaine, Count von Bismarck ; and I may say fifteen per cent of all professional men at some time in their lives have sold books by subscription.

History of Cyclopaedia Making.

The Cyclopædia subject is an exhaustive one, and I have divided it into four parts :

1. History of Cyclopædia making.
2. Criticism of the many Cyclopædias on the market.
3. History of Cyclopædia selling.
4. Appletons' new Universal Cyclopædia and Atlas.

We all know that there have been but five cyclopædias in the English language that have ranked as standard works of reference, namely : Encyclopædia Britannica and Chambers' Encyclopædia, both English publications ; The American (Appletons') ; Johnson's Universal Cyclopædia ; and last and best, Appletons' Universal Cyclopædia and Atlas. All other cyclopædias have been compiled from one of the first four of these great reference works. Let us first review the history of the Encyclopædia Britannica.

ENCYCLOPÆDIA BRITANNICA.

The eighth edition was begun in 1853, and was published jointly by Adam and Charles Black, of

Edinburgh, and Little & Brown, of Boston; the concluding (21st) volume appearing in 1860. The ninth and last edition was published in 24 volumes and an index volume in 1875-'89. Little, Brown & Co., of Boston, were agents for the English publishers for the ninth edition, selling the Britannica for \$8.00 per volume, bound in cloth, and for proportionate prices in the other bindings.

We will now consider the history of the various other editions of Encyclopædia Britannica.

THE STODDART EDITION.

At this time no international copyright law existed between England and the United States, and Adam and Charles Black neglected to protect the first eight volumes of the Encyclopædia Britannica, and were greatly astonished to find that the J. M. Stoddart Co., of Philadelphia, were getting possession of their sheets and having the work set up in type in this country, and selling the same for \$5.00, \$6.00, and \$7.00 per volume. The English publishers employed several distinguished American writers to write the American articles for the ninth and succeeding volumes. These writers copyrighted their articles, signing over to Adam and Charles Black the sole and exclusive right to publish them. Stoddart, nevertheless, continued, and printed and sold the ninth and following volumes. Suit was immediately brought by the English publishers, and tried before

Judge Butler, in Pennsylvania. A decision was rendered in favor of the J. M. Stoddart Co. on the ground of *laches* (the legal term for procrastination or neglect). The court held, however, that Mr. Stoddart could only print the remaining volumes to complete the sets for the number of orders taken to that date, as Mr. Stoddart's defense was that, as he had taken some thousands of contracts for complete sets previous to the publication and copyrighting of the ninth volume, it would ruin his business if not allowed to carry out these contracts.

Notwithstanding this ruling of the court, Stoddart went on publishing and selling the *Encyclopædia Britannica*. Adam and Charles Black immediately brought another suit against Stoddart. During this time, to offset the Stoddart sale, Adam and Charles Black entered into an arrangement with Samuel Hall and Charles Scribner's Sons to become agents for the *Encyclopædia Britannica* in this country, making a special edition to compete with the Stoddart prices, namely, by printing the sheets in England from the original plates, exporting them to this country, and Scribner binding them here to save duty.

Pending the trial of the suit of Adam and Charles Black *vs.* Stoddart, a counter-suit was begun by the J. M. Stoddart Co. against Adam and Charles Black, Samuel Hall, and Charles Scribner's Sons. The details of this suit are not important; suffice it to say that a settlement was effected whereby the Blacks and Scrib-

ners licensed J. M. Stoddart & Co., their heirs and assigns forever, to print intact and sell in the United States the ninth edition of the Encyclopædia Britannica. This compact prevented the Stoddart Co. from correcting errors discovered in the work, especially in the American articles. Stoddart, however, added numerous foot-notes correcting these errors, and also cross-referenced the index volume, so that it was generally conceded that the Stoddart edition was the best on the market.

J. M. Stoddart finally sold out the business to Roger Sherman, of Philadelphia, who shortly died, and the Britannica plates, etc., passed into the hands of his sister, Mrs. Maxwell Sommerville.

Maxwell Sommerville immediately brought out a cheaper edition, using an inferior paper and binding, and selling the work for \$2.50, \$3.50, and \$4.00 per volume. This was in 1894-1900.

About the year 1900 Maxwell Sommerville sold the Encyclopædia Britannica plates to the Globe Publishing Company.

THE ALLEN EDITION.

About 1888 Henry G. Allen had made photographic plates of the ninth edition of the Encyclopædia Britannica. He was immediately enjoined by the English publishers from selling this edition, and they also received verdict for large damages against Allen, forcing him into bankruptcy. The plates passed into the hands

of Hurst, on Grand Street, this city, who, omitting the copyrighted articles, has from time to time printed and sold to Henry G. Allen. As this edition is practically out of the market, no time need be taken up with it.

THE R. S. PEALE EDITION.

About 1890 R. S. Peale also made photographic plates of the *Encyclopædia Britannica*, eliminating the copyrighted articles and publishing other articles in their stead, but calling the work “*Encyclopædia Britannica, Ninth Edition, R. S. Peale Reprint.*”

THE WERNER SO-CALLED REPRINT.

As we are all well aware, this edition contains none of the American copyrighted articles, and is the same in every respect as the R. S. Peale edition, with the exception that to it are added five supplementary volumes, which, however, have no relation to the original edition of the *Encyclopædia Britannica*, and are unauthorized, and have no right to the name.

THE AMERICANIZED ENCYCLOPÆDIA BRITANNICA.

This is best described by the following extract from the N. Y. *Independent*, which also refers to all the so-called “photographic reprints” of the *Encyclopædia Britannica* :

“We regret to be required to call the attention of our readers again to the numerous spurious and mangled editions

of the Encyclopædia Britannica now on the market. Purchasers who buy any of them do so at their own risk, and have small right to complain when they discover afterward that they have lost their money. No faithful reproduction of the ninth edition of the Britannica can be sold in this country under the copyright laws except the authorized. The other editions are greatly inferior; some of them contain matter made up from previous editions, and practically worthless. The Americanized Britannica, in ten volumes, and sometimes twenty, bears little resemblance to the authorized work. It rejects 20,000,000 words, or over 70 per cent of the whole. It contains 91 maps and plans, against 583 in the authorized; 96 process plates, against 338 engraved plates; and 44 text illustrations, against 9,092 in the authorized. The original work is cut to pieces, and its value for reference or citation seriously impaired, if not wholly destroyed. As to the claim that supplements are added in some editions, which bring the work down to date, from the legal point of view unauthorized 'supplements' cannot take the fraudulent quality out of a substantially pirated edition, and from a literary point of view the claim that these supplements bring the work down to date will bear least examination of all. If purchasers with their eyes open choose to invest in works of this kind, we must assume that they have some reason for doing so which is satisfactory to themselves; but if they purchase under mistaken impressions as to the character of the work, which, by the way, we regret to see that some of our contemporaries of the religious press have lent their influence to spread, WE CAN ONLY SAY THAT THERE IS BUT ONE ENCYCLOPÆDIA BRITANNICA."—*N. Y. Independent*, November 17, 1892.

CHAMBERS' ENCYCLOPÆDIA.

Was first published, in ten volumes, in 1860-'68 ; a new edition in 1871-'72. The latest edition was finished in 1900.

THE AMERICAN CYCLOPÆDIA (APPLETONS').

I think we will all agree that this was, in its day, the greatest reference work ever produced in the English language, and in many respects is still valuable as a practical working cyclopædia.

JOHNSON'S UNIVERSAL CYCLOPÆDIA.

This great Cyclopædia first made its appearance in 1874, revised in 1877, again in 1885 and 1889, and a thorough revision in 1895. In 1899 the work was subjected to another revision, and sold by D. Appleton and Company under the name of "Universal Cyclopædia."

Criticism of the many Cyclopaedias on the Market.

ENCYCLOPÆDIA BRITANNICA.

The ninth and last edition of the Encyclopædia Britannica, published in 1875 and 1889, we all know is now completely out of date. For example, we find it states that the Brooklyn Bridge is in course of construction ; that the fare on the Manhattan Elevated is 10 cents. The article on Africa was completed before Livingstone's death—May 4, 1873. No biographies are to be found of Gladstone, Queen Vic-

toria, Garfield, Blaine, or McKinley. The purchase of a Britannica to-day would be like buying an 1885 N. Y. City Directory.

The Encyclopædia Britannica as a treatise on scientific subjects was a great work, but as a working cyclopædia it was a complete failure, the articles being so ultra-technical that for ordinary purposes they are useless.

CHAMBERS' ENCYCLOPÆDIA.

The new work is chiefly a compilation of the old, and has few, if any, signed articles, which is an extremely weak point. The same objection that applies to the Encyclopædia Britannica applies in part to Chambers', namely, Chambers' being chiefly a British work, and the American articles in the majority of cases being written by English writers, American subjects have not received sufficient prominence, and to buy a Chambers' Cyclopædia would be very much the same as buying a history of the United States written by English writers.

CENTURY DICTIONARY CYCLOPÆDIA AND ATLAS.

As a dictionary and atlas, this work, there is no question, is all that could be desired; but it remained for James Clark & Co. and John Wanamaker to call it a cyclopædia, which, as we all know, is a misnomer. For example, on America it contains about fifteen lines; Comparative Anatomy, eight lines; Building and Loan

Associations, four lines ; Battle of Bull Run, ten lines ; Constitution of the United States, nine lines ; German Literature, nothing ; German Theology, nothing ; and Free Trade, nothing. I think this is sufficient to show that it is not entitled in any way to be called a cyclopædia.

THE INTERNATIONAL CYCLOPÆDIA.

The first edition of Chambers' Encyclopædia was published in 1860. That versatile publisher, John B. Alden (doing business under the name American Book Exchange), published a work in fifteen volumes named "Library of Universal Knowledge," made up of the unchanged articles of Chambers' Encyclopædia, with a few hastily prepared American additions. This work was sold for \$1.00 a volume.

The American Book Exchange failed, and the plates passed into the hands of S. W. Green's Son, who also failed. The plates then came into the possession of George A. Leavitt & Co., the auctioneers, who also failed, and Mr. William W. Appleton was appointed receiver, and in winding up the affairs thought to destroy the old plates of The Library of Universal Knowledge, as they were considered worthless ; however, they were sold at auction and bought by a book agent, and subsequently were owned by Dodd, Mead & Co., who "plugged them, plugged the plugs, and then plugged the plugged plugs," and called it the "International Cyclopædia." We hear very little of it in the city, but it undoubtedly has quite a

sale in the small towns. One of the librarians of the Pratt Institute in Brooklyn said to me a few weeks ago that they had the *International*, as it was presented to them, but had found it of no use except upon one occasion—when a man called and asked for information as to the number of rounds that Sullivan fought Mitchell in Chantilly, France. It was a strange inquiry. The librarian, in a spirit of fun, turned to the *International*, and to her astonishment found an account of the fight.

I have made it a rule for a number of years frequently to get specimen pages, etc., of all cyclopædias. In February of this year I secured specimen pages of the *International*. Now, we all know that President McKinley was born at Niles, Ohio, January 29, 1843, and that he was the 25th President of the United States. Although knowing the slipshod, careless patchwork of the making of the *International*, I was surprised that they gave his birth as February 26, 1844, and that he was the 24th President of the United States. I sent for specimen pages again August 1, 1901, and find the same error.

APPLETONS' UNIVERSAL CYCLOPÆDIA AND ATLAS.

After the revision of 1892-'95 Johnson's *Universal Cyclopædia* passed into the hands of D. Appleton and Company. It was revised in 1899; and in 1901 it was subjected to a thorough revision, published in twelve volumes containing many new articles, with new illustra-

tions, colored plates, and maps, and is now sold as "Appletons' Universal Cyclopædia and Atlas."

The list of editors and associate editors has been revised, including the name of Rossiter Johnson as Editor of Revision ; Cyrus C. Adams, A. B., Descriptive Geography ; John W. Chadwick, D. D., Unitarianism, Universalism, etc. ; Richard J. H. Gottheil, Ph. D., Jewish Church History, Doctrine, etc.

All the articles on American cities have been revised to include the 1900 census figures, and all statistical matter, covering agriculture and mineral productions, exports, imports, and financial statistics for the United States and foreign countries, has been revised according to the latest returns. And in all cases where it has been made necessary, by the advancement of science, inventions, discoveries, etc., note has been made and the subject thoroughly brought to date.

All biographical material has been brought up to July 1, 1901, and the biographies of such men as have come into prominence included. Recent historical events, such as the Spanish War, Boer War, Insurrection in the Philippines, etc., have been noted.

All maps have been revised to date, and, where necessary, new ones have been made, also new maps added—for example, among others, South Africa, Klondike, Peking.

The firm of D. Appleton and Company have no hesitancy in saying that Appletons' Universal Cyclopædia and Atlas will demand the respect and admiration of the liter-

ary world as the greatest, the best, and most practical cyclopædia that has yet appeared in the English language.

Description and Plan of Appletons' "Universal Cyclopaedia and Atlas."

1. Special editors, recognized as authorities, in charge of each department.

2. Distinguished specialists, chosen by the different departmental editors because of their thorough acquaintance with the subject on which they wrote, and their ability to present these subjects in a way to satisfy both the scholar and the general reader.

3. An analytical method of treating the larger and more complex subjects by presenting "each elementary topic under its own heading," thus avoiding the more lengthy treatise fitted only for personal experiments, and facilitating ready reference by presenting in alphabetical order information adapted to the wants of busy men and women.

4. The authentication of each article of importance by appending to it the author's name.

5. The inclusion among the biographies of brief sketches of noted men and women in every department of learning, science, and action.

Anthropology.

The editor of this department, Major JOHN W. POWELL, Ph. D., LL. D., Director of the U. S. Bureau of

Ethnology, has probably devoted more time and thought than any other person to the ethnic relations of the aborigines of America, and his investigations enable him to speak with a confidence which perhaps no one else would be entitled to. His classification of the Indians of North America will be found of great interest and value to those who as yet have had but limited facilities for the study of the subject. The materials brought together never have been published in any other cyclopædia, and to an important extent they are new to science. Some of the more important articles prepared under the editors' direction were :

- Criminal Anthropology.* By Dr. ROBERT FLETCHER, of the Army Medical Museum.
- Criminology.* By Mr. F. STURGES ALLEN, a member of the New York Bar.
- Anthropometry.* By Dr. JOHN S. BILLINGS, Director of the New York Public Library.
- Man.* By Dr. DANIEL G. BRINTON, late professor in the University of Pennsylvania.
- New Mexico and Arizona.* By the late FRANK H. CUSHING, chief of the Hemenway exploring expedition.
- Ponca Indians.* By Rev. J. OWEN DORSEY.
- Major Powell was also assisted by Mr. Albert S. Gatschet, Mr. J. N. B. Hewitt, an

Iroquois Indian, Mr. F. Webb Hodge, Prof. William H. Holmes, and Col. Garrick Mallery, all of the Bureau of Ethnology at Washington.

Art and Architecture.

Dr. RUSSELL STURGIS, who was chosen to conduct the department of the Fine Arts, remodeled the method of treatment, with the view of establishing a better proportion between the more important and the less important articles. In former editions of the Cyclopædia,

Painting,
Sculpture,
Architecture,
Archæology.

the Fine Arts were for the most part treated by literary men and scholars who approached their subjects from without. In the remaking, the work was done by persons who had devoted their lives principally to the fine arts, and this resulted in a more intelligent treatment of the subjects that come within the scope of the department. In the important field of

Classical Archæology

Classical Archæology a large part of the work was done by Prof. ALFRED EMERSON, A. M., Ph. D., of Cornell University. The very able article in the former edition on

Roman Archæology,

Roman Archæology by Prof. WOLFGANG HELBIG and Prof. RODOLFO AMEDEO LANCIANI, of Rome, was revised by the latter.

European Art.

By the late WILLIAM J. STILLMAN.

Modern Painters. By WILLIAM A. COFFIN, Secretary of the Society of American Artists.
Architecture and architectural subjects generally, by Prof. ALFRED D. F. HAMLIN, of Columbia College, New York.
Decorative Art in its different branches was treated with special care by Dr. Sturgis; and it will be found that
Fresco-Painting,
Silverware,
Painted Pottery,
Embossed and
Chased Armor,
Tapestries, and other subjects of a kindred nature are treated with the fulness each topic seems to deserve.

Astronomy.

The Department of the Higher Mathematics and Astronomy was intrusted to Prof. SIMON NEWCOMB, LL. D., formerly editor of the *Nautical Almanac*, and formerly Professor of Mathematics and Astronomy in Johns Hopkins University. He has given in condensed form, under each head, an account of the special facts and latest discoveries of the most mature opinion of the various topics in this department. Technical details are avoided, for the reason that the few who need them will ordinarily

resort to special treatises on the subject, and these are named in the bibliography appended to each of the more important articles, as, for example, those on Astronomy, Solar Parallax, Stars, and Time, by Professor Newcomb himself, and those on the Sun and Spectroscope, by Prof. CHARLES A. YOUNG, of Princeton University.

Bibliography.

Almost every elaborate article in the Cyclopædia is accompanied by copious bibliographical information, so that the student who desires to pursue the subject further may know where to turn for the information he seeks. This has always been a feature of the Cyclopædia, but in no other edition has it been so thoroughly carried out. Wherever possible, reference is made to special rather than to general treatises, to works in English, either original or translated, in preference to works in foreign languages, and to recent and accessible rather than to out-of-the-way books.

Biography.

In organizing the editorial staff no separate provision was made for the great department of Biography. It was arranged that each editor should have charge of the biographies in his own department, selecting the names of persons considered worthy of a place in the Cyclopædia, and preparing or arranging for the preparation of the biographical sketches. This arrangement has greatly

increased the value of the Cyclopædia, as the sketches have the authority of men familiar with the standing and achievements of the persons described. They are all written on the same model, so far as possible, and an effort is made to have each indicate instantly just who the person was or is, and his or her relative importance. Many biographical sketches are now added in the Appendix, including notices of persons who have attained prominence through important events, discoveries, etc., since the general revision was completed.

Biology.

Through the researches of such men as Darwin, Huxley, and Virchow, Biology has obtained a position of great prominence among the sciences. Special mention may be made of the articles—

Biology.

By THEODORE GILL, M. D.,
Ph. D.

Bacteriology.

By JOHN S. BILLINGS, M. D.,
LL. D., and ALEXANDER C. AB-
BOTT, M. D.

*Darwinism and
Evolution.*

By JOHN STERLING KINGSLEY,
D. Sc., Tufts College, Massachu-
setts.

Anti-Darwinism.

By the late Sir JOHN WILLIAM
DAWSON, LL. D., F. R. S., F. G. S.,
of Montreal, the most eminent op-
ponent of Darwinism.

Botany.

In arranging for the department of Botany and Vegetable Physiology, Economic Botany was assigned to Prof. LIBERTY HYDE BAILEY, M. S., of Cornell University, who took charge of Agriculture, Horticulture, and kindred sub-

Economic Botany, subject of Botany as a science to Dr.
Agriculture, CHARLES EDWIN BESSEY, Professor
Horticulture. of Botany in the University of Nebraska. In order to adapt this

whole department to the modern state of the science many of the old articles were omitted and many new ones introduced. The article Botany is entirely new, and is in accord with the modern idea that the term includes the whole vegetable kingdom, and not merely flowering plants and ferns. One of the features of the present edition is the attention paid to the orders of plants, as well as to plant diseases and plant histology. Mention may also be made of the articles—

*Bacteria and
Vegetable Histology.*

By Professor BESSEY.

Paleontology,

By GROVE KARL GILBERT, M. N.
A. S., is treated in four principal
articles and a number of minor ones.

The history of ancient life is given in three articles :

Fossil Plants. By Dr. LESTER FRANK WARD,
A. M., LL. D., of the Smithso-
nian Institution.

Fossil Invertebrates. By HENRY SHALER WILLIAMS,
Ph. D., Professor of Geology in
Yale University.

Fossil Vertebrates. By OTHNIEL CHARLES MARSH,
Ph. D., LL. D., M. N. A. S.,
Paleontologist of the U. S. Geologi-
cal Survey, and President of the
National Academy of Sciences.

Chemistry.

The Science of Chemistry is making rapid advances, and applications of the results of recent discoveries are finding their way into the manufactures in many directions. Ira Remsen, M. D., Ph. D., LL. D., formerly Professor of Chemistry, now President of Johns Hopkins University, the editor of the department, sought to present everything likely to be of interest to the general reader as well as of value to the practical student.

Acetylene. By EDWARD RENOUF, Collegiate
Professor of Chemistry, Johns Hop-
kins University.

Chemical Substances. Many discoveries of chemical
substances, probably elementary,
are now included in this Cyclo-
pædia, and an article on each of
these is now given by Dr. MARCUS
BENJAMIN, of the U. S. National
Museum.

Perfumery.

Dr. BENJAMIN has also written a new article on *Perfumery*.

Civil Engineering.

Dr. MANSFIELD MERRIMAN, Professor of Civil Engineering in Lehigh University, well known as a teacher and investigator in technical science and as the author of standard technical books, was in charge of the department of Civil Engineering. The most important new articles prepared by Dr. Merriman for this edition of the *Cyclopædia* are—

Arch Bridges,
Block System,
Creeping of Rails,
Flexure,
Hydraulics,
Mountain Railways,
Moment Roads,
Stresses,
Viaduct.

He revised and brought down to date a number of articles like those on

Brick,
Cements,
Leveling,
Surveying,

and introduced many short articles, such as those on

Adhesion,
Abutment,
Ballast.

A still larger number of articles were prepared by engineers and professors of distinction, among which it will suffice to mention—

- River Hydraulics.* By GEN. HENRY L. ABBOT.
- Ship-Canals,*
Ship-Railways,
Jetties,
Levees. By MR. ELMER L. CORTHELL,
C. E., and MR. CYRUS C. ADAMS,
who furnished supplementary ar-
ticles, giving later facts.
- Aqueducts,*
Canals,
Reservoir,
Street and Suburban
Railways, etc. By J. JAMES R. CROES, C. E.,
E. M., a civil and hydraulic en-
gineer of wide experience.
- Hydrostatics,*
Turbines,
Water-Works. By JOSEPH P. FRIZELL, C. E.
- Breakwater,*
Docks,
Dredging,
Harbors. By MR. LEWIS M. HAUPT, C. E.
- Tunnels and*
Tunneling. By MR. WILLIAM RICH HUT-
TON, chief engineer of the Hudson
River tunnel, who revised and con-
solidated all the articles on tunnels
and tunneling, and supplied the bio-
graphical sketches of European en-
gineers of note.
- U. S. Coast and*
Geodetic Survey. By THOMAS CORWIN MENDEN-
HALL, Ph.D., LL. D., M.N.A.S.

Sewerage.

By Dr. CADY SATLEY, president of the Case School of Applied Science, Cleveland, O.

Plumbing.

By Mr. GEORGE S. PIERSON, civil and sanitary engineer, Kalamazoo, Mich.

Railways.

By Col. JULIUS W. ADAMS.

*Railway Equipment
and
Railway Operation.*

By Mr. ARTHUR M. WELLINGTON, editor, and Mr. E. E. R. TRATMAN, associate editor, of the *Engineering News*, New York.

All these articles are freely illustrated whenever the nature of the subject requires it. The historical development of civil engineering, both as an art and as a science, is noted.

Education.

The articles on educational subjects required even more rigorous treatment, for the reason that since the first edition of the Cyclopædia was issued the methods, if not the systems, of education have been completely revolutionized. A new article on Education was prepared by Chancellor WILLIAM HAROLD PAYNE, of the State Normal University in Nashville, Tenn. Other interesting and timely articles are—

*Literature of
Education, Methods
of Education,
Nature Study.*

By CHARLES HERBERT THURBER, A. M., Professor of Pedagogy in the University of Chicago.

Child-Study. By WILLIAM LOWE BRYAN,
Professor of Philosophy and Vice-
President of Indiana University.

Manual Training. By Prof. CALVIN MILTON
WOODWARD, A. M., Ph. D., of
Washington University, St. Louis,
Mo.

The articles on
Agricultural Colleges,
Agricultural
Experiment Station,
College Schools, and many other educational sub-
jects of a kindred nature, are by
the Editor-in-chief.

Kindergarten. By Prof. WILLIAM NICHOLAS
HAILMANN.

Common Schools. By Prof. EARL BARNES, of the
Leland Stanford Junior University.

Primary Schools and
Secondary Schools. By Prof. CHARLES HERBERT
THURBER.

Normal Schools. By CHARLES DE GARMO, for-
merly President of Swarthmore
College.

Theological Schools. By NATHANIEL SCHMIDT, Pro-
fessor of Semitic Languages and
Literature, Theological School of
Colgate University.

Medical Schools.

By HENRY MILLS HURD, Professor of Psychiatry, Johns Hopkins University.

Law Schools.

By JAMES BARR AMES, A. M., Professor of Law, Harvard University.

Technical Schools.

By President THOMAS CORWIN MENDENHALL, Ph. D., LL. D., M. N. A. S., of the Worcester Polytechnic Institute, Worcester, Mass.

Trade Schools.

By CHARLES R. RICHARDS, Director of the Department of Science and Technology, Pratt Institute, Brooklyn, N. Y.

*Schools of the
Fine Arts.*

By Mr. WILLIAM ANDERSON COFFIN, of the Society of American Artists.

*School Gardens,
Vacation Schools,
School Statistics.*

By Prof. CHARLES HERBERT THURBER, A. M.

University.

By DANIEL COIT GILMAN, LL.D., formerly President of Johns Hopkins University. And the descriptions of institutions of learning were prepared, almost without exception, either by the officers at the head of such institutions or by persons doing the work under official direction.

Economics.

This department, under the general charge of Prof. (now President) ARTHUR TWINING HADLEY, of Yale University, was extended so as to include on the one hand the whole science of Sociology, and on the

*Economics or
Political Economy.*

other the great domain of Finance, public and private. The different subjects not treated by the Associate Editor himself were intrusted to the hands of the most eminent specialists that could be found. The method pursued in former editions of dealing with controverted questions, but giving both sides a hearing, was retained ; while

*Finance,
Currency,
Taxation,
Tariff,
Reciprocity, etc.,*

systematic articles on Finance, Currency, Taxation, Tariff, Reciprocity, etc., furnish an impartial presentation of facts to supplement or correct the argument of special advocates. There is a much fuller

treatment of social problems than formerly. Some of the more important articles are—

Factory System.

By CARROLL DAVIDSON WRIGHT.

Single Tax.

By HENRY GEORGE.

Socialism.

By HENRY MAYERS HYNDMAN, A. B.

Nibilism.

By SERGIUS STEPNIAK.

Tenement-Houses.

By JACOB A. RIIS.

Sociology.

By Prof. FRANKLIN HENRY GIDDINGS.

In consequence of the great advances in recent years in the treatment of social and economic questions, the space given to these subjects was more than doubled.

Entomology.

An exhaustive article on Entomology, finely illustrated, was furnished by Prof. J. HENRY COMSTOCK, B. S., of Cornell University, and other divisions of the subject were treated by noted specialists.

Bee.

By Mr. ALEXANDER DYER MACGILLIVRAY.

Phylloxera.

By Dr. CHARLES V. RILEY, Late Entomologist, U. S. Department of Agriculture, Washington, D. C., and revised by LYMAN V. KELLOGG, Associate Professor of Entomology, Leland Stanford Junior University, Palo Alto, Cal.

Gypsy Moth

By Prof. JOHN STERLING KINGSLEY, and a few items by Mr. FREDERICK AUGUSTUS LUCAS.

Geography.

Mr. CYRUS C. ADAMS, Formerly president of the department of Geography in the Brooklyn Institute of Arts and Sciences, has written articles on many African topics and on out-of-the-way places in every part of the world.

African Topics.

*South America,
Mexico,
West Indies.*

HERBERT H. SMITH, A. M., a naturalist, who had been engaged for more than twenty years in special geographic and scientific

explorations in tropical America, and traveled extensively in South America, Mexico, and West Indies, contributed

the articles on those countries. And

*China,
Japan.*

ROBERT LILLEY, D. C. L., M. R. A. S., the managing editor, who resided for many years in China

and Japan, and traveled extensively in the far East, was the authority on Asiatic subjects. Of the many important

articles may be mentioned—

*Africa,
Spanish and*

Portuguese America, By the Associate Editor, Mr. *South Sea Islands,* CYRUS C. ADAMS.
Central Asia,
British India.

Constantinople.

By Rev. EDWIN A. GROSVENOR, A. M., late of Robert College, Turkey.

London.

By Mr. FRANCIS ESPINASSE, a well-known literary worker of that city.

Paris.

By THEODORE STANTON, A. M., for several years a resident of the French capital.

The descriptions of the large cities were intrusted to

persons selected for their local knowledge as well as for their personal fitness, and the articles on all cities and countries have been revised to include the most recent census returns and other matters of statistical importance.

Many new geographical articles have been added to the present edition by Mr. Cyrus C. Adams.

Among the important articles to be found in the Appendix is a new and full description of the

Philippine Islands,
China,
Cuba,
Devil's Island,
Egypt,
Fashoda,
France,
German Empire,
Greece,
Iceland,
Nyassaland,
Witwatersrand,
Change-of-Day Line.

Political and Descriptive Geography, one of the largest departments in the Cyclopædia, was cared for by Prof. MARK W. HARRINGTON, A. M., LL. D., F. L. S. In this great work he had as his collaborator Hon. GARDNER D. HUBBARD, formerly President of the National Geographic Society, Washington, D. C.

Geology.

The treatment of Geology was enlarged by the addition of special chapters on Structural Geology, or the arrangement and interrelation of *Structural Geology*, rock masses; Dynamic Geology, or *Dynamic Geology*, the agencies by which rocks and *Geologic Technology*, rock structures are produced; on Geologic Technology, or the methods employed by the geologist in determining the horizontal and vertical distribution of rocks, in representing this distribution by means of maps and sections, in discriminating between rocks by means of their composition and minute structure; while the general subject *Rocks* was written by the eminent specialist, Prof. GEORGE H. WILLIAMS, of Johns Hopkins University, and the articles on individual rocks, such as granite, gneiss, etc.

Each geological period is designated in a special article devoted to the subject, and a number of short articles on American formations. GROVE K. *Historic Geology*. GILBERT, A. M., Geologist of the U. S. Geological Survey, was in charge of this department and called to his assistance many eminent specialists.

Applied or Economic Geology, Geology of Petroleum and Natural Gas. By ISRAEL C. WHITE, M. E., the mining engineer who originated the "anticlinal theory" of gas occurrence.

*Asphalt,
Bitumen,
Petroleum.*

By Prof. STEPHEN FARNUM PECKHAM, A. M., formerly of the University of Minnesota.

Building-Stone.

Mr. GEORGE PERKINS MERRILL, Ph.D., Curator of Rock Collections in the U. S. National Museum.

*Artesian Wells,
Well-Drilling.*

By FREDERICK HAYNES NEWELL, topographer, U. S. Geological Survey, in charge of the investigation of water supply with reference to irrigation.

History.

All the articles that come within the scope of the department of History, reserved for the special care of the Editor-in-chief, were carefully revised. All the historical articles were critically examined, many of them rewritten, and a considerable number of new subjects for the first time introduced into the Cyclopædia. Among those from the pen of the Editor-in-chief may be mentioned

*Bacon's Rebellion,
Berlin Congress,
Columbus,
Modern Egypt,
Frederick the Great,
Mecklenburg Declaration,
Napoleon,
Nullification,
United States,
George Washington,
Waterloo.*

A short historical article was appended to each article on a state or foreign country. Some of the more noteworthy of the latter are—

<i>France,</i>	By CHARLES KENDALL ADAMS,
<i>Austria,</i>	LL. D.
<i>England,</i>	By ERNEST G. RAVENSTEIN, F.
<i>Germany,</i>	R. G. S.
<i>Japan,</i>	By JAMES MAIN DIXON, A. M., F. R. S. E., formerly Professor of English Literature in the Imperial University of Japan.
<i>Norway,</i>	By JULIUS E. OLSON.
<i>Spain,</i>	By MARK W. HARRINGTON,
<i>Sweden,</i>	LL.D., F.L.S.
<i>Ancient Egypt,</i>	By CHARLES R. GILLETT, D. D.

Industrial Arts.

Of the Industrial Arts, Agriculture was assigned to Prof. LIBERTY H. BAILEY, M.S., of Cornell University.

Agriculture,
Economic Botany.

He not only subjected all the articles that were retained from former editions to a most thorough revision, but wrote or secured many new articles of prime importance. Among these may be mentioned—

<i>Butter.</i>	By Prof. HENRY H. WING, M. S., of Cornell University.
<i>Cheese.</i>	By Prof. JAMES P. ROBERTSON, Dairy Commissioner of Canada.

*Ensilage,
Reaping and Mowing
Machines.*

By Prof. ISAAC P. ROBERTS,
M. Agr., of Cornell.

Forestry.

By Mr. BERNHARD E. FERNOWE
chief of the Forestry division of the
U. S. Department of Agriculture.

The article on Horticulture, by the Associate Editor,
will be found to embody briefly, but as fully as is practi-

Horticulture.

cable, the results of the latest in-
vestigations and experience in the
production of the different kinds of

grains, fruits, and vegetables.

Mining and Metallurgy are very fully treated by Mr.
CHARLES KIRCHHOFF, who has endeavored to embody

*Mining,
Metallurgy.*

in the several articles the results of
the most recent experience in both
of these branches. Such articles as

*Coal, Aluminium,
Blast Furnace, Tin,
Tin Plate, etc.,*

clearly show his methods and the
value of what he has done.

The articles on
*Machinery, Textiles,
Foods, Chemicals,
Beverages,*

the manufacturing of
are of the highest value, each
having been written by the ac-
knowledged authority.

Language.

Professor (now President) BENJAMIN IDE WHEELER,
Ph. D., the editor in charge of Linguistics and Compara-

tive Philology, strove to present the phenomena of language in the light of their historical significance, and to

*Linguistics and
Comparative*

Philology.

treat these in accordance with the methods of the modern science of historical grammar, as distinguished from the merely descriptive methods of earlier linguistic discussions.

The plan of his work includes the following divisions of the matter :

(a) Articles on the various groups or families of languages, such as the Indo-European, the Semitic, and the Teutonic. These articles undertake to characterize each group, with reference to its geographical location and distribution, its division into separate languages and dialects, with the determining marks or other characteristics of the division, its historical development, and its main characteristics of sound, form, and syntax, considered from a strictly scientific point of view.

(b) Articles on each separate language or dialect that has attained the position of a literary language, with discussion of its main characteristics, geographical extent, division into dialects, and with reference to the most important lexicographical and grammatical treatises, as well as to convenient handbooks for acquiring a practical knowledge of the language.

(c) Articles explanatory of the technical terms of scientific and descriptive grammar, as of prosody or meter.

(*d*) Articles on various phases of general grammar, the philosophy of language, the history of scientific grammar, and the history of writing.

(*e*) A brief etymological explanation of all titles in the Cyclopædia whose form or meaning could be made clearer by the addition of such an etymology. In selecting the material to be used in these etymological explanations, the etymology is not viewed as an end unto itself, as may be the case, for example, in an etymological dictionary, but rather as a practical convenience for the purposes mentioned. All these etymologies were supplied by Professor Wheeler himself.

In carrying out this widely comprehensive plan the associate editor called to his aid some of the most eminent specialists to be found in Europe and America. Among the noteworthy contributions are—

Semitic Languages. By Prof. CRAWFORD H. TOY, LL. D., Prof. DAVID G. LYON, Ph. D., of Harvard University, and Prof. JAMES R. JEWETT, Ph. D., of Brown University.

Iranian Languages. By Prof. A. V. WILLIAMS JACKSON, A. M., L. H. D., Ph. D., of Columbia University.

Germanic Languages. By Prof. HERMANN CARL GEORGE BRANDT, A. M., Ph. D., of Hamilton College.

- Scandinavian Languages.* By Prof. GEORGE L. KITTREDGE, A. B., of Harvard University, and Prof. WILLIAM H. CARPENTER, Ph. D., of Columbia University, New York.
- Slavic Languages.* By Prof. VATROSLAV JAGIC, Ph. D., of Vienna.
- Lithuanian and other Baltic Languages.* By Prof. ADALBERT BEZZENBERGER, Ph. D., of Königsberg, Prussia.
- Celtic Languages.* By Prof. RUDOLPH THURNEYSEN, Ph. D., of Freiburg, Germany.
- Low-German Languages.* By Prof. HERMANN COLLITZ, Ph. D., of Bryn Mawr, Pennsylvania.
- Romance Languages.* By Prof. EDWARD S. Sheldon, A. B., of Harvard University.
- Sanskrit.* By Prof. CHARLES R. LANMAN, Ph. D., of Harvard University.
- English.* By Prof. ALBERT S. COOK, Ph. D., L. H. D., of Yale University.
- Pali.* By Prof. T. W. RHYS DAVIDS, of London.
- Greek.* By Prof. FREDERICK D. ALLEN, Ph. D., of Harvard.
- Prakrit.* By Prof. HERMANN JACOBI, Ph. D., of Bonn, Germany.

*Chinese, Korean,
Japanese.*

By Dr. ADDISON VAN NAME,
Librarian of Yale University.

Egyptian.

By Rev. CHARLES R. GILLET,
Librarian of Union Theological
Seminary, New York.

Language.

By Prof. WILLIAM D. WHIT-
NEY, Ph. D., LL. D., M. N.
A. S., of Yale University.

Syntax.

By Prof. BERTHOLD DELBRUCK,
Jena, Germany.

Prosody, Meter, etc.

By Prof. MILTON W. HUM-
PHREYS, Ph. D., LL. D., of the
University of Virginia.

Inscriptions.

By Dr. ISAAC H. HALL, of the
Metropolitan Museum, New York.

*Pronunciation,
Punctuation,
Lexicography.*

By Prof. OLIVER FARRAR EMER-
SON, A. M., Ph. D., of Cornell.

*Ablaut, Umlaut,
Alphabet, Gothic,
Modern Greek, Folk-
Etymology, etc.*

By BENJAMIN IDE WHEELER,
Ph. D.

Law.

Law is a twofold department—(a) municipal, civil, and constitutional law, and (b) international law. During the progress of about the first third of the work the former was in charge of President HENRY WADE ROGERS, of the Northwestern University, and thereafter of FRANCIS

M. BURDICK, LL. D., Dwight Professor of Law, Columbia University, who received important aid from the following professors in the Columbia University School of Law : Frank J. Goodnow, A. M., LL. B. ; George W. Kirchwey, A. B. ; Munroe Smith, A. M., J. U. D. ; Mr. F. J. Sturges Allen, a member of the New York Bar, who wrote many important articles and revised many others, and has now added still more, including

Expert Testimony,
Farm Laws,
Handwriting,
Liquor Laws,
Lunacy Laws,
Police Powers,
Probate Courts,
School Laws.

International Law.

Asylum,
Balance of Power,
International
Arbitration,
International Law,
Belligerency,

By Prof. THEODORE S. WOOLSEY, of Yale University, who endeavored to give, under a number of separate headings, rather than under one, a complete practical treatment of the subject. Among individual articles of this nature may be mentioned

Blockade,
Exterritoriality,
Extradition,
Naturalization,
Treason,
Treaties.

Literature.

In the treatment of the various subjects that come under the head of Greek and Roman Literature, in charge of Prof. BASIL LANNEAU GILDERSLEEVE, Ph. D., LL. D., D. C. L., of Johns Hopkins University, an effort was made to bring into relief the important facts of the lives and careers of the different authors, to present their leading characteristics in a few sharp, clear lines, and to indicate the great editions of the various works ; and, generally, to point out the best and most accessible sources of information. The Latin section of the department was assigned to Prof. MINTON WARREN, A. B., Ph. D., of Johns Hopkins University, and Dr. ALFRED GUDEMAN prepared biographical sketches of the great classical scholars of modern times.

Greek Literature. By Prof. FREDERICK DE FOREST ALLEN, Ph. D., of Harvard University.

Homer. By Prof. THOMAS D. SEYMOUR, A. M., of Yale University.

Greek Antiquities. By Prof. J. R. S. STERRETT, Ph. D., of Amherst College.

By Prof. GEORGE L. HENDRICK-
Roman Antiquities. SON, A. B., of the University of
Wisconsin.

The department of English Literature was conducted
by Prof. HENRY A. BEERS, A. M., of Yale University.
Other special articles on kindred subjects were—

By Prof. FRANCIS ANDREW
Anglo-Saxon MARCH, LL. D., L. H. D., of
Literature. Lafayette College.

By THOMAS SERGEANT PERRY,
Novel. A. M., author of “English in
the Eighteenth Century.”

By Prof. CHARLES DAVIDSON.
Miracle-Plays. of Carlyle, Pope, etc., by Prof.
Biographies HENRY A. BEERS.

By Prof. GOLDWIN SMITH,
Canadian Literature. LL. D., D. C. L., and G. MER-
CER ADAMS, including an account of
the French-Canadian as well as of
the English Literature of Canada.

The treatment of the subject of Comparative Litera-
ture, by ARTHUR R. MARSH, formerly professor in Harvard
University, is a new feature in
Comparative cyclopædia-making. His aim was
Literature. to bring foreign literature to our

very doors in a series of sketches prepared by persons so
familiar with their subjects that they can give the main
lines of each foreign literature without wasting words

upon needless or vague descriptions and characterizations. His plan also includes a brief biography of every writer of real importance and interest in all these foreign literatures, the selection of these names and the writing of the biographies themselves being left, as far as possible, to the authorities who have undertaken the preparation of the main articles. The bibliographical information which follows each article will give the reader an indication of the latest discussions of the subject in hand, and enable him to supplement the information given, if he so desires.

	In arranging for this department and allied literatures were assigned to Prof. CHARLES R. LANMAN, Ph. D.
<i>Sanskrit</i>	
	to Prof. A. V. WILLIAMS JACKSON, A. M., L. H. D., Ph. D.
<i>Indo-Iranian</i>	
	to Prof. CRAWFORD H. TOY, LL. D.
<i>Semitic</i>	
	to Prof. DAVID G. LYON, Ph. D.
<i>Assyrian and Chaldee</i>	
<i>Egyptian</i>	to Rev. CHARLES R. GILLETT.
<i>Chinese, Korean,</i>	
<i>Japanese</i>	to Dr. ADDISON VAN NAME.
<i>Arabic</i>	to Prof. JAMES R. JEWETT, Ph. D.
<i>German</i>	to Prof. JULIUS GOEBEL, of Leland Stanford Junior University.
<i>Scandinavian</i>	to Prof. GEORGE LYMAN KITREDGE, of Harvard, and Prof. DANIEL KILHAM DODGE, of the University of Illinois.

- Catalan* to Prof. THOMAS F. CRANE, of
Cornell University.
- Italian, Basque,
Roumanian* to Prof. EDWARD S. SHELDON, of
Harvard.
- French* to Prof. ARTHUR G. CANFIELD, of
the University of Kansas.
- Provençal Literature,
Humanism, etc.* By ARTHUR R. MARSH.
By Prof. FRANCIS J. CHILD,
Ph. D., LL. D., of Harvard Uni-
versity.
- Ballad Poetry.* By Prof. GEORGE LYMAN KIT-
TREDGE.
- Beast Fables.* By Prof. RASMUS B. ANDERSON.
- Finnish Language
and Literature.*

Attention may here very properly be called to the fact that this is the first cyclopædia published that contains an account of the already extensive and important literature of South America, together with notices of the most eminent South American writers, both past and present. Now that South America is attracting so much attention both in the United States and in Europe, this feature will, it is hoped, be found both useful and interesting.

Mechanical Engineering.

The editor of the Department of Mechanical Science, Prof. ROBERT H. THURSTON, Doc. Eng., LL. D., director of Sibley College, Cornell University, endeavored to pre-

sent the whole field of Applied Science, as exhibited in the mechanical arts, in the simplest, most concise, and most complete manner possible, and the history, structure, and principles of construction of all important inventions and machines, accuracy being secured by obtaining contributions from acknowledged authorities in each class. Every department of manufacturing industry receives attention.

Steam-Engine. The very complete article on the Steam-Engine, by the late Professor TROWBRIDGE, was revised by his successor, Prof. FREDERICK REMSEN HUTTON, E. M., Ph. D. Special articles have been included on

Flying-Machines and Aeronautics. By Professor THURSTON.

Medicine and Surgery.

Medical science has made most remarkable and interesting advances during recent years. There is scarcely any department of medicine or surgery that has not been profoundly influenced or quite revolutionized by the germ theory of disease. The results of the latest investigations were embodied in several articles dealing with this theory and its developments. The list of specialists secured by Dr. WILLIAM PEPPER, M. D., LL. D., the editor of this department, includes the names of many of the most eminent authorities in the United States. All matters pertaining to

Materia Medica. By either Dr. HORATIO C. WOOD, M. D., LL. D., M. N. A. S., or by Dr. HOBART A. HARE.

<i>Veterinary Medicine.</i>	By Dr. LEONARD PEARSON.
<i>Anatomy,</i> <i>Histology, etc.</i>	By Dr. GEORGE A. PIERSOL.
<i>Surgery,</i> <i>Tracheotomy, etc.</i>	By Dr. JOHN ASHHURST, JR.
<i>Obstetrics.</i>	By Dr. PAUL F. MUNDE.
<i>Pathology, etc.</i>	By Dr. W. T. COUNCILMAN.
<i>Leprosy and</i> <i>Skin Diseases.</i>	By Dr. GEORGE H. FOX.
<i>Anatomy of the Ear.</i>	By Dr. ST. JOHN ROOSA.
<i>Cholera,</i> <i>Cancer,</i> <i>Bright's Disease, etc.</i>	By Dr. PEPPER.
<i>Medical Jurisprudence.</i>	By Dr. SENECA EGBERT.

Meteorology.

In Meteorology such changes are introduced as to represent its present state, both as a science and an art, describing the phenomena named by such new but familiar terms as are used in the bulletins of the National and State weather bureaus. This, with
Climatology, was in charge of Prof. MARK W. HARRINGTON, A. M., LL. D., F. L. S., chief of the U. S. Weather Bureau for a number of years.
Climate, embodying the most recent conclusions on that subject, was written by MARK W. HARRINGTON, A. M., LL. D., F. L. S., himself.

Clouds.

By Mr. A. LAWRENCE ROTCH,
of Blue Hill Observatory.

Military Engineering and the Science of War.

This department was in charge of the late Prof. JAMES MERCUR, of West Point Military Academy. The articles on Tactics, Organization, Fortifications, Arms, Armor, Gunnery, etc., were brought up to the present time, with indications, when possible, of the directions in which future developments may be expected. Articles of this nature were placed in the hands of specialists.

*Explosives,
Torpedo.*

By Gen. HENRY L. ABBOT.

Intrenched Camps.

By Gen. ALEXIS HENRI BRIAL-
MONT, of Belgium.

Projectiles.

By Lieut. JOHN C. W. BROOKS.

*Machine and
Rapid-Fire Guns.*

By Capt. LAWRENCE L. BRUFF.

Gunpowder.

By Capt. JAMES M. INGALLS.

*War, Siege, and
Fortification.*

By Major O. H. ERNST.

Ordnance.

By Gen. JOHN C. TIDBALL.

The articles on

*Army,
Arsenals,
Brevet,
Discipline.*

By Professor MERCUR himself,

who also wrote or revised many of the articles describing battles. New articles are now added on

Electro-Ballistics,
Range-Finders,
Position-Finders.

By Lieut. I. N. LEWIS, of the Board of Ordnance and Fortifications ; also one on

Military Insignia.

By Lieut. CORNELIUS DE W. WILLCOX, of the Army Bureau of Information.

Mineralogy.

The Department of Mineralogy was in charge of CHARLES KIRCHHOFF, M. E., editor of the *Iron Age*, N. Y., who himself has written most of the article.

Gems and Precious Stones. By the eminent specialist, Mr. GEORGE F. KUNZ, gem expert for Tiffany & Co., and also of the U. S. Geological Survey.

Music.

Of the æsthetic arts, Music was in charge of Mr. DUDLEY BUCK, who expunged much that was purely technical in the former edition in order to make room for many new articles on various musical subjects.

Navigation.

The preparation of the articles on Navigation and Naval Science was intrusted to Rear-Admiral STEPHEN B.

LUCE. A few of the articles, showing how widely the subject is treated, are—

- Ship-Building.* By Rear-Admiral PHILIP HICHBORN, U. S. Navy.
- Armor and Sub-Marine Navigation.* By Prof. PHILIP R. ALGER, U. S. Navy.
- Ships of War.* By FRANCIS T. BOWLES, Chief Naval Constructor, U. S. Navy.
- Torpedo-Boats.* By Lieut. GEORGE F. W. HOLMAN, U. S. Navy.
- Nautical Schools.* By Lieut.-Commander CHARLES BELKNAP.
- Resistance of Ships, Screw Propeller, Search-Light.* By WILLIAM FREDERICK DURAND, Associate Professor of Marine Engineering, Cornell University.

Philosophy and Ethics.

Dr. WILLIAM T. HARRIS, U. S. Commissioner of Education, and Prof. J. MARK BALDWIN, Ph. D., of Princeton University, conducted the department of Philosophy and Ethics. Dr. Harris took great pains to present each topic in the light of its historical development, and endeavored to present the more obvious thoughts which the great thinkers of the past have left us on the problems of life. Under various titles the essential characteristics of the Greek and German philosophic movements are indicated. The

Scholastic Philosophy receives additional attention ; and the New Psychology, based on observation, and especially on the study of the functions of the brain and the cerebral ganglia, is treated at considerable length. This department was more particularly in charge of Professor BALDWIN, who has now added many new articles.

Genetic Psychology,
Genius,
Hypnotism,
Ideal Feelings,
Illusions,
Imagination,
Instinct,
Love,
Metaphysics,
Muscle-Sense,
Pain and Pleasure,
Perception,
Psychology,
Psychometry,
Psycho-Physics,
Self-Consciousness,
Sensation,
Sentiment,
Suggestions,
Suicide,
Thought,
Will.

• By Prof. J. MARK BALDWIN.

Induction.

By Prof. ALEXANDER THOMAS
ORMOND, of Princeton University.

*Epistemology, or the
Theory of Knowledge.*

By Prof. J. MARK BALDWIN.

Moral Philosophy. By Prof. JOHN DEWEY, of the University of Chicago.

Memory. By Prof. JAMES MCK. CATTELL, of Columbia University.

Symbolic Logic. By Prof. GEORGE BRUCE HALSTEAD, of the University of Texas.

Attention is called to Dr. HARRIS's fine article on this subject, and to the splendid series of six articles by Prof. RICHARD GARBE, of Königsberg, on the six darshanas, or schools of Hindu philosophy, viz. :

Mimansa,
Nyaya,
Sankhya,
Vaiceshika,
Vedanta,
Yoga.

Physical Geography.

Physical Geography, which was united with Géology, under the charge of GROVE K. GILBERT, M. N. A. S., chief geologist of the U. S. Geological Survey, was so arranged as to distribute the material under the titles of its important divisions. Among articles in this department that may be mentioned are those on—

Earth, Earthquakes, By the Associate Editor, GROVE
Valleys, Mountains, K. GILBERT, M. N. A. S.
Volcanoes.

*Glaciers, Ocean,
Lakes, Rivers.*

By WILLIAM M. DAVIS, M. E.,
Professor of Physical Geography in
Harvard University.

*Gulf Stream,
Kuro Siwo,
Deep-Sea
Explorations.*

By WILLIAM D. HALL, A. M.,
formerly in charge for many years
of explorations and surveys by the
U. S. Coast Survey.

Thermal Springs.

By ARNOLD HAGUE, M. N. A. S.,
of the U. S. Geological Survey.

Floods.

By Mr. THOMAS RUSSELL, of the
U. S. Weather Bureau, in charge
of river-flood predictions.

Physics.

In General Physics the department was in charge of
EDWARD L. NICHOLS, B. S., Ph. D., Professor of Physics
in Cornell University, who prepared at least two hundred
new articles on Electricity and its applications. Among

Electricity.

the more elaborate articles in this
department may be mentioned
ELECTRIC LIGHTING, ELECTRIC
DISCHARGE, INDUCTION COIL,
LIGHTNING, LIGHTNING-RODS, VOL-
TAMETER, etc. Other important articles by Professor
NICHOLS are : HYGROMETER, ICE, INTERFERENCE, LABORA-
TORY, LIQUIDS, LIQUEFACTION OF GASES, PNEUMATICS,
POLARIZATION, RADIOMETER, SPECTROSCOPE, SPECTRUM,
THERMOMETER, etc.

- Electric Railways and Electric Motors.* By Prof. HARRIS J. RYAN, E. M., of Cornell University.
- Fluorescence.* By Pres. HENRY MORTON, Ph. D., M. N. A. S., of the Stevens Institute, Hoboken, N. J.
- Magnetism and Transformers.* By Prof. FREDERICK BEDELL, Ph. D., of Cornell University.
- Terrestrial Magnetism.* By Prof. FRANK H. BIGELOW, A. M., of the U. S. Weather Bureau.
- Thermodynamics.* By Prof. ERNEST G. MERRITT, M. E., of Cornell University.
- Refraction of Sound, Safety-Lamps, Stereoscope, Stroboscope, Visions, etc.* By Prof. W. LECONTE STEVENS, Ph. D., of the Rensselaer Polytechnic Institute, Troy, N. Y.
- Thermo-Electricity Units, Wattmeters.* By Prof. HENRY S. CARHART, A. M., of the University of Michigan.
- Waves.* By Prof. JOSEPH S. AMES, Ph. D., of Johns Hopkins University.
- Chronophotography, Kathode Rays, Liquefaction of Hydrogen, Liquid Air, Luminescence, Radiation, Standard of Light, Storage Batteries, and X Rays.* By Prof. EDWARD L. NICHOLS, B. S., Ph. D., of Cornell University.
- Telegraphy without Wires.* By Prof. ERNEST G. MERRITT, M. E.

*Transmission of
Power.*

By WILLIAM S. FRANKLIN, M.
Sc., Professor of Physics, Lehigh
University.

Uranium Rays.

By OSCAR MILTON STEWART,
Ph. D., Instructor in Physics, Cor-
nell University.

Force of Gravity.

By ERASMUS D. PRESTON, of the
U. S. Coast and Geodetic Survey.

Acoustics.

And many other articles pre-
pared by Prof. OGDEN N. ROOD,
LL. D.

Politics.

In the field of politics, while numerous articles on questions involving matters of a partisan nature were intrusted to eminent representatives of the several parties, political topics of a non-partisan nature were written by scholars thoroughly versed in what may be called the science of comparative politics. In accordance with this method, such articles as those on

*Democratic Party,
Republican Party,
Free Trade,
Protection,
Reciprocity, etc.,*

are written by persons advocating these doctrines, while such articles as

*Lobby,
Law-making,*

Caucus,
Ballot Reform,
Civil-Service Reform,
Representative
Government,

and other topics of a kindred nature, are treated by scholars who approach the subject from a non-partisan point of view. An effort has thus been made to give to this particular department of the Cyclopædia the exceptional strength that must be called for by the present state of political science. Prominent among these articles may be mentioned—

Government,
Political Parties.

By the Editor-in-chief.

Ballot Reform.

By Prof. J. W. JENKS, A. M.,
Ph. D., of Cornell University.

Civil-Service
Reform.

By DORMAN B. EATAN, LL.D.,
and THEODORE ROOSEVELT.

Prohibition and
Prohibition Party.

By Miss FRANCES E. WILLARD.

Free Trade.

By the Hon. DAVID A. WELLS.

Theology.

It has always been the policy of the editors of this Cyclopædia to hold the balance fairly in controverted matters, and to be impartial in every way. In no de-

partment has this policy been more rigorously carried out than in that which relates to religious belief and Church

General Church History and Biblical Literature. In the last remaking the venerable Dr. PHILIP SCHAFF, of Union Theological Seminary, New York, at first had charge of

General Church History and Biblical Literature, and the Rev. SAMUEL MACAULEY JACKSON, LL. D., Professor of Church History in New York University, took charge after Dr. Schaff's death. Seven other associate editors had charge of the History, Polity, and Dogmatics of as many sections of the Christian Church, and a bare list of their names is a sufficient indication of the strength of the Cyclopædia in theological and ecclesiastical matters. For the sake of completeness they are here given in alphabetical order : Willis J. Beecher, D. D., Professor of Hebrew Language and Literature in Auburn Theological Seminary ; George P. Fisher, D. D., LL. D., Professor

*Presbyterians,
Congregationalists,
Methodists,
Lutherans,
Catholics,
Episcopalians,
Baptists.*

of Church History in Yale University ; John F. Hurst, D. D., LL. D., Bishop in the Methodist Episcopal Church, and Chancellor of the American University, Washington, D. C. ; Henry E. Jacobs, D. D., LL. D., Professor of Church History in the Evangelical Lutheran Theological Seminary, Mt. Airy, Philadelphia ; John J. Keane, D. D., Bishop in the Roman Catholic

Church, and Rector of the Catholic University of America; William Stevens Perry, D. D., (Oxon.), LL. D., late Bishop in the Protestant Episcopal Church in the U. S., Davenport, Iowa; William H. Whitsitt, D. D., formerly Professor of Church History in the Baptist Theological Seminary, Louisville, Ky. All the other denominations were fully treated.

Unitarianism, By Rev. JOHN W. CHADWICK,
Universalism. of Brooklyn, N. Y.

Disciples of Christ. By Rev. JAMES HARVEY GARRISON, D.D., Editor of the *Christian Evangelist*, St. Louis, Mo.

Mormon Church. By Mr. BYRON GROO, of the *Salt Lake Herald*.

The Friends. By Prof. FRANCIS BARTON GUMMERE, of Haverford College.

Christian Endeavor. By Rev. FRANCIS E. CLARK.

The Salvation Army. By R. DE L. BOOTH-TUCKER.

United States and Canadian Towns.

APPLETONS' UNIVERSAL CYCLOPÆDIA AND ATLAS is notably full in its treatment of U. S. towns and cities. The articles dealing with these have been revised by persons on the spot and familiar with the localities they describe.

Canadian towns and villages have also been included and the most recent census returns of population, manufactures, etc., have been fully utilized.

Zoölogy.

The department of Zoology and Animal Physiology was in charge of President DAVID STARR JORDAN, LL. D., of the Leland Stanford Junior University, California. An effort was made to avoid as far as possible all strictly technical terms and to adapt all discussions and descriptions to those who have not been trained in zoölogical sciences.

*Comparative
Anatomy.*

By the late Prof. EDWARD DRINKER COPE, Ph. D., M. N. A. S.

President Jordan had the assistance of Prof. Charles Henry Gilbert, Ph. D., in general zoölogy; of Prof. Oliver P. Jenkins, Ph. D., in several physiological and anatomical subjects; of Prof. John Sterling Kingsley, of Tufts College, on

*Insects, Crustacea,
Worms, and
Invertebrate Zoölogy.*

Mr. FREDERIC A. LUCAS, a curator in the U. S. National Museum in Washington, on

*Fisheries,
Birds,*

such as Auk, Capercaillie, and Dodo, and on many other subjects—e. g.,

*Armadillo,
Crocodile,*

Elephant,
Taxidermy,
Zöological Geography.

Miscellaneous.

A very large number of miscellaneous articles which do not come within the scope of any of the editorial departments were arranged for by the Editor-in-chief, with the assistance of Prof. Charles H. Thurber, M. A., of the University of Chicago. Among these may be mentioned such subjects as games and sports.

*Baseball and
Football.*

By Prof. A. ALONZO STAGG, formerly of Yale, now of University of Chicago.

Cricket.

By Prof. FRANCIS BARTON GUMMERE, A. B., Ph. D., of Haverford College.

Physical Education.

By Prof. DUDLEY ALLEN SARGENT, A. M., M. D.

Curling.

By the Hon. JOHN JOHNSON, Milwaukee, Wis.

Chess.

By WILLIAM STEINITZ.

Whist.

By R. F. FOSTER.

*Lacrosse,
Lawn-Tennis,
Croquet,
Golf, etc.*

By others equally well qualified.

Cookery.

By Miss MARIA PARLOA.

Dress.

By Mrs. JENNESS-MILLER.

- Preservation of Food.* By MARION HARLAND.
Clubs. By HOBART CHATFIELD CHATFIELD-TAYLOR.
College Fraternities. By WILLIAM RAIMOND BAIRD, of New York.
Charity Organization. By CHARLES D. KELLOGG.
Women's Rights. By SUSAN B. ANTHONY and ELIZABETH CADY STANTON, etc.

Outlines of Subject-Matter Treated in Appletons' Universal Cyclopaedia and Atlas.

GROUP FIRST.

Mathematics, Physical Sciences, and Descriptive Geography.

1 *Mathematics :*

Arithmetic, Algebra, Geometry, Trigonometry,
Analytics, Calculus.

2 *Physical Sciences :*

Physics, Astronomy, Chemistry, Mineralogy, Geol-
ogy, Physical Geography, Meteorology, and Clima-
tology.

3 *Descriptive or Political Geography :*

Grand Divisions, Countries, Provinces, States, Cities,
and Towns, with maps of each.

GROUP SECOND.

Biological Sciences.

1 *Zoology :*

Embryology, Comparative Anatomy and Physiology,
Histology, Palæontology, Anthropology and Ethnol-
ogy, Descriptive Zoology, Zoological Geography.

2 *Botany :*

Plant Embryology, Botany and Plant Classification,
Vegetable Kingdom, Plant Palæontology, Descrip-
tive Botany, Geographical Botany.

GROUP THIRD.

Language and Literature.

- 1 *Families of Languages :*
 - Indo-European Languages and Literature.
 - Turanian Languages and Literature.
 - Agglutinated Languages and Literature.
 - Semitic Languages and Literature.
 - Hamitic Languages and Literature.
 - African Languages and Literature.
 - Basque Languages and Literature.
 - Indians of N. A., S. A., and C. A. Languages.
- 2 *English Language.*
- 3 *English and American Literature.*

GROUP FOURTH.

Mythology.

North American, South American, Egyptian, Scandinavian, Teutonic, Chinese, Roman, Greek.

GROUP FIFTH.

- 1 *History :*
 - Prehistoric Man.
 - Ancient History : The Oriental Nations.
 - Medieval History : Western Nations.
 - Modern History of all Countries.
- 2 *Civics :*
 - Theory of Government.
 - Applied Civics.

3 *Politics :*

As a Science and an Art.
Politicians and Statesmen.

GROUP SIXTH.

Economics.

Sociology, Trade and Transportation, Finance and Exchange, Political Economy.

GROUP SEVENTH.

Mechanic Arts and Applied Sciences.

Agriculture, Fisheries, Quarrying, Lumbering, Mining, Metallurgy, Navigation.

Manufacturing :

Machinery, Textiles, Foods, Structural Materials, Chemicals, Arts of Design.

Engineering :

Mining, Civil, Military (War as a Science).

GROUP EIGHTH.

Fine Arts.

1 *Music :*

Science of, Musical Instruments,
Composers and Conductors,
Instrumental and Vocal Artists.

2 *Painting :*

History, Schools of, Modern Painters.

- 3 *Sculpture.*
- 4 *Architecture as a Fine Art.*
- 5 *Decorative Art.*
- 6 *Acting.*
- 7 *Oratory.*

GROUP NINTH.

Sports, Games, Pastimes, Fashions and Customs of Mankind.

GROUP TENTH.

Medicine and Surgery.

- 1 *Human Anatomy and Physiology.*
- 2 *Pathology.*
- 3 *Therapeutics.*
- 4 *Hygiene and Sanitation.*
- 5 *Surgery.*
- 6 *Dentistry.*
- 7 *Veterinary Science.*
- 8 *History of Medicine and Surgery.*
- 9 *Medical Biographies.*

GROUP ELEVENTH.

- 1 *Law in General.*
- 2 *Municipal Law.*
- 3 *Constitutional Law.*
- 4 *International Law.*
- 5 *Admiralty Law.*
- 6 *Foreign and Hictoric Law.*

GROUP TWELFTH.

Pedagogics.

- 1 *Educational Psychology.*
- 2 *History of Educational Development.*
- 3 *Systems of Education, School, College, University.*

GROUP THIRTEENTH.

Philosophy and Ethics.

- 1 *History of Philosophy.*
- 2 *Philosophical Systems, Rational Psychology, and Logic.*
- 3 *Ethics and Ethical Systems.*

GROUP FOURTEENTH.

**Theology, Religions, Church History,
Church Societies.**

- 1 *The Bible :*
 - Its Books, Translations, etc.
 - Biblical Persons.
 - Biblical Places and Events.
- 2 *Religions :*
 - Monotheistic :
 - Jewish.
 - Mohammedan.
 - Christian.
 - Early Church.

Roman Catholic.

Greek Church.

Protestant.

Polytheistic :

Ancient.

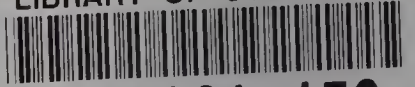
Modern.

3 *Biography and Bibliography.*

4 *Miscellaneous Religious Topics.*

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