upen court

A MONTHLY MAGAZINE

Devoted to the Science of Religion, the Religion of Science, and the Extension of the Religious Parliament Idea

Editor: Dr. Paul Carus.
Assistant Editor: T. J. McCormack.

Associates: E. C. Hegeler.

VOL. XVII. (NO. 1)

JANUARY, 1903.

NO. 560

CONTENTS:

Frontispiece. MAJOR JOHN WESLEY POWELL.	
Mithraic Art. Illustrated. PROFESSOR FRANZ CUMONT, Ghent, Belgium .	Ţ
John Wesley Powell. A Biography. II, The Soldier. Mrs. M. D. LINCOLN	
(Bessie Beech), Washington, D. C.	
Sketch of the History of Thermometry. Liquefaction of Gases, etc. Illustrated.	
(Concluded.) Dr. Ernst Mach, University of Vienna	26
Mrs. Lydia Pratt Bonney. [With Several Unpublished Poems by the Hon.	
Charles Carroll Bonney.] EDITOR	37
Foundation of a Lay Church. With Programme, General Principles, Etc.	
A Suggestion. EDITOR	52
The Chinese Chair at Columbia,,	55
A New Field for Philosophy. S. D. MERTON	56
Christmas. A Poem. ALEXANDER F. CHAMBERLAIN	59
Tolstoy and Frau Seuron. FAIR PLAY	59
Book Reviews	60
Notes	64

CHICAGO

The Open Court Publishing Company

LONDON: Kegan Paul, Trench, Trübner & Co., Ltd.

Per copy, 10 cents (sixpence). Yearly, \$1.00 (in the U. P. U., 5s. 6d.).

IMPORTANT PUBLICATION!

The Science of Mechanics

A Critical and Historical Account of Its Development

THE SCIENCE OF MECHANICS. A Critical and Historical Account of Its Development. By **Dr. Ernst Mach**, Professor of the History and Theory of Inductive Science in the University of Vienna. Translated by **Thomas J. McCormack.** Second Enlarged Edition. 259 Cuts. Pages, xx, 605. Cloth, Gilt Top, Marginal Analyses. Exhaustive Index. Price, \$2.00 net (9s. 6d. net).

Comments on the First Edition.

"Mach's Mechanics is unique. It is not a text-book, but forms a useful supplement to the ordinary text-book. The latter is usually a skeleton outline, full of mathematical symbols and other abstractions. Mach's book has 'muscle and clothing,' and being written from the historical standpoint, introduces the leading contributors in succession, tells what they did and how they did it, and often what manner of men they were. Thus it is that the pages glow, as it were, with a certain humanism, quite delightful in a scientific book... The book is handsomely printed, and deserves a warm reception from all interested in the progress of science."—The Physical Review, New York and London.

"Those who are curious to learn how the principles of mechanics have been evolved, from what source they take their origin, and how far they can be deemed of positive and permanent value, will find Dr. Mach's able treatise entrancingly interesting.... The book is a remarkable one in many respects, while the mixture of history with the latest scientific principles and absolute mathematical deductions makes it exceedingly attractive."—Mechanical World, Manchester and London, England.

"The book as a whole is unique, and is a valuable addition to any library of science or philosophy. . . . Reproductions of quaint old portraits and vignettes give piquancy to the pages. The numerous marginal titles form a complete epitome of the work; and there is that invaluable adjunct, a good index. Altogether the publishers are to be congratulated upon producing a technical work that is thoroughly attractive in its make-up."—Prof. D. W. Hering, in Science.

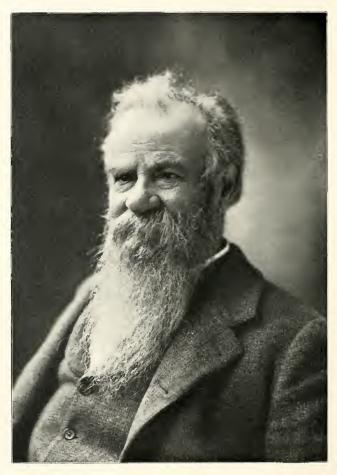
"A masterly book.... To any one who feels that he does not know as much as he ought to about physics, we can commend it most heartily as a scholarly and able treatise... both interesting and profitable."—A. M. Wellington, in *Engineering News*, New York.

"Sets forth the elements of its subject with a lucidity, clearness, and force unknown in the mathematical text-books... is admirably fitted to serve students as an introduction on historical lines to the principles of mechanical science."—Canadian Mining and Mechanical Review, Ottawa, Can.

"There can be but one opinion as to the value of Mach's work in this translation. No instructor in physics should be without a copy of it."—Henry Crew, Professor of Physics in the Northwestern University, Evanston, Ill.

THE OPEN COURT PUBLISHING CO., CHICAGO, St. 324 Dearborn St.





MAJOR JOHN WESLEY POWELL.

(1834-1902.)

Frontispiece to The Open Court.

THE OPEN COURT

A MONTHLY MAGAZINE

Devoted to the Science of Religion, the Religion of Science, and the Extension of the Religious Parliament Idea.

VOL. XVII. (NO. 1.)

JANUARY, 1903.

NO. 560

Copyright by The Open Court Publishing Co., 1902.

MITHRAIC ART.

BY PROFESSOR FRANZ CUMONT.

THE monuments of Mithraism, which have been found in considerable numbers in the provinces of the Occident and even in the Orient, constitute a homogeneous group, of which it is desirable to characterise the importance for the history of Roman art. In point of fact, their artistic merit is far below that of their value as historical documents, and their chief worth is not æsthetic but religious. The late epoch in which these works were produced destroys the least hope of finding in them any expression of true creative power or of following in them the progress of any original development. But it would be unjust if, inspired by a narrowminded Atticism, we should cast upon them all a like degree of reproach. In the absence of inventive genius, their cleverness in the adaptation of ancient motifs and the manual skill shown in their execution,—all technical qualities of which they give evidence, would alone be sufficient to claim our attention. Some of the groups in high and low relief,—for the paintings and mosaics which have been preserved are so few and mediocre as to dispense us from speaking of them,—hold a very honorable place in the multitude of sculptured works which the imperial period has left us, and are deserving of some consideration.

It can be proved 2 that all our representations of the tauroctonous Mithra, the hieratic figure of which was fixed before the propagation of the Mysteries in the Occident, are more or less faithful replicas of a type created by a sculptor of the school of Pergamos,

¹Extracted by the author from his Textes et Monuments figurés relatifs aux Mystères de Mithra (Brussels: H. Lamertin). Translated by T. J. McCormack.

²Compare my large work *Textes et Monuments figurés relatifs aux Mystères de Mithra*, Vol. II., pp. 180 et seq.

in imitation of the sacrificing Victory which adorned the balustrade of the temple of Athena Nike on the Acropolis. Certain marbles discovered at Rome and at Ostium (see Fig. 1), which unquestionably go back to the beginning of the second century, still reflect the splendor of the powerful compositions of the Hellenistic epoch. After an ardent pursuit, the god captures the bull, which has fallen to the earth; with one knee on its croup and his foot on one of its hoofs, he bears down upon it, pressing it against the earth; and grasping it by the nostrils with one hand, with the other he plunges a knife into its flank. The impetuosity of this animated scene throws in high relief the agility and strength of the invincible hero. On the other hand, the suffering of the moribund victim gasping



Fig. 1. Tauroctonous Mithra.

Marble Group in the British Museum.

its last, with its limbs contracted in the spasms of death, the singular mixture of exaltation and remorse depicted in the countenance of its slayer, give prominence to the pathetic side of this sacred drama, and even to-day inspire in the heart of the spectator an emotion which the faithful of old experienced in all its living power.

The traditional type of torch-bearers, or *dadophori*, was not susceptible of a similar impassioned treatment. But one remarks, nevertheless, in the best specimens the advantageous effect which the artist has produced by the ample Phrygian garments and by emphasising the different emotions of hope and sadness portrayed

on the countenances of the two young men. We possess a remarkable reproduction of this divine couple in the two statues discovered near the Tiber, which Zoëga attributed to the epoch of Hadrian and which were possibly imported from the Orient to Italy. It will be seen how their author succeeded in offsetting the defec-



tive symmetry resulting from the fact that the two figures, which are intended as counterparts, have both their mantles fastened at the right shoulder and falling down at the right side.

The solicitous concern for details which characterises the 1 Tet M, Mon. 27, Plate II, opposite page 200, Vol. II.

works of the Antonine epoch was also bestowed with more or less felicity upon the monuments of a slightly more recent date. Consider the group of Ostia, which dates from the reign of Commodus, or the bas-relief of the Villa Albani, which appears to be contemporaneous with the first.1 The artist delighted in multiplying the folds of the garments and in increasing the undulations of the hair merely to show his skill in conquering the difficulties which he had himself created; yet even this bizarre mannerism does not atone for the coldness of the total impression. The success of this minute execution of details is more felicitous in fragments of smaller dimensions. A small marble recently discovered in Aquileia, and here reproduced in Fig. 2, is distinguished in this respect by a "bewildering cleverness of technique." The delicately carved figures are almost entirely severed from their massive base, to which they are attached only by the thinnest supports. It is a piece of artistic braggadocio in which the sculptor parades his virtuosity in producing with a brittle material the same effects that are obtained by workers in ductile metals.2

But these comparatively perfect compositions are rare in Italy and especially so in the provinces, and it has to be acknowledged that the great mass of the Mithraic monuments is of discouraging mediocrity. The hewers and cutters of stone—they deserve no other name—who are responsible for these productions, were often content with roughly outlining by a few strokes of the chisel the scene which they pretended to reproduce. A garish coloring then emphasised certain details. The work is sometimes so hastily executed that the contours alone are distinctly marked, as in the hieroglyphics. It sufficed, it is true, merely to outline representations, the meaning of which every faithful devotee knew and which he completed in imagination; and it is our ignorance that feels so vividly the imperfections of these awkward and vague compositions. Still, some of the smaller bas-reliefs could never have been more than downright caricatures bordering on the grotesque, and their deformities strongly remind us of the little toy gingerbread men which are sold at our fairs.

¹ Tet M. Mon. 79, Fig. 67; and Mon. 38, Fig. 45.

² M. von Schneider, loc. cit., Vol. II., p. 488, who sees in this composition "ein verbliffendes technisches Geschick," compares it with the relief on the base of the Antonine column (Brunn, Denkmäler gr. u. röm. Skulptur, Pl. 2106), and a bas-relief of the Campo Santo of Pisa (Dütschke, Bildwerke in Ober-Italien, I., No. 60), and the bust of Commodus in the Palais des Conservateurs (Helbig, Führer, second ed., No. 524). The same application of the technique of metal-working to marble may be noticed in two admirably preserved busts which were discovered at Smyrna and are to-day to be found in the Museum at Brussels (Catal. des antiquitless acquises par les mustles royans depits le tre fancier 1900, Bruselles, 1901, Nos. 110-111).

The carelessness with which these tablets were executed is excused by their places of destination. The mystics of Mithra were wont not only to consecrate them in their temples, but also to adorn with them their modest dwelling-houses. This domestic consumption explains the enormous quantity of these monuments, which have been found wherever the cult penetrated. To satisfy the incessant demand of the faithful for these figures, the workshops in which they were carved must have produced them rapidly and in quantities. The manufacturers of this brummagem sculpture had no other thought than that of cheaply satisfying their clientage of devotees, whose artistic tastes were far from exacting. The ancient manufacturers turned out hundreds of smaller tauroctonous Mithras. 1 just as our image-makers multiply in profusion the very same crucifixes and the very same Virgin Mary. It was the religious imagery of the epoch, and it was not more æsthetic than is ours to-day.

These manufacturers did not restrict themselves to the unceasing production of replicas of the same traditional type; they sought to diversify their wares, in order to recommend them to all tastes and purses. Look only at the series of ex-votos found in the Mithræum of Sarmizegetusa in Dacia.2 We find here specimens of all the models that the workshops of the place reproduced. High reliefs, which are difficult and costly, are avoided. At most, the marble was perforated in places, so as to show forth the group of the tauroctonous god. But what a wondrous variety in the small bas-reliefs which were affixed to the walls of the sanctuaries! For a mere bagatelle square tablets could be obtained bearing only the immolation of the bull. Sometimes its value is enhanced by the addition of a sort of predella, divided into three or four smaller scenes. Again, its composition is complicated by an upper panel decorated with accessory scenes. These, finally, also occupy the borders of the monuments, and encompass on four sides the principal representation. Again, the fancy of the workman taking flight, the tauroctonous god has been enclosed in a circle ornamented with the signs of the zodiac, or in a crown of foliage. Frames were added or omitted. Considerable ingenuity was exercised to give new forms to the sculptured plaques. They were indiscriminately square, oblong, semicircular, trapezoidal, or even round. There are no two of these pieces which are exactly alike.

¹ The absence of machinery naturally excluded any absolute resemblance, but some of our bas-reliefs are certainly from the same hand or at least from the same workshop. Cp. $Tet\ M$, Vol. 11., Mon. 45 and 46; 93, Fig. 83 and 95. Fig. 87; 192 and 192 6t; 194 and 195.

² T et M, Vol. II., Nos. 138 to 183.

If these commercial products of labor for hire have only the remotest relationship with art, they nevertheless furnish a valuable commentary upon the stone hewing industry of antiquity. We have many proofs that a goodly portion of the sculptures intended for the provincial cities were executed during the imperial epoch at Rome. This is probably the case with some of the monuments discovered in Gaul, and also for those which adorned a Mithræum in London.2 On the other hand, certain statues discovered in the capital were presumably imported from Asia Minor.³ The beautiful bas-reliefs of Virunum were likewise brought from abroad, probably by way of Aquileia. We know by the passion of the Four Crowned Ones the importance of the quarries of Pannonia in the third century,4 where marble was not only quarried but worked. These stone-yards appear to have been an important center for the manufacture of Mithraic votive offerings. In any event, there are several of them, exhumed in the temples of Germany, which were unquestionably sculptured on the banks of the Danube. These facts cast an interesting light on the traffic in church ornaments during the days of paganism.

Yet the majority of the Mithraic monuments were undoubtedly executed on the spot. The matter is clear for those which were sculptured on the walls of natural rocks smoothed for the purpose,—they are unfortunately all greatly damaged,—but the proof of local manufacture for many others is also forcibly forthcoming from the nature of the stone employed. The construction of these fragments likewise clearly reveals that they are not the handiwork of foreign masters and of some great center of art, nor even of those nomadic sculptors who traversed the land in quest of lucrative or honorific employment, but of the modest stone-cutters of some neighboring town.

The local origin of the largest monuments is best established, since their transportation would have involved both numerous risks and extravagant expenditures. Our collection of large Mithraic bas-reliefs thus constitutes a highly interesting group for the study of the provincial art of the empire. Like the mass of votive tablets that have come down to us, these sculptures, which were exhibited

¹ Friedländer, Sittengeschichte, Vol. 1II, p. 280.

² Tet M, Vol. II., Mon. 267 and the note on p. 390.

⁸ Tet M. Vol. II., Mon. 235 and the note on p. 338. Cf The Open Court for September, 1902,

⁴Wattenbach, Passio sanct, quatuor coronat., with the notes of Benndorf and Max Büdinger. 1870; cf. Friedländer, op. cit., p. 282. A new text has been published by Wattenbach, Sitzungso, Akad., Berlin, XLVII., 1896, p. 1281 et seq. There still exists of this work an unpublished Greek translation; cf. Analecta Bollandiana, XVI., 1897, p. 337.

in the apse of the temples for the adoration of the faithful, are also far from being masterpieces of art. But they were nevertheless not executed with the same carelessness, and we feel in their presence that their authors bestowed upon them their best energies. If the artists afforded no proof of originality in the invention of subjects, they nevertheless give evidence of ingenuity in the arrangement of their figures and of their skill in handling the material.

It must not be forgotten, further, in judging of these fragments, that the painter came to the aid of the sculptor and that the brush completed what the chisel had only sketched. On the naked marble or on stone coated with plaster, flaring colors were laid: green, blue, yellow, black, and all shades of red were wantonly intermingled. This glaring contrast of tones accentuated the main contours of the figures, and made prominent their secondary parts. In many cases the details were only indicated with the brush. Gilding, finally, emphasised certain subsidiary features. In the penumbral darkness of the subterranean crypts, the reliefs of these sculptured compositions would have been almost invisible without this brilliant polychromatic vesture. Vivid variety of coloring, moreover, was one of the traditions of Oriental art, and Lucian had already contrasted the simple and graceful forms of the Hellenic deities with the ostentatious gaudery of the gods imported from Asia.1

The most remarkable of these sculptures have been brought to light in the north of Gaul, or, more precisely, on the Rhenish frontier. It appears that we must attribute this entire group of monuments to that interesting school of sculpture which flourished in Belgium in the second and third centuries, the productions of which unquestionably surpass those of the workshops of the south. One cannot contemplate the bas-reliefs of Osterburken, which are the most complete of the series, without being impressed with the wealth and the general harmony of this vast composition. The confused impression resulting from the accumulation of personages and groups,—a defect which the Mithraic monuments show with many others of their epoch, and especially with the sarcophagi, the composition of which is generally intricate,—is here tempered by the judicious use of separating bands and frames. If we were anxious to criticise the details of these works, it would be easy to point out the disproportion of certain of their figures, the awkwardness of certain of their movements, and sometimes the stiffness of

¹ Lucian, Jup. trag., § 8.

their attitudes and vestments. But these defects should not render us oblivious to the delicacy of the work here performed with a crumbling material, and especially to the praiseworthy success with which a conception of real grandeur has been realised. To attempt to represent on stone not only the gods but the cosmogony of the Mysteries and the episodes of the legend of Mithra, even to the final immolation of the bull, was an undertaking attended with great perils and is a meritorious achievement even in partial success. Even prior to this date, and particularly on the sarcophagi,



GRAND BORGHESI BAS-RELIEF. (Louvre.)

instances occur where the successive moments of the drama are depicted on superposed or parallel plates, but we cannot, nevertheless, cite a single monument of Roman paganism which can be compared in this respect to our grand bas-reliefs, and for similar productions we must wait for the lengthy compositions with which the Christian mosaicists decorated the walls of their churches.

We shall not inquire here into the origin of each one of the different representations which are portrayed upon our monuments; we shall merely observe that in spite of their variety two or even

three clearly marked classes may be distinguished. Some of the figures have been borrowed outright from the traditional types of Græco-Roman art. Ahura Mazda destroying the monsters that had risen against him is a Hellenic Zeus annihilating the giants with his bolts; Verethragna is transformed into a Hercules; Helios is



Fig. 3. MITHRAIC KRONOS, OR PERSONIFICATION OF INFINITE TIME.

Here represented without the head of a lion, which appears on the breast of the figure. This is a Roman beautification of the horrific features of the Oriental God. (Bas-Relief of Modena.)

a young man with long flowing hair, mounted on the usual quadriga; Neptune, Venus, Diana, Mercury, Mars, Pluto, Saturn, are

shown to us in their ordinary aspect with the garb and attributes which are known from time immemorial to have been theirs. Similarly, the Winds, the Seasons, and the Planets had been personified long before the propagation of Mithraism, and the latter cult had only to reproduce in its temples the models that had long since been made popular.

On the other hand, one personage at least is a transformation of an Asiatic archetype; this is the leontocephalic, or lion-headed, Kronos (see Fig. 3). Like the majority of his compeers, this animal-headed monster is a creation of the Oriental imagination. His genealogy would doubtless carry us back to the period of Assyrian sculpture. But the artists of the Occident, having to represent a deity entirely strange to the Greek Pantheon, and being un-



Fig. 4. MITHEA BORN FROM THE ROCK.
Bas-Relief found in the Crypt of St. Clements at Rome.

trammelled by the traditions of any school, gave free rein to their fancy. The various transformations to which they subjected his figure were in part influenced by religious considerations, which tended to complicate the symbolism of this deified abstraction and to multiply more and more his attributes, and in part by an æsthetic solicitude to soften as much as possible the monstrous character of this barbaric personage, and thus gradually to humanise it. Ultimately they suppressed the lion's head, and contented themselves with representing this animal by its feet only, or with placing the head of the beast on the figure's breast.

The leontocephalic god of Eternity is the most original creation of Mithraic art, and if it is totally destitute of the charm of

grace, its unwonted aspect and the suggestive accumulation of its attributes awakened curiosity and provoked reflection. With the exception of this god of Time, we can establish the Oriental origin of certain emblems only, like the Phrygian bonnet topping a staff, or the sphere surmounted by an eagle representing the Heavens. As the Mithra immolating the bull, so also the other scenes in which this hero appears as actor, are unquestionably in greater part the transpositions of motifs popular in the Hellenistic epoch, although we are unable in every case to rediscover the original which the Roman marble-cutter imitated or the elements which he combined in his composition. As for the rest, the artistic value of these



Fig. 5. Birth of Erichthonios. From a Greek Vase.

adaptations is generally very slight. We have only to compare the lifeless group of Mithra issuing from the rock (Fig. 4) with the animated picture of the birth of Erichthonios as it is portrayed on Greek vases (see for example Fig. 5) to note the superior artistic effect which the ancient Hellenic ceramists could produce from a similar theme. The poverty of the innovations which the Mithraic iconography introduced contrasts painfully with the importance of the religious movement that provoked them. We have, in this, additional corroboration of the fact that in the epoch in which the Persian Mysteries spread throughout the empire, the ancient sculpture was doomed beyond recall. Whereas, during

the Hellenistic period, sculptors were still able to conceive new forms felicitously adapted to the character of the Egyptian divinities, under the empire, on the other hand, the majority of the Mazdean gods, despite their very peculiar nature, were compelled, whether or no, to take the form and the garb of the denizens of Olympus. And if for some of these strange subjects new types were actually invented, they were in every instance distressingly commonplace. The superabundant wealth inherited from the ancient generations had enervated the generative potencies of art, and, accustomed to draw from these rich stores, art had grown incapable of all individual productivity.

But we should be wrong in exacting from the adepts of Mithraism something which they never made the pretence of offering. The religion which they preached was not a cult of beauty, and love of plastic form would doubtless have appeared to them a vain. if not a condemnable, taste. Religious emotion alone was of consequence in their eyes, and to awaken it they addressed themselves mainly to the reason. In spite of the many appropriations which it made from the treasury of types created by Greek sculptors, Mithraic art rested at heart Asiatic, like the Mysteries of which it was the expression. Its predominating idea was not to provoke an æsthetic impression; it aimed not to fascinate, but to tell its mission and to instruct.—faithful in this also to the traditions of the ancient Orient. The jumbled mass of personages and groups which are presented on some of the bas-reliefs, the host of attributes with which it surcharged the eternal Kronos, 1 shows us that a new ideal was born with the new religion. These uncouth and unappealing symbols, the manifold use of which our monuments exhibit, did not allure by their elegance or nobility; they fascinated the mind by the disquieting attractions of the Unknown, and provoked in souls reverential fear for an august mystery.

Thus is explained why this art, extremely refined despite its imperfections, exercised a durable influence. It was united to Christian art by an affinity of nature, and the symbolism which it had popularised in the Occident did not perish with it. Even the allegorical figures of the cosmic cycle which the devotees of the Persian god had reproduced in great profusion (for all nature was for them divine throughout) were adopted by Christianity, although in essence they were diametrically opposed to its spirit. So with the images of the Heavens, the Earth, and the Ocean, of the Sun, the Moon, and the Planets, and of the signs of the zodiac, of the

²Cp. The Open Court for October, 1902, p. 605, and for September, 1902, p. 523.

Winds, the Seasons, and the Elements, so frequent on the Christian sarcophagi, the mosaics, and miniatures.

The mediocre compositions which the artists had conceived to represent the episodes of the legend of Mithra appeared also worthy of imitation to the Christian ages, which were even more powerless than their predecessors to shake off the traditions of the workshops. When, after the triumph of the Church, Christian sculptors were confronted with subjects hitherto unattempted, and found themselves under the embarrassing obligation of depicting on stone the personages and stories of the Bible, they were happy in the opportunity of being able to draw inspiration from the portravals which the Persian Mysteries had popularised. A few alterations in costume and attitude transformed a pagan scene into a Christian picture. Mithra discharging his arrows against the rock became Moses causing the waters of the mountain of Horeb to gush forth; the Sun, raising his ally out of the Ocean, served to express the ascension of Elijah in the chariot of fire; and to the time of the Middle Ages the type of the tauroctonous god was perpetuated in the images of Samson rending the lion.