tissue, permitting the enzymes to hydrolize a glucosoid in the fruits, liberating the hydrocyanic acid.

Due to the low temperature of that morning, sufficient amounts of this extremely toxic compound had accumulated in the fruits to cause the death of the cedar-waxwings.

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A NEW LOCALITY FOR THE BLACK WIDOW SPIDER

AN adult female of *Latrodectus mactans* (Fabr.) was found early in July, 1935, at Parfrey's Glen, near Prairie du Sac, at the edge of the Driftless Area of Wisconsin. This is the first case of finding this spider within the boundaries of this state.[1] The web, found in tall marsh grass about two and a half feet from the ground close to a marshy plot near a small stream, was of characteristic construction. The spider was brought back to the laboratory, where she laid two eggs sacs within five days of each other. The young hatched in about twenty days.

It is of particular interest to note that two males and two females of *Gea heptagon* (Hentz), an orb-weaver previously reported only from the southern United States and as far north as the District of Columbia,[2] were also found in the same locality. A collection of spiders made during the past four years, including about four thousand specimens and over two hundred species from many different localities throughout Wisconsin, has failed to reveal the presence of these two species elsewhere in the state.

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FRESH-WATER MEDUSAE IN IOWA

ON August 20, a strange animal was reported in Avon Lake, a gravel pit 10 miles southeast of Des Moines. On investigation many specimens of the fresh-water medusae, *Craspedacusta sowerbyi,* were found moving about near the surface of 15-foot water.

At different times, these animals were collected and kept alive in jars for ten-day periods. The character of 4 tentacles erect while swimming could not be definitely ascribed to this species. Some individuals did show a tendency to hold the long tentacles upward, however the majority of medusae observed held the tentacles in a pendulous position.

Observations were kept on these coelenterates in their natural medium for 30 days. At the end of this period they had moved out of the deeper water into shallower reaches. Specimens on the 18th of September swam, either with all tentacles upward or all held downward.

This is the first time apparently that *C. sowerbyi* has been recognized in Iowa.

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SCIENTIFIC BOOKS

VAGARIES OF BELIEF

Wish and Wisdom: Episodes in the Vagaries of Belief. By JOSEPH JASTROW. D. Appleton-Century Company, Inc., New York, 1935, 394 pp., $3.50.

MORE than three hundred years ago Francis Bacon, having discerned that knowledge can be power, set himself the task of describing and classifying the knowledge which is not power. He divided it into three groups: the delicate, the contentious and the fantastic. Like the knowledge which is power, fantastic knowledge is an effort to discriminate and to manipulate natural causes in such a way as to control the march of natural events. Like true knowledge, this effort takes on a certain pattern of procedure and operation. But unlike true knowledge of causes this effort neglects the conditions and ignores the methods of control. In effect, it deliberately leads human beings astray.

In this forthright and epigrammatic book Joseph Jastrow resumes Bacon's epic theme. He brings together samples of fantastic knowledge from all the ages, beginning with Lucian's classic Alexander and stopping with Richet and von Reichenbach and their contemporaries. He stops, he does not finish, because the material goes on, not only reproducing old fantasies but generating new ones. It can be exhibited by the method of sampling alone. That the analysis and judgment of the samples should carry conviction to believers in the fantastic is not, of course, to be expected. The study can only confirm those who already agree with Mr. Jastrow in their infidelity: they can not convert the true believers. But to his fellows in infidelity Mr. Jastrow's book should bring merriment and illumination. Between a "Foreword" and an "Afterword" of psychological comment, he sets, decently and in order, a chain of instances which he classifies as "Credulity," "Magic and Marvel," "Transcendence," "Prepossession," "Congenial Conclusions," "Cults and Vagaries" and "Rationalization." Under "Credulity" he links the picaresque career of

[1] C. E. Burt, *Jour. Kans. Ent. Soc.,* 8 (4): 117–130, 1935.

[2] A. Petrunkevitch, *Bull. Am. Mus. Nat. Hist.,* 29: 345, 1911.

"Leo Taxil" with Conan Doyle's belief in fairies. Under "Magic and Marvel" he groups ideas about the devil and the not-so-strange case of Madame Blavatsky. Under "Transcendence" he places the various marvels that psychical researchers research into. Under "Prepossession" figure believers in that Aryan genius, the horse *Kluge Hans,* in clairvoyants and similar instruments of the will-to-believe. Under "Congenial Conclusions" the mysteries of palmistry and numerologies are revealed. Under "Cults and Vagaries," Mr. Jastrow expounds speculations, from phrenology to eccentric theories of various scientists and pseudoscientists. Under "Rationalization" he pays disconcerting attention to "od," "n-rays," auras, vibrations and ectoplasms.

The tale of these adventures of the mind is, as Mr. Jastrow tells it, a picaresque epic, pointing a rationalist moral, and told with the incisiveness and epigrammatic pith which distinguishes Jastrow's psychological writing from most of his colleagues'. From his standpoint of classical materialistic determinism, he designates these systems of belief as "pseudologies" or "thobbings," and, if I understand him correctly, attributes them to the event that "the logical occupation is beset by intrusions from other human interests." They are to him waves of the continuous flow of belief through folklore and doctrine: there survive in them ancestral wish and traditional wisdom whose root is subjectivism and whose heart is the inveterate habit of jungle magic. He regards the various categories of wish as the forms of intrusion upon "the logical occupation." He thinks that the intrusions can occur because the thought involved is essentially vague, implemented by analogy and symbol and resting on a feeble sense for fact.

All of which is undoubtedly correct. But it is also correct that Mr. Jastrow's judgment upon the vagaries of belief is made retrospectively and externally; that it derives from a set of premises the believers do not share, and that these premises are themselves no less objects of faith than the propositions they contradict. The "scientific" concepts which he employs as his standard of judgment seem to me to differ only in content and consequence, not in mood and method from the vagarious concepts he judges. Analogy and symbol are as inseparable from science as from faith, a fantasy can be as articulate and precise as a fact, a scientific notion as vague as a fantastic one. Neither logical structure nor laboratory procedure can convincingly validate our beliefs; only developing consequences can do that. As Mr. Jastrow himself observes, the history of science is a history of the outgrowth of error. But what makes any belief an error is not its intrinsic character but its displacement by another belief which enables a better control of the same field. "Error" is a retrospective judgment of cognitive value. Like truth, it has no intrinsic criteria. If it had, nobody could any longer be a Christian or a Mohammedan or a Judaist, to say nothing of a vagarist in any other field. Mr. Jastrow's deliverances seem harsher and less tolerant than his excellent demonstration of his case requires.

H. M. KALLEN

NEW SCHOOL FOR SOCIAL RESEARCH

THE STRENGTH OF MATERIALS

Elements of the Strength of Materials. By S. TIMOSHENKO and GLEASON H. MAC CULLOUGH. Cloth; 6 × 9 in.; pp. 350. Line drawings and tables. Published by D. Van Nostrand Company, Inc., New York City. $3.25.

ENGINEERING text-books on strength of materials may be roughly divided into three classes: (1) drill books which develop the simple formulas used by structural engineers and machine designers and which emphasize the immediate practical application of the formulas to the commoner units of design—beams, shafts and columns; (2) books which emphasize the mathematical development of formulas, which take up more elaborate analyses than do the books of the first class, and which, in their advanced chapters at least, approach the outer courts of the mathematical theory of elasticity, and (3) text-books which emphasize the structure and mechanical properties of actual materials of construction, as well as the ordinary formulas for stress analysis of parts assumed to be made of the ideal homogeneous and isotropic material assumed in the mathematical theory of elasticity.

This book is an excellent example of the second class. As might be expected (and welcomed) from the name of the senior author, it has a distinct European flavor in its symbols, its nomenclature and its general approach to problems. In saying that this book emphasizes mathematical development of stress analysis the reviewer does not intend to convey the idea that it is one-sided. It contains a chapter on the properties of materials with a brief discussion of theories of failure, and a short, but interesting, discussion of working stresses.

Two features of the book strike the reviewer as especially worthy of study—the treatment of beams made of material which does not follow Hooke's law and the section on yielding and buckling of columns. An excellent mechanical feature of the book is the arrangement in self-contained sections of alternate methods of mathematical treatment of the deflection of beams, and of stress analysis of statically indeterminate beams, so that, if lack of time makes it necessary for the teacher to omit the study of any particular method, it can be done without interfering with the