## IMAGE EVALUATION TEST TARGET (MT-3)



Photographic Sciences

# CIHM Microfiche Series (Monographs) 

ICMH
Collection de microfiches (monographies)

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

Coloured covers/
Couverture de couleur

Covers damaged/
Couverture endommagée

Covers restored and/or laminated/
Couverture rustaurée et/ol pelliculíe

Cover title missing/
Le titre de couverture manque

Coloured maps/
Cat tes géographiques an couleur

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Bound with other material/
Relié avec d'autres documents

Tight binding may cause shadows or distortion alc 7 g interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
II se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.
$\square$ Coloured pages/
Pages de couleurPages damages//
Pages endommagées
Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
Pages detached/
Pages détachées

Showthrough/
Transparence
Quality of print varies/
Qualité inégale de l'impression
$\square$ Continuous pagination/
Pagination continue
$\square$ Includes index(es)/
Comprend un (des) index
Title on header taken from:/
Le titre de l'en-téte provient:
Title page of issue/
Page de titre de la livraison
Caption of issue/
Titre de départ de la liuraison
$\square$ Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Coınmentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.


The copy filmed here has been reproduced thanks to the generosity of:

National Library of Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol $\rightarrow$ (meaning "CONTINUED'") or the symbol $\nabla$ (meaning "END"). whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hend corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:

L'exemplaire filmé fut reproduit grâce à la générosité de:

Bibliothèque nationale du Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la derniere page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustretion et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole $\rightarrow$ signifie "A SUIVRE", le symbole $\boldsymbol{\nabla}$ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angla supérieur gauche, de gauche à droite. et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

IV.-Aerolites and Religion.

By Artiur Manyey.
(Read May 18, 1895.)

Trans. R. S. C.


Few natural phenomena are more terrifying than the fall of an aterolite. $\Lambda$ ball of tire, often said to be "as big as the moon," suddenly appears, moving with marvellons swiftness. A noise, as of cannon, followed by the rattle of musketry, stuns the cars. Perhaps a cloud is forned, emitting a shower of stones. Sometimes there is a second loud report, a continuous rumbling that lasts for minutes, a hissing sound, and thousands of missiles bombard an area several miles across. Or there may be a whizz from a body enveloped in smoke, leaving a trail of fire. The fireball may emit jets of flame and disappear with a noise as of distant thunder, or it may actually fall in the sight of the observer. It maly rush at the rate of twenty miles a second over a thousand miles of earth and sea, at a height of a hundred [miles or so, dropping a fragment here and another there, or it may come vertically down. If it buries itself in the soil, it may penetrate several feet. If it falls in the ocean, it is, of course, for ever lost. But it may strike a roek with but a scanty covering. or ice or snow, or hard packed sand, or trees and even buildings. Then it is usually found to be hot, and of a shape, colour and material utterly unlike the stones of earth.

It would be surprising if in the earlier ages of the world men had not scen in the meteorite not merely a message from the gods but a messenger, a very god himself. All natural religion begins with fear, though it may end with love, and in the study of the bistory of veligions it may be that the sun and his powers have received too exclusive attention. Zeus hats ceitainly been ethnically: etymologically, astronomically supreme; yet the thunderstorm, with its attendant terrors, or the rarer and still more dreadful meteorite, must have received the earliest notice of primitive man, whether on the prairies of America, the steppes of Russia, the $d r y$ littoral of the Mediterranean, or the sandy plains of Arabia. There are, indeed, many traces of a very carly and very widely spread cult of the acrolite, especially among the races of nomadic habits, and to sume of these this paper is intended to refer.

In the Greek fable, Chronos used to devour his children (Tempus edex: rerum), but, one day, they saved Zeus by giving his father a stone to crunch, instead. The stone itself, Pausinian says, was shown at Delphi, near the tomb of Neoptolemos, in the precincts stered to Apollo. This was probably an acrolite. The inage of Diana at Ephesus referred toby

Euripides and in the Acts is described as a bust, with many breasts, tapering to a pedestal, the whole of black stone. It fell from heaven, and part of it may hatve been an aerolite, or it may have been made to replace the original acrolithic deity. The club of Ifercules, worshipped in Thruee, was probably a Thor's hammer, the Thracians being of Northern kin, and an aerolite. Like the images or symbols of Apollo, the guarlian of the ways, and of the laphian Venus, it was said to have fallen from above. These uncertain instances are adduced first becanse the opportunity is afforded thereby to prove that it is not important as a matter of religion to discriminate between a real and an imaginary aerolite. A gentleman still living in Toronto having purchased from a farmer noar Niagara a nodule containing quart\% crystals, read a paper to a learned society, in which he explained its structure as being that of a planetoid, rounded, flatted at the poles, and he argued that the interior of our globe might be aystalline too. There is little doubt that the farmer saw a meteorite fall, and, pieking up this geode, believed it to be the aerolite. Again, one of the secretaries of the Astronomical Society of Toronto, whose family thought they saw a meteorite fall into a snow-hank, delved into the drift and brought up a water-worn peble of gneiss, which a less experiencel person might have sworn to be an aerolite. So with the objects of the ancients' vencration, it conkd make little difference whether they were really meteorites or not, provided they were believed to have fallen from the skies.

To ascertain the probable views of the folks of the airly ages in Europe, we must now see how the matutored races of the present day regard the aterolite.

Professor Garner, the well-known stuclent of the speech of monkeys, who says the negroes of the Guinea Coast do not believe in a beneficent god, but rather in a being who does harm, tells the writer that in one African village he found the chief public treasure was two stones, about the size of hen's eggs. The natives said they had been shot out from the sun and had killed this malevolent being . . . who had, however, revived. They thought the stones had been alive, and because they still made fire when struck together they thought they were not dead yet, but were in a sort of trance. So they built a house for them and guarded them with care.

The Rev. H. S. Tayior gives an instructive account of the fall of a meteor, in the Report of the Government Central Musenm of Madras, 1890. Two aerolites travelling through sjace together, or two pieces torn asunder by explosion, had tallen at Parmallee, Madras, India, February 28 th, 1857 -reaching the earth two miles apart. Persons were standing near each place of fall. "Many," says Mr. Taylor, "worshipped them." And again, "Of the excitement among the natives I need not speak . . Some of them supposed they were gods that had fallen."

The American Indius have fiom time immemoritl regarded aerolites as sacred objects. Many specimens of meteoric iron have heen found near the "altars" in the mounds of Ohio. One is an amulet in tho shaje of a large ring, und another, figured and described by Mr. (i. F. Kinz. in the American Journal of Science, has still in it the point of a eopper ehisel, which broke oft as the ahorigine was trying to split the mass. In the Dicotah winter counts (cide Report of the I'nited States Bureau of Ethnology. 1882-83) there are symbols for the fall of an arolite in $1821 \cdot 22$, and the explanation given of the two separate "counts" is " Large ball of fire with hissing noise," and "a large roaring star fell." The meteorite in Victoria College Musemm, of which Irof. A. F. Coleman has given an analysis in the Transactions of this society, is alluded to ly the Rev. Geo. Mcerem, now ot lort Arthur, in his " ladians in C'innda." For long ages, he tells us, the natives say it lay there. and they attributed to it mysterious powers. he thinks on account of its weight (suecitie gravity 7•854). Though many had tried to lift it. all had failed, and when they heard the white men had taken it away they pat their hands to their mouths and said, "The white man is viry strong." They much regretted its remoral, and their medicine men prophesied that evil would come upon the tribes and the buffalo forsake the comntry. The Rev. J. Macdongall, of Morleyville, whose father hat it removed, tells the writer that the plate where it fell was hamed on its aceombl Pe-wah-bisk Kah-ah-pit or "the iron, where it lay:" Thongh it had heen there from time inmemoriad, the Indians knew it had fallen from heaven. On pasing the plate, or anywhere near it, they wouk go to the spot and leave upen it a piece of tohnteco, a hroken arow-leal, wheme sheh offering, for they wished the spirit which had sent it to protect them, or at least not to interfere with them in their forays. They also thought it had grown, becanse their forefathers could lift it, while they could not.

There was an aerolite at Wichita. Kansas, which in a similar way the tribes there reverenced. We can after this reflect withont surprise on the great aerolite placed on the Aztee prymad of Cholula or those set on other Mexiean teocallis.

Mr. Keary, in his "Outlines of Primitive Belief," speaks of the conical shaped stones and the stumps which were conspicuous in the religions of the Syrians and Phomicians as fetishes, and as perhaps connected with Phallic worship, and thus almost contemptuously dismisses the subject. "Phallic worship" is a good term to conjure by. It serves the mythologist as the glacial "theory has served the geolngist, to explain everything otherwise inexplicable, or as the term "subjective mind" now serves the pisychologist to unravel the knotty questions of mind-reading and secondsight. Sirely the above examples of the ereeds of various simple peoples are enough to show the real state of the belief of prehistorie men in Europe and Asia, as regards these heaven-sent stones.

We cun now proceed to spoak of the devolopment of this cult, which has left so many traces on historical pages that it appeas to have had a considerable rogne, especinlly where the Arabian influence prevailed. That intellectual and warlike race had a wide empire in the time of the shepherd kings of Egypt. Under the Tobhas of the Christian era their sway extended to Clina, while under the successors of Mahomet they ruled from Indial to France. They were, from the carliest times, much given to astronomical studies, the appearance of certain stars being the signal for certain kinds of work. Fach tribe had a tutclary star; and the worship of the meteorite appears to have been common among them. There were several temples in Arabia where such sacred stones were reverenced. One, it Petral, was dedieated to a god who had tho attributes of Mars, an appropriate dedication, for celestial phenomena have always had much intluence on armies. The worship seems, however, to have liecome in time encrusted with idolatry ; images wore placed in the temples, and a new litholatry had replaced the old form when Mahomet appeared upon the scene, destroyed the figures and the temples too, excepting one, at Mecea. This is of especial interest here, because the traveller Burton, in his "Mecca and Medina," says that, after an examination of full ten minutes, he is convinced the celebrated black stone there reverenced, and kissed by every pilgrim, is a meteorite.

This shrine was probably the one referred to by Diodorus ( $200 \mathrm{~B}, \mathrm{c}$.) when he says the Bizomenians possess the most sacred fane in all Arabia, and the strength of inherited religious beliefs and customs is nowhere better shown than in its history. It was several times rebnilt, had gates and palisadings given it that were forged from captured weapons, was adorned with images and dowered with gold. It even endured through Mahomet's iconoclastic times. He did, indeed, remove the great idol that stood above the Kacha, or shrine proper, and the various other images and objects the Arabians had venerated there; but his order that the fuithful should turn in prayer towards Jerusalem was so obnoxious that it had to be rescinded, and the black stone became and remains the central point of the Mohammedan world. The Kaaba is said to have been built by Abraham, at the divine command, and to be modelled on the oratory of Adan. Isaac furnished the material, and the black stone served as a scaffold, heing miraculously raised or lowered to suit Abraham's convenience in building. This stone is fabled to have been as white as milk, but to bave beeome black with the sins of unbelievers. Burton says it is of a reddish-brown colour, with shining points-just what a erypto-siderite after frequent rubbing might well be.

It seems difficult to believe that the kings of tho Amorites, upon whom we are told in Joshua, $\mathbf{x}$. 11, that "the Lord cast down grent stoncs from heaven upon them unto Azekah, and they died," were not the victims of a shower of aerolites, especially when it is added in Judges,
v. 20, that "the sturs in their courses fought against Sisera." Prof: Mec'urdy, of Toronto, is of opinion that stones from heaven moun hail, and says the word "hailstones" in the latter part of the verse is simply "planer term for" "stones from heaven," and the ordinary word for hail us well as for stones is employed, viz., birid.

The cult of aerolites at Rome was of Eastern origin, and we will accompany two of them on their westward travels to that city.

In the year 204 b. c. aerolites fell ottener than usual. The decemvirs therefore consulted the Sybilline looks, and found "that a foreign " enemy landed on ltalian soil could he driven off by bringing the Idaran "mother from Pessinus to Rome." At this time Mannihal's terrible grip was loosening, and the consuls were preparing to earry the war into Africa. Great events were in the air. The crisis of an intense struggle was renched. The men at the helm of state felt the turning of the tide; but wishing to leave nothing nndone that would command snceess, desired to finn religious fervour while levies were leing raiserl. Revivalism (repens religio) and drill were, as in the time of Cromwell, conjoined. The senate had recently made good frionds of the Oracle of Delphi, and had been assured that a crowning victory was in store for them, so the embussy they sent to Attalus of Pluryia, their only Asintic ally, in charge of a squadron of five line-of-battle ships, visited Delphi en route. The priests told the ambassuders that Attalus would grant their requests, and that on obtaining the groddess mother they were to select the best of their citizens to receive her and welcome her to Rome. Attalus accordingly met the envoys with all kindness at Perganne, his capital, took them to Pessinus, und gave them a sacred stone which the residents satid was the mother of the grods. Sending one of their number forward to announce success, they followed at leisure, $\mathbf{Y}$ aritime, more prodigies at home. Two smos were seen. (Parhelia, so colamon here. are rure in Italy.) It grew light at night-time. (Query-An aurora?) A holide like a torch flew from east to west across the sky. Lightning struck several important places, and a great crash, withont apparent cause, was heard in one of Juno's temples. When, finally, another shower of stones oceurred, they had a day of general supplication and nine days of religious exercises and consultations how to receive the ancestral godiless. She was coming-the vessols were at Termenathen at Ostia, the mouth of Tiber. They chose Publius Cornclius Scipio. (Livy will neither tell nor guess at the exact reason why he was thought the worthiest of the Romans.) With him all the matrons of the city streamed out to Ostia. He put out from shore to receive the goddess in the roadstead, and, on returning, he delivered her to the matrons, who received her with enthusiasm, and, passing her along the ladies'-chain from hand to hand, in that strange way they arried her to Rome. There were censers at the gates from which clouds of the smoke of spices

## ROYAL SOCIETY OF CANADA

perfinmed the air. All the people implored the gondess to enter the city as a triend, and to look on the Roman state with a favouring eve. Thus they phad the Idann mother in the temple of Vietory and enriched her with ulmadant gifts. We have no datu eoncerning the shape, size, weight or genemal appearance of this stone, hut we enn inter from the nhove that it was a compuratively small iragment, of perhaps thinty pomads in weight. It is reported, though not be Livy, that an image had bren made in a fumale form and dress, and the stone placed on it for a head or thee. This was probably a true aerolite.

There is no room to doubt the meteoric origin of the great black stone of limesn, Syria, for it is deseribed with scientific precision by Herodian. This was worshipped whth divine honomr by the natives of the locality, while neighbouring kings and satraps sent annual presents of grold and silver and precions stonom to alom the great temple in which it wis housed. At the beginning of the third centurr. A. D., this grodmountain, fil Gabal. Was being sorved by a hamdsome lad of some tomrteen summers. with dances and the music of cymbals, flutes and drums, the young priest being armyed in richly embroidered garments of cloth of gold, when the Roman legionaries were by intrigues it is not now protitalle to recount led to procham him imperator. The stone wats coneshaped, probably like an old-fishioned sugin-loat'. It stood on the round and and tapered to a point. It had upon its surface small hamps
 ( $\mu$ 'darvà $\tau \varepsilon$ if $\chi \rho o \alpha^{\prime}$ ). There were marks upon it thought to indicate the figure of the god. (Query - von Widmanstitten lines?) And it was held in reverence becnuse it had fallen from heaven (ötoretij $\tau \varepsilon$ גutóv Eivaı $\sigma \in \mu v o d o y o \dot{e} \sigma u$ ). As the young enthusiast conld not well get to Rome at onee. he sent a great painting of the stone and himself' in the act of adoration, which was put up by his orders above the statue of Victory in the senate chamber. The year niter ho enterd Rome and built a magniticent temple for this strange gol, whose image, unlike those of Greek and Roman gods, was not made with hands. He had Syrian maidens dance and musicians circle in procession round it. Hecatombs of vietims he saerificed before it, cattle and sheep. Rivulets of the hest and oldest wines mingled with their hood. The chief officers of the army and of the state assisted, in barbaric costume, to elevate above their heads the golden vessels used in the ceremonies, while in a wondering ring stood all that was noblest in the Eternal City. Those who smiled or dared to scoff were mercilessly slain. Every officiating priest of other gods had to preface his litany with the name of Elagabalus. When the stone was brought into the city it was in a chariot adorned profusely with gems and precious metals ; the horses, white, were led-no mortal being allowed to drive-and the emperor himself walked baekward in front of the aerolite, as being wishful to graze uninterruptedly at the divine
－the city世，Thus cheel her c ，weight the athove mumls in nad been ir a bead al black ision by atives of presents n which lis grod－ me tomr－ 1 drums， of＇cloth not now ＇us cone－ 10 round limmps is black indicate dit was ぶeróv 1 get to $f$ in the atue of me and ke those Syrian catombs the liest 10 army e their ndering niled or f other hen the y with 1 being ront of duvine
symbols．In the height of summer，the stone was in like manner carriel to a comintry seat，the ronds being strewn with grold－dnst on its pith． Sown．the emperor who，by the way，maried and divored thee wives in an many yeams thought the gol wond beghetter plased if he were mated，too，so to his fille he hrought the Palhatiun．which hal heen from tho dawn of Roman history conceated from every eye．The fancy did not last long，he thought the Pallatinut too martial and severe in temper，and he sent to（＇urthage for the equally prehistoric Ourmia（Virgo Culdestis），which Dido set up there when she time measured oft its liberties with her fimmons strips of ox－hide．It is not stated how this eseaped when Scipio mazel the city，and，perhath，it was an image，not a stone． With his rouged cheeks and blackened cyes or aye－lashes，with his st range vesture and burfaric orgies，the soldiers soon tired of him，mul when the inside ring hat matters well prepared，an end was put to this farce nud to the life of the acolyte emperor（the priest，perhaps，of a dehased Zoroastrian or Mithaite creed）at or ahout the time of his eighteenth hirthaty．Exit from history the stone be worshipped，with its pittings， crust．markings and other ummistakable characteristics of aceolites．

To eomplete this paper without a reference to the signiticance of the noise which accompanies the meteors would be improper．Like thunder， it was the voice of the gols．In the well known passage in Livy which recounts how stones fell on the Alban mount，in the reign of Tullus Itos－ tilins，in a swirl like al gust of hail（conglobuti），there is an interpretation of the woices of the explosion－＂Neglect not the worship of your local deities．＂Something should be suid，two，of the talismanic properties attributed to weapons made from meteorites，such as the scimetar of Attila，which may have been made from meteoric iron，and the poniard of Jehangir，which cortaning was．

The latest notable instance of a connection between aerolites and， religion is in 1492，when，at Ensisheim，Maximilian tiought a battle after a shower of metcors，and won it．The largest of the acrolites was long preserved in the chur h there，and Maximilian，sulsequently negotiating with the Turks，ruferred to this event as a seal of the divine favour．


