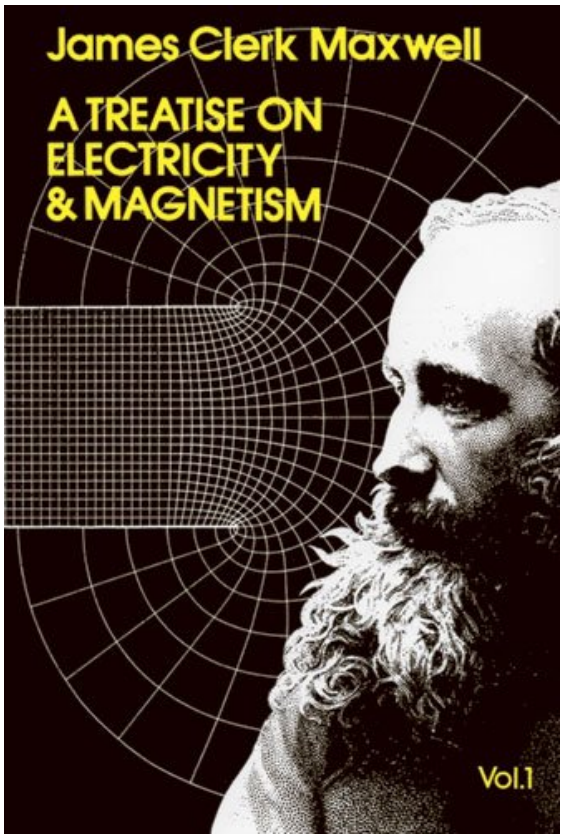

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Treatise on Electricity and Magnetism, Vol. 1

"Maxwell is without peer. This printing is an opportunity to become thoroughly acquainted with the thoughts of the greatest of our electrical scientists." — School Science and MathHere is the final elaboration of Maxwell's theory of electromagnetism, including the systematic and rigorous derivation of his general equations of field theory. These equations continue to occupy a central position in the modern physicist's view of the physical world. They are a magnificent summary of the fundamental advances in electricity and magnetism, and later inspired the theories of Lorentz on the electron and Einstein on relativity. Einstein himself has said that "The formulation of these equati

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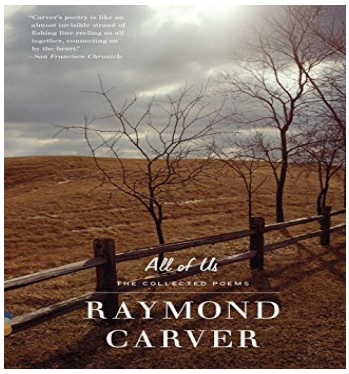

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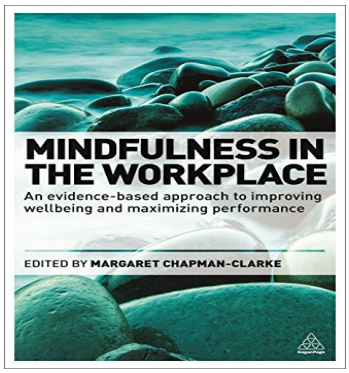

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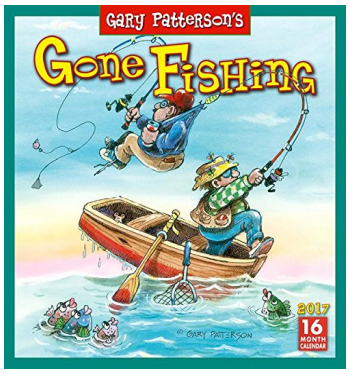
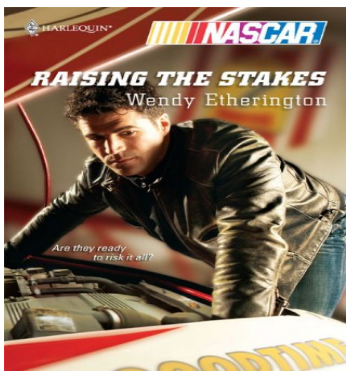


Gone Fishing by Gary Patterson 2017 Wall Calendar

Gone Fishing presents a humorous look at America's beloved pastime. With his usual flair for exposing the foibles of fanatics, renowned artist Gary Patterson offers comical tongue-in-cheek depictions of fishing and those who think the worst day at the fishing hole beats the best day anywhere else.



Raising the Stakes

When a family crisis brings Evie Winters home to North Carolina, she isn't prepared for her powerful reaction to Jared Hunt. Her old friend--and girlhood crush--is even more irresistible than ever. But Evie knows not to mix business with pleasure, especially if it sets her up for heartbreak

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Review 1:
This is the basis of electrical theory - his physics was rejected but his equations kept

Review 2:
I have to admit I haven't read this book; I bought it because Maxwell's equations represent one of the great advance in Physics, i.e. the integration of electricity and magnetism into a single theory. I have read that many physicists didn't understand the work when it was first published. Anyone who is serious about reading this book might want to purchase "A Student's Guide to Maxwell's Equations" by Daniel Fleisch

Review 3:
James Clerk Maxwell (1831-1879) was a Scottish mathematical physicist, who formulated the classical theory of electromagnetic radiation, showing electricity, magnetism, and light as manifestations of the same phenomenon. He also wrote Matter and Motion. The predecessor volume to this book is Treatise on Electricity and Magnetism, Vol. 1.

He notes, ?Our knowledge of Terrestrial Magnetism is derived from the study of the distribution of magnetic force on the earth?s surface at any one time, and of the changes in that distribution at different times. The magnetic force at any one place and time is known when its three coordinates are known.? (Pg. 129)

He explains, ?In the next five chapters of this treatise I propose to deduce the main structure of the theory of electricity from a dynamical hypothesis of this kind, instead of following the path which has led Weber and other investigators to many remarkable discoveries and experiments, and to conceptions, some of which are as beautiful as they are bold. I have chosen this method because I wish to shew that there are other ways of viewing the phenomena which appear to me more satisfactory, and at the same time are more consistent with the methods followed in the preceding parts of this book than those which proceed on the hypothesis of direct action at a distance.? (Pg. 198)

He summarizes, ?we shewed that the observed electrostatic forces may be conceived as operating through the intervention of a state of stress in the surrounding medium. We have now done the same for the electromagnetic forces, and it remains to be seen whether the conception of a medium capable of supporting these states of stress is consistent with other known phenomena, or whether we shall have to put it aside as unfruitful.? (Pg. 283) Later, he observes, ?magnetization is a phenomenon, not of large masses of iron, but of molecules, that is to say, of portions of the substance so small that we cannot by any mechanical method cut one of them in two, so as to obtain a north pole separate from a south pole.? (Pg. 471)

But he also expounds the idea of an ?ether?: ?I several parts of this treatise an attempt has been made to explain electromagnetic phenomena by means of mechanical action transmitted from one body to another by means of a medium occupying the space between them. The undulatory theory of light also assumes the existence of a medium. We have now to shew that the properties of the electromagnetic medium are identical with those of the luminiferous medium.? (Pg. 431) He also states in his conclusion, ?the undulatory theory of light has met with much opposition, directed not against its failure to explain the phenomena, but against its assumption of the existence of a medium in which light is propagated? all these theories lead to the conception of a medium in which the propagation takes place, and if we admit this medium as an hypothesis, I

think it ought to occupy a prominent place in our investigations, and that we ought to endeavor to construct a mental representation of all the details of its action, and this has been my constant aim in this treatise.? (Pg. 492-493)

This book will be of great interest to students of physics, and of the history of science.

Review 4:
James Clerk Maxwell (1831-1879) was a Scottish mathematical physicist, who formulated the classical theory of electromagnetic radiation, showing electricity, magnetism, and light as manifestations of the same phenomenon. He also wrote Matter and Motion. The successor volume to this book is Treatise on Electricity and Magnetism, Vol. 2.

He wrote in the Preface to this 1873 book, "The fact that certain bodies, after being rubbed, appear to attract other bodies, was known to the ancients. In modern times, a great variety of other phenomena have been observed, and have been found to be related to these phenomena of attraction. They have been classed under the name of `Electric' phenomena... Other bodies, particularly the lodestone, and pieces of iron and steel which have been subjected to certain processes, have also been long known to exhibit phenomena of action at a distance. These phenomena... have been classed under the name of `Magnetic' phenomena... These two classes of phenomena have since been found to be related to each other, and the relations between the various phenomena of both classes... constitute the science of Electromagnetism. In the following treatise I propose to describe the most important of these phenomena, to shew how they may be subjected to measurement, and to trace the mathematical connexions of the quantities measured... I shall endeavor to place in as clear a light as I can the relations between the mathematical form of this theory and that of the fundamental science of Dynamics." (Pg. v-vi)

He states, "These phenomena of attraction and repulsion are called Electrical phenomena, and the bodies which exhibit them are said to be electrified, or to be charged with electricity." (Pg. 32) He explains, "That in every case the motion of electricity is subject to the same condition as that of an incompressible fluid, namely, that at every instant as much must flow out of any given closed surface as flows into it." (Pg. 69-70) He summarizes, "there is a direct action at a distance between electrified bodies, which is the resultant of the direct actions between the various electrified parts of the bodies." (Pg. 123)

He observes, "There is nothing therefore among electric phenomena which corresponds to the capacity of a body for heat. This follows at once from the doctrine which is asserted in this treatise, that electricity obeys the same condition of continuity as an incompressible fluid. It is therefore impossible to give a bodily charge of electricity to any substance by forcing an additional quantity of electricity into it." (Pg. 366)

This book will be of great interest to students of physics, and of the history of science.

Review 5:
See my rating and commentary on the first volume. The original engineering sourcebook. You need a year of calculus first but reading through still provides original insights on how mathemations of the time contributed to all fields of engineering as discussed by Maxwell.

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