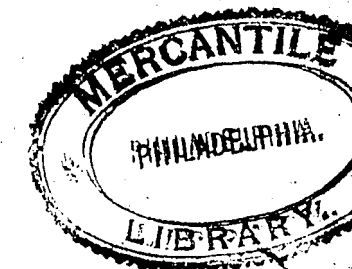


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but three paragraphs back, had but about six hundred feet on it when the lure was tossed into the water. It is one of the most indubitable proofs of Mr. Holder's possession of the true spirit of the angler that, "inch for inch and pound for pound, the gamest fish that swims" (Dr. Henshall invented the formula, if we remember rightly) is found in many waters and under various forms and names. The power to eliminate every other possible consideration by the joy immediately in hand, when a game fish is actually on your line, is the *ne plus ultra* of the angler's bliss, and, of course, removes all limit to the possible number of gamest fish or most exciting captures.

On the naturalist side, Mr. Holder shows some of the marks of the "new school." If we are to take his words, in various passages, at their face value, the fish that cuts the line against a projection of coral, tangles it in the weeds and then jerks loose because of the unyielding resistance thus secured, or springs into the air and throws the hook from its mouth by a muscular rebound from a suddenly assumed curve, is acting on a rational plan, as definitely conceived as that of a man who removes a fish-hook from his finger by cutting the line and drawing the shank of the hook on through the wound, to prevent the laceration incident to drawing the beard backward. All this takes no account of the fact that the first fish hooked in a virgin lake or stream, where no experience with contrivances of the kind has been possible, either to that particular fish or its ancestors, will go through exactly the same manoeuvres as one of the same species in frequently fished water. The characteristic shake, we might almost say *shudder*, of a small-mouthed black bass, as it springs into the air with a hook in its mouth, is too natural a reflex effect of the sudden pain and nervous shock experienced to need any explanation which lugs in the advanced mental processes of the civilized human being. However, the gross amount of this new-fangled animal-psychology of the story writers is too small to be regarded as a serious drawback to Mr. Holder's books. All in all, we shall be surprised if the present season brings forth any comparable offering in the way of outdoor literature.

*The Heart of the Railroad Problem: The History of Railway Discrimination in the United States, the Chief Efforts at Control, and the Remedies Proposed, with Hints from Other Countries.* By Prof. Frank Parsons, Ph.D. Boston: Little, Brown & Co. \$1.50 net.

Some years ago, when the mania for serial biographies was at its height, a magazine publisher is said to have rejected a proffered manuscript with the remark, "What I want is a *snappy* life of Christ." The quality which the publisher required is very much in evidence in Professor Parsons's book. The volume is before everything else a "snappy" indictment of the railroads. Its thesis is, that "our railway practice is a tissue of unjust discrimination, denying the small man equal opportunity with the rich and influential." That there is very substantial ground for this charge is undeniable, but the author pursues his quest in curiously discursive

fashion symptomatic of *la courbe hâleine*. Instead of assembling his counts under three or four main heads, he meanders through more than thirty chapters, each devoted to some phase of railroad iniquity. Again and again he recrosses his own argumentative trail. Thus, chapter 14, on Locality Discrimination, chapter 27, on The Long-Haul Anomaly, and chapter 28, on Other Place Discriminations, all treat of essentially the same theme. Chapter 13, entitled Imports and Exports, duplicates chapter 29, on Nullifying the Protective Tariff. In chapter 30, his "assortment of favoritisms" numbers over sixty separate offences. Browning's

Twenty-nine distinct damnations,  
One sure if another fails,

is simply nowhere by comparison.

The average chapter is short, and rather more readable than the usual assault upon common carriers. Interviews and fragments of testimony, both questions and answers, are interspersed in the text. Occasionally a happy phrase throws a gleam of humor upon the discussion. Thus, on page 76, Professor Parsons remarks: "Aside from these sudden fainting spells of the oil tariff at convenient seasons for the Standard, the ordinary arrangements showed thoughtful care for its comfort." The author has an extensive knowledge of concrete facts about railroads. He has interviewed many railroad officials, and has travelled widely in quest of information. But no one will ever charge him with an undue tendency towards discrimination. He does not adequately sift the instances he cites. He does not always cross-examine his facts. An *ex-parte* statement, as on page 56, is as good as a court decision if it tends to help his case. He habitually underestimates or minimizes the influence inevitably exerted on rates by water transportation. A tyro could explain the disparity in the rates between New York and Ogden, and between New York and San Francisco (p. 25). Occasionally Professor Parsons falls into downright error. Thus, on page 282, he asserts that the Interstate Commerce Commission "has not been overruled in respect to questions of fact, but on the application of what it believed to be law." And yet in the San Bernardino case the Circuit Court declared the facts "to be widely different from those set out in the report of the Commission."

Professor Parsons evinces no very thorough grasp of the theory of transportation. He has never taken to heart the adage, *non multa, sed multum*. He evidently inclines to a gradual realization of the postal principle of uniform charges irrespective of distance as the rule for railroad rates. Thus, on page 293, he remarks: "The equalization of rates through application of the principle to one commodity after another, or the gradual extension of zone distances in a zone tariff, offers the only hope of attaining a really just and scientific system of rates."

The sanest, most judicious part of the book sounds a warning against entertaining extravagant hopes that discrimination will practically cease if the power to set maximum rates is conferred on the Interstate Commerce Commission. Twenty-two States have given their respective commissions certain powers of fixing rates on intra-State traffic. "In none of the States does

the power to regulate rates appear to have produced results of much value" (p. 255, note). Many kinds of discrimination, as Professor Parsons shows, will hardly be removed even if pooling is legalized. As an opportunist policy the author supports the Hepburn bill, but he looks forward with hope to the eventual nationalization of our railroads.

The book is a readable collection of single instances of railroad enmities. In the hands of one acquainted with the essentials of transportation, it may prove of service; in the hands of a novice, it is likely to engender prejudice and disseminate error.

*The Dynamics of Living Matter.* By Jaques Loeb. Columbia University Press. New York: The Macmillan Co. \$3.

*Chemistry of the Proteids.* By Gustav Mann. Macmillan. \$3.25.

It is needless to say that no living wight comprehends even the outlines of the dynamics of living matter or the chemistry of any protoplasmic body. But it is an intensely interesting thing to see with what resistless march science seems to be now approaching the final investment of the two strongholds, of which the latter must be the key to the former. The attack upon that may be said to be the highest enterprise that man has ever undertaken with any reasonable prospect of success. The body of a living being is a chemical "works" of stupendous complexity, whose operations are of a most delicate nature. One could not, thirty years ago, have ventured even upon that statement without fear of contradiction; but it is now plain that it is a problem of chemistry, in which other sciences have to be considered about in the same proportion that they must be in explaining the manufacture of sulphuric acid.

In his "Concluding Remarks," Professor Loeb declares that the goal of biology is "experimental abiogenesis." He doubtless thought the time had not come to pick one's words upon such a point, but in any sense in which such a feat could be the goal of biology, it must include a practical understanding of the chemical constitution of albumens and nucleic acids. These are all optically active bodies, twisting the rays of light which pass through them, albumens to the left, nucleic acids to the right. At present, we can isolate such bodies only by the aid of other optically active bodies. Indeed, as yet we do not know what holds the atoms even of ordinary chemical compounds together. If chemical synthesis were uniformly accompanied by an evolution of heat, we should, no doubt, infer that attractive forces hold different kinds of atoms together in one molecule; but as long as there are decidedly stable bodies, such as acetylene, in whose synthesis heat disappears, it is plain that something besides attractions or repulsions must be concerned in the effect. When we say that we understand the constitution of a chemical substance, we mean that we know what all the linkages of pairs of atoms are, and also what those modes of connection are that are not described by saying with what atoms each atom is linked and by how many bonds, but require a "stereochemical diagram" to represent the case. We now know that the

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reactions of a chemical body depend, not only upon its constitution, but also upon its impurities; for many of the most violent reagents are absolutely inert when they are absolutely pure; and there can be no doubt that the minute quantities of different salts which accompany the different albumens are essential to their chemical behavior. Even neglecting them, we cannot write the constitutional formula of any natural albuminous substance; and even if some archangel were to draw it up for us, with its fifteen thousand atoms represented by close-packed letters on a large sheet, where is the human intellect, to which the diagram could reveal much? We do, however, now know, in a general way, that perhaps three-fourths of an albumen molecule consists of various alpha-amino-acids (which unite the characters of acids and bases), linked together as acid-amides—a description which, to a chemist, is sufficiently comprehensible and does not imply any terrible intricacy. There are further theories of Dr. Mann which appear to be almost proved, and which promise a still more definite conception of the protein bodies. It can no longer be said, as the chemistry books of only a few years ago told us, that the constitution of the proteins is "completely hidden in night." Dr. Mann gives a list of twenty-eight of their "primary dissociation products," or bodies which are almost fully present in the albumens, and discusses them clearly. His work professes to be based upon that of Prof. Otto Cohnheim, but in truth has many original merits of its own, and upon more than one point opposes Cohnheim's opinion, sometimes with great ability.

Dr. Mann's volume is severely scientific. Professor Loeb's, without any special charm of style or manner, recounts a history of ingenious and sound research by many biologists which will absorb the attention of average readers even if they find a reference to a dictionary occasionally helpful. Its main purport is that all the phenomena of development, self-preservation, and reproduction are capable of plain and complete physical and chemical explanation. It is not pretended that we are already in possession of such complete explanation; but that the explanation awaits only a further development of chemistry and of physiology (possibly of anatomy, too) to come to light. Upon this point, which is the kernel of his volume, Professor Loeb does not make his logic quite clear. His conclusion, that physiological life is fully explicable upon physical and chemical principles, is repeatedly asserted by him in unmistakable terms. His declarations are so emphatic that he is led to deflect such terms as "mysterious" and "metaphysical" from their precise philosophical acceptations in order to intone the disapproval, not to say reprobation, that he entertains for the opposite opinion. Yet he never tells us just how his position is supposed to be logically justified. If he only meant that it is a thoroughly vicious scientific method to introduce any other than purely physical and chemical hypotheses, in the present state of the question, then the reviewer, to speak for one very humble intelligence, would go along with him most heartily (though in opposition to some eminent anatomists), and would quite agree that it is morally wrong to contaminate science with

such uncalled-for considerations. But such a merely regulative maxim of method would, after all, concern the scientific investigator alone, and not the general public, since it would not necessarily carry with it the slightest denial of the likelihood that "mysterious" and "metaphysical" agencies are at work, but only a denial that we are yet in a condition to prove their existence scientifically. Or, again, if Professor Loeb merely meant to say that the facts already in our possession are sufficient to render it improbable that the "mysterious" and "metaphysical" agencies, even if they exist, play more than an exceedingly subordinate part in the phenomena of physiological life, then we could understand how he might perhaps logically have reached such a conclusion. But his language is too absolute to afford room for such an interpretation.

The last sentence in the book, in its two clauses, both defines his position and affords some ground for characterizing it. It runs thus: "The idea that mutation is working in a definite direction is a mere anthropomorphism [this expands the term "anthropomorphism" to a vast and nebulous word, expressive of little but the utterer's aversion to that of which it is predicated], and, like all anthropomorphisms, is in contradiction with the facts." That is to say, because the writer is a brilliant leader in a difficult branch of physiology—a degree of eminence which can hardly have been attained without almost exclusive absorption in that branch of activity—he undertakes to make an absolute pronouncement upon a vexed question which concerns every department of human experience. Nevertheless, think what we may of such questions of logic, it is undeniable that the book is full of the most instructive and extraordinarily interesting matter, in large part new to all but the most fully informed, which is presented with great perspicuity, and put in as simple a form as possible.

*The Origin of Life: Its Physical Basis and Definition.* By John Butler Burke. New York: Frederick A. Stokes Co.

The mad Laird's plaintive cry, "I dinna ken where I came fra," is still repeated insistently by thoughtful men everywhere. From the questions of individual and family genealogy with which the most ancient records are burdened, the inquiry has proceeded to the origin and evolution of the human race, and the source of life itself. The theories of philosophers and biologists have been endless, and the discussion has received a distinctly novel impetus from the field of the new physics, especially the recently promulgated facts and theories of radio-active matter and the dynamic philosophy of such students of physical chemistry as Ostwald. General interest was aroused by the publication some months ago of the remarkable experiments of J. Butler Burke of Cambridge, England, upon the effect of radium salts upon sterile solutions of bouillon and other organic media. Under the influence of the radiations, small bodies (termed "radiobes") appear in the medium which behave strikingly like micro-organisms in that they grow in size and later exhibit nuclei and then divide. It is held that they are not bacteria nor even protoplasm, but that they are really alive, and represent transitional and evanescent

forms of matter and energy lying between the common inorganic types of matter and stable living aggregates. This author has just published a bulky volume entitled as above, in which these facts are fully presented, with illustrations, in a setting which shows their relations to the new electric theories of matter and energy and to a general philosophy of dynamic idealism. While biologists generally will probably regard this presentation, like the earlier one, as failing to prove the author's main thesis, viz., that his radiobes are in any ordinary sense alive, nevertheless, the volume will serve a valuable purpose as an excellent *exposé* of both old and new theories of the origin of life, and of a philosophy of nature which is growing in popularity.

*The Federalist System, 1789-1801.* By John Spencer Bassett. Pp. xviii., 327.—*The Jeffersonian System, 1801-1811.* By Edward Channing. Pp. xiii., 299. [The American Nation, vols. xi., xii.] New York: Harper & Bros. \$2 net each.

The above volumes of the "American Nation" series treat concisely two short periods of American history which, more than any others of equal length, are at once clearly defined and sharply contrasted. Nowhere in the constitutional period do we find a more decided break in spirit and temper than in passing from the administration of John Adams to that of Jefferson; and never, surely, has there been exhibited more complete oppositeness of view and aim. Into the first period of twelve years fall the organization of the Federal Government under the new Constitution, the erection of an administrative system, and the determination of certain primary rules of constitutional interpretation. The second period saw an effort to curtail the elaborateness and repair the excesses of Federalist administration, and to enthroned in the national field a new democratic spirit. Each period is burdened with intricate and vexatious controversies with foreign nations, and with dangerous revolts against the Government at home; each is marked by violent party struggles, all the more bitter because of the personal elements which entered into, and in a measure inspired, them; but while the Federalists, more and more disregarding of public opinion, eventually pulled down their party house upon their own heads, Jefferson contrived so to guide his political following as to give it long life and even essential permanence. Lastly, while Federalist "loose construction" evolved a theory of the Constitution under which almost anything may well have seemed possible, Jeffersonian literalness, persistently decrying the whole theory for which Federalism stood, calmly accepted an epoch-making expansion of national territory for which nobody pretended to find the slightest constitutional warrant.

The treatment of these two periods by Professor Bassett and Professor Channing is in most respects praiseworthy, and, at some points, superior. The ground has been gone over so often that particular novelty in arrangement is, of course, out of the question, though the story gains in clearness by the subdivision into short chapters which is characteristic of this series. Of the two volumes, that of Pro-

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