

# The Open 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.  
MARY CARUS.

---

---

VOL. XIV. (NO. 8)                      AUGUST, 1900.                      NO. 531

---

---

## CONTENTS:

<i>Frontispiece. Galileo.</i>	
<i>The Struggle Regarding the Position of the Earth. With Several Portraits of Galileo, and Reproductions of Tito Lessi's Painting of Milton's Visit to Galileo and of a Photograph of Galileo's Tomb in Firenze.</i>	
DR. ERNST KRAUSE (Carus Sterne), Berlin . . . . .	449
<i>The Democratic Christians and the Vatican.</i> PROF. G. M. FIAMINGO, Rome, Italy . . . . .	475
<i>The Evolution of Angels and Demons in Christian Theology.</i> By R. BRUCE BOSWELL, Chingford, Essex, England . . . . .	483
<i>Mind-Reading in the Nursery.</i> With Diagrams. EDITOR . . . . .	502
<i>The Principle of "Like Cures Like" in Greek Legend.</i> With Illustration. EDITOR . . . . .	509
<i>Cui Bono?</i> A Poem. ELLIS THURTELL, London, England. . . . .	509
<i>Book Reviews</i> . . . . .	510
<i>Homo Alalus.</i> A Poem. L. L. RICE, Nashville, Tenn . . . . .	512
<i>Notes</i> . . . . .	512

---

---

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.).



# The Open 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.  
MARY CARUS.

---

---

VOL. XIV. (NO. 8)

AUGUST, 1900.

NO. 531

---

---

## CONTENTS:

*Frontispiece. Galileo.*

<i>The Struggle Regarding the Position of the Earth.</i> With Several Portraits of Galileo, and Reproductions of Tito Lessi's Painting of Milton's Visit to Galileo and of a Photograph of Galileo's Tomb in Firenze. DR. ERNST KRAUSE (Carus Sterne), Berlin . . . . .	449
<i>The Democratic Christians and the Vatican.</i> PROF. G. M. FIAMINGO, Rome, Italy . . . . .	475
<i>The Evolution of Angels and Demons in Christian Theology.</i> By R. BRUCE BOSWELL, Chingford, Essex, England . . . . .	483
<i>Mind-Reading in the Nursery.</i> With Diagrams. EDITOR . . . . .	502
<i>The Principle of "Like Cures Like" in Greek Legend.</i> With Illustration. EDITOR . . . . .	509
<i>Cui Bono?</i> A Poem. ELLIS THURTELL, London, England. . . . .	509
<i>Book Reviews</i> . . . . .	510
<i>Homo Alalus.</i> A Poem. L. L. RICE, Nashville, Tenn . . . . .	512
<i>Notes</i> . . . . .	512

---

---

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.).

# Chinese Philosophy, Fiction, and Religion

---

**CHINESE PHILOSOPHY:** Being an Exposition of the Main Characteristic Features of Chinese Thought. By *Dr. Paul Carus*. Pp., 62. Numerous diagrams and native characters and illustrations. Price, paper, 25 cents (1s. 6d.).

"Valuable and of unquestioned reliability. The delineation of the philosophy that underlies the Chinese civilisation is so ably done in these pages that the reader cannot fail to appreciate the causes which produce Chinese conservatism."—*Toledo Blade*.

**CHINESE FICTION.** By the *Rev. George T. Candlin*. With illustrations from original Chinese works, specimen facsimile reproductions of texts, and translations of representative passages. Giving a clear and vivid résumé of Chinese romantic literature. Pp., 51. Paper, 15 cents (9d.).

"A list of 'fourteen of the most famous Chinese novels' is given. Many long quotations from plays, poems, and stories are given, and the pamphlet is a source of great pleasure. The pictures, too, are charming."—*The Chicago Times Herald*.

**LAO-TZE'S TAO-TE-KING** 老子道德經 Chinese-English. With Introduction, Transliteration, and Notes. By *Dr. Paul Carus*. With a photogravure frontispiece of the traditional picture of Lao-Tze, specially drawn for the work by an eminent Japanese artist. Appropriately bound in yellow and blue, with gilt top. Pp., 345. Price, \$3.00 (15s.).

Contains: (1) A philosophical, biographical, and historical introduction discussing Lao-Tze's system of metaphysics, its evolution, its relation to the philosophy of the world, Lao-Tze's life, and the literary history of his work; (2) Lao-Tze's *Tao-Te-King* in the original Chinese; (3) an English translation; (4) the transliteration of the text, where every Chinese word with its English equivalent is given, with references in each case to a Chinese dictionary; (5) Notes and Comments; (6) Index.

"Extraordinarily interesting. Of great moment."—*The Outlook*.

"A truly remarkable achievement."—*The North-China Herald*.

"While of great importance to the serious student, it is usable and interesting to any one who cares at all for the thought and religions of the Orient."—*The New Unity*.

"Much labor has been put into this book. It will be a great addition to the knowledge which English readers have of one of the greatest of religious books and religious leaders."—*The Church Union*.

"It is a convenient volume through which to make such acquaintance with the Chinese language and Chinese thought as an American scholar must consider desirable in view of the present increased intercourse with the Oriental world."—*Reformed Church Review*.

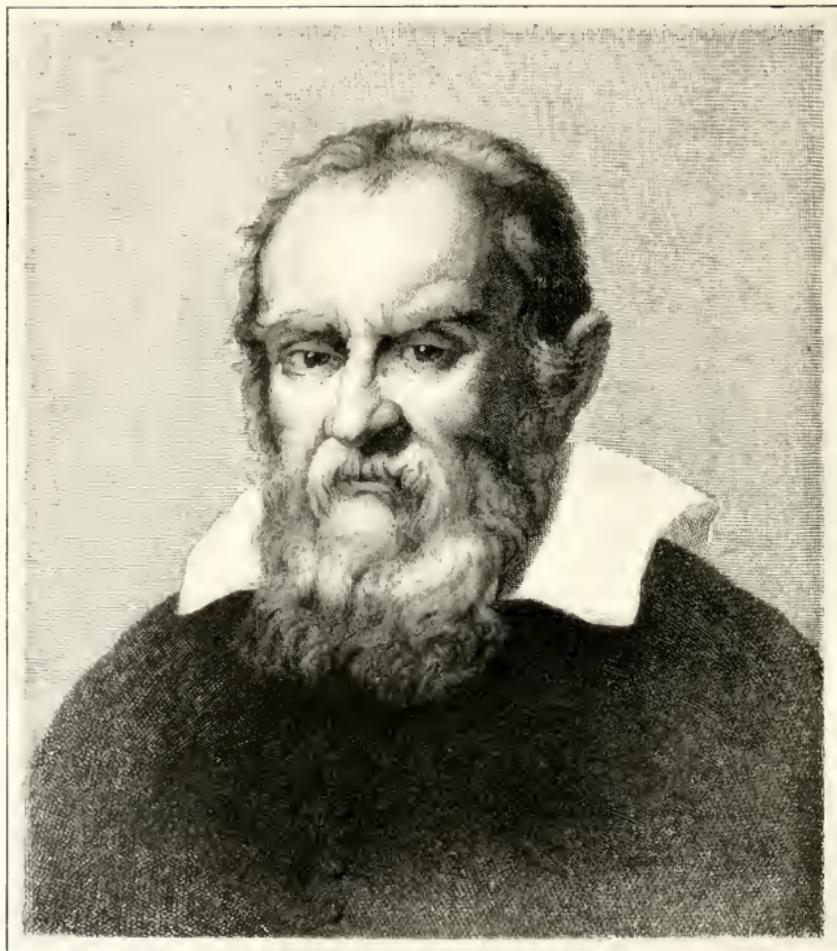
"All that one could do to make the immortal 'Canon on Reason and Virtue' alluring to American readers has certainly been done by the author. The translation is faithful, preserving especially the characteristic terseness and ruggedness of style of the original, the type work is superb, the comments judicious, and the binding a bright yellow with blue and gilt and red trimmings."—*The Cumberland Presbyterian*.

---

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

LONDON: Kegan Paul, Trench Trübner & Co.





GALILEO GALILEI.

(1564-1642.)

From an engraving by Jean Baptiste Vandersypen after a Painting by Fr. Broschi.

Frontispiece to the August *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. XIV. (NO. 8.)

AUGUST, 1900.

NO. 531

---

---

Copyright by The Open Court Publishing Co., 1900.

---

---

## THE STRUGGLE REGARDING THE POSITION OF THE EARTH.<sup>1</sup>

BY CARUS STERNE.

“IT moves, just the same,” Galileo is said to have exclaimed, stamping his foot, after having, before the court of the Holy Inquisition on June 22, 1633, abjured faith in the heretical teaching of the movement of the earth around the sun. But the delightful anecdote belongs, unfortunately, to the great multitude of those which it has latterly become the custom to designate as *esprits d'escalier* (*Treppenwitze*), the after-thoughts of man or of history. Nothing could have been further from the mind of the intimidated scientist than such a defiant recantation, for it would have been neither more nor less than a challenge of the powerful by the weak. If Galileo had felt the slightest inclination to become a martyr to his convictions, like Giordano Bruno, and had he been the stuff of which martyrs are made, he would not have taken that oath. But the anecdote is not without value, for it allows him to voice what he surely at that moment thought and felt in the depths of his soul, and what other adherents of Copernicus, firm in their own faith, may have wished to hear him acknowledge. So it has come about that this unspoken thought, although universally acknowledged to be of later origin, has become a household word. Even now it ceases not to serve as an inspiration when the Church, in spite of such unfortunate experiences, arrogates to herself a decision in questions which do not come under her jurisdiction.

Kant has shown in his work *Religion Within the Bounds of Pure Reason*, that Christianity has been harmed by nothing more than by

<sup>1</sup> Translated from the German by Dr. David Eugene Smith, State Normal School, Brockport, N. Y. The illustrations of the present article are from the collection of Dr. Smith.

the despotism of its official representatives. He points out how the eastern and western Roman Empire, distracted and powerless from raising Christian dogmas to the position of civil laws, became the welcome prey of barbaric nations. Even so do plants and animals, when on the way to dissolution through disease and internal disorder, attract destructive fungi and insects, which hasten their death. In the same way, nothing has more shaken the faith in the correct interpretation of the Bible by the Church, and in the infallibility of the apostolic see, than just this attempt, so wantonly and unnecessarily made, to suppress scientific knowledge that does not even touch the proper teachings of Christianity.

Hence the Roman Catholic Church must even now be grateful to Galileo, that through his compliance and weakness he saved her from applying the torch to his funeral pile. Otherwise she would have been much more seriously afflicted than by the burning of Giordano Bruno (1600). Bruno it is who was condemned not only as an adherent of the Copernican System, which in his *Ash-Wednesday Communion* he defended against the Oxford opponents, and further advocated in a book which appeared the same year, *Concerning the Eternal, the Universe, and the Worlds*, but especially as a free-thinker, who had pursued the regulations of the Church with bitter mockery, and had spoken altogether too frankly of her dogmas. Against the author of *Candle-makers*, who scoffed at the mummery of relics and the hypocrisy of ecclesiastics, who compared Christ to a Centaur, who had attacked with all his strength the foundation-pillar of the Church, the holy Aristotle, she might have been in a necessarily defensive attitude that does not excuse her proceeding, but shows it in a milder light. In Galileo's case, on the contrary, it concerned a scholar, who without making an attack on the teaching of the Church, without deviating in any way from the objects of his physical and astronomical studies, merely wished to lay before the world the results of his investigations. Furthermore the Church, up to that time, had not appeared to consider the teaching of the movement of the earth, in itself, a dangerous heresy, if it was not brought forward, as in Bruno's case, in connexion with scornful attacks on the hierarchy.

The time for this great progress in thought seemed therefore to have arrived; the clamor which had been raised against the courageous ideas of Copernicus and Kepler, might be interpreted as the last impotent cry of rage of the disciples of Aristotle; Galileo therefore decided to follow these august examples, after he had become convinced, through his astronomical observations, of the cor-

rectness of the Copernican view of the world. He was already a man entering the forties when he gave himself up more thoroughly to astronomical research, and had won considerable reputation as a physicist through his studies of the movements of the pendulum, the laws of falling bodies and other physical phenomena. At the same time he recognised the erroneousness of many of the statements and so-called laws of Aristotle, which up to that time had been considered as absolutely correct.

The new star which appeared in 1604 in the sign of Serpentarius, had also drawn his attention to the fact that the proposition of Aristotle as to the immutability of the earth above the moon had no real foundation. Shortly after (1608) he learned that a Dutch optician, Johann Lippershey in Middelburg,<sup>1</sup> had by the combination of several lenses, produced an instrument with which the heavenly bodies could be seen more distinctly. This led him to make for himself a telescope (1609) in order to extend the field of vision, and to gain a deeper insight into the construction of the universe, as well as into the peculiarities of the heavenly bodies, than had thus far been possible to Copernicus, Tycho Brahe, and his friend Kepler. The hoped-for result was attained; he immediately discovered the satellites of Jupiter, described in his *Sidereus Nuncius* (1610), the moon-like phases of Venus and Mercury predicted by Copernicus, and finally the sun-spots (October, 1610) which proved the revolution of the sun on its axis, already taught by Copernicus.

These discoveries were so many confirmations of the Copernican system; the planets were clearly shown to be dark bodies, which, like the moon and earth, received their light from the sun; and the satellites of Jupiter were brought to view as a miniature model of the solar system.

It was not long, however, before the discoveries effected through Galileo's telescope were branded as mere hallucinations and delusions. Then did the master pour forth his troubles to Kepler, his friend to the north of the Alps: "You are the first and almost the only one, who without having seen for himself, gives full credence to my statements. What will you say of the first teachers of Padua, who when I made them the offer, would neither look at the planets or the moon through the telescope, nor even examine the latter? Men of this class regard philosophy as a book like the *Aeneid* or the *Odyssey*, and believe that truth is not to be sought either in the

<sup>1</sup>As to Lippershey's priority, which can no longer be doubted, compare Servus, *Geschichte des Fernrohrs*, Berlin, 1886.

world or in nature, but only in a comparison of texts. How you would have laughed, when at Pisa the first teacher in the university there endeavored, in the presence of the grand duke, to draw the new heavenly bodies from the sky with logical demonstrations, as though with magical conjurations ! ”

In the beginning of 1611 a certain monk issued a work in which he declared the existence of Jupiter's moons to be “ irreconcilable with the Bible. ” This was always the last and most dangerous argument that conservatism fell back on, and Galileo refrained long from entering the lists against this prejudice. Kepler indeed, in answer to the disheartened letter in which Galileo expressed his fears, admonished him to stand by Copernicus, letting these other considerations go. “ Have confidence, Galileo, ” he writes, “ and go forward ! If I see correctly, only a few of the more eminent mathematicians of Europe will forsake us, so great is the power of truth. ” Evidently, however, Galileo showed the truer instinct in the matter, distinguishing between his position and Kepler's ; but on the other hand, it was precisely by the caution with which he proceeded, and by his attempts to harmonise the new theories with the Bible, that he brought himself into the greatest danger.

He went to Rome in 1611, in order to convince the most influential dignitaries, through their own eyes, of the reality of the new celestial discoveries. It must be said, too, that all were not so obstinate in their opposition as Cremonini da Cento in Padua, who absolutely refused to look into the devil's glass, not wishing to see the three moons that Jupiter was said to have in excess of the earth's number. Galileo's success, with which he hoped to silence the clericals, seemed to be complete ; a committee of scholars appointed through the agency of Cardinal Robert Bellarmine had acknowledged the reality of the observations ; Pope Paul V. had given him a long audience, and had assured him of his unalterable favor, and even the members of the Society of Jesus had appeared most friendly. The moment for laying aside his caution and publicly acknowledging Copernicus, as he had up to this time done only in letters to trusted friends, seemed to him to have arrived. The step was taken in a work appearing in 1613 under the title *History and Explanation of Sun-Spots*, in which he unreservedly demonstrated the failure of the Ptolemaic system, as taught up to that time, and showed how, by means of the Copernican system, not only the discouraging calculations of astronomers were simplified, but the results of all direct observations tended to prove the

system true. It seemed at first that in Rome the good opinion that his visit and his personality had created would be maintained.

He was assured, even after the appearance of this work, of continued favor, and the hope was even expressed that his work in support of the Copernican system, whose dedication Pope Paul III. had received "with gratification," would assist in obtaining the victory. Cardinal Maffeo Barberini, afterward Pope Urban VIII. and patron of his enemies, also assured him at this time of his admiration.

The number of these enemies and of those who were jealous of him had meanwhile increased somewhat, especially since his work on sun-spots. Without knowing of Galileo's observations, a Jesuit father, Christoph Scheiner, of the University of Ingolstadt, had on the 21st of March, 1611, nearly half a year later than Galileo, discovered spots on the sun, but had not dared to make this observation public, because it contradicted the Aristotelian doctrine of the sun as the emblem of the greatest purity. "I have read Aristotle's writings repeatedly, from one end to the other," his father superior, Theodor Busäus, had said to him when he confided to him his discovery, "and I can assure you that I have found nothing of that of which you speak. Go, my son, calm yourself, and believe me that that which you take for spots on the sun are only defects in your glass or in your eyes."

But Scheiner, nevertheless, did not calm himself, and reported his repeated observations in three letters of the 12th of November, the 13th and 26th of December, 1611, to the learned senator Markus Welser in Augsburg who had them printed under the title *Apelles post tabulam* in 1612, without the knowledge of the author. Galileo thereupon appealed to the fact that he had already in 1610 pointed out this discovery to several friends, and a dispute over priority arose, which, carried on with the usual bitterness of such affairs, helped to stir up the hatred of the Jesuit Scheiner against Galileo. Moreover, a Friesland astronomer, Johann Fabricius, had discovered the sun-spots shortly after Galileo, though this was not known in Italy at the time, and had described them, together with the inferred revolution of the sun on its axis, in a work which appeared in 1611, so that the dispute over priority between Galileo and Scheiner, which left behind so much bitterness, was pointless, since another had preceded them both in publication.

Besides this, professional envy, which is well known to be as strong in learned circles as in other grades of society, seems to have contributed to increase the feeling against Galileo. He had

on account of his important discoveries in physics, made a brilliant record, as the saying is. He had attained a most desirable position in Florence, at the court of the Grand Duke of Tuscany, who was much interested in his work and had, in 1610, given him a place in his service. This seems to have caused one of his envious colleagues, Professor Boscaglia, who taught physics in the Tuscan University at Pisa, to work against him in influential circles. It shows the man, when we learn how he insinuated his opinions in the mind of the Dowager Grand Duchess. Galileo, he said, was an excellent observer, the correctness of whose telescopic work was probably not to be doubted, but who evidently could not interpret them correctly, since the Bible explicitly represents the earth as immovable, and tells in various places of divine miracles by which the sun had been held fast in one point in the sky, or even turned backward.

In this connexion, naturally the first thing considered was the celebrated episode in the book of Joshua, in which the victory of the Jews over the Amorites is described, and the commander-in-chief of the assembled army speaks: "Sun, stand thou still upon Gibeon; and thou, Moon, in the valley of Ajalon." The account continues: "And the sun stood still, and the moon stayed until the people had avenged themselves upon their enemies. Is not this written in the book of Jasher?" A whole day, that is about twelve hours, the sun is said to have remained at the zenith, and when more recent theologians assume that the Bible when it spoke of standing still was only using the language of the people, according to which, even to day, the sun passes over its course, this is but an idle subterfuge. Such also is the attempt to find in these verses merely a poetic expression of admiration for the deeds achieved in the battle with the Amorites, these deeds being so mighty that one could not believe them to have been accomplished in a single day. The Bible rather gives its account from the point of view of a degree of culture which considered entirely practicable the stopping of the sun and moon by means of prayers and conjurations, because it held these bodies to be mere illuminating spheres of moderate size. That the Biblical writers believed these miracles quite literally and regarded it in nowise as poetic fiction is plainly seen from Sirach 46, 5, where it is said: "The sun stood still at the will of Joshua, and one day became as two." The same is also apparent from the experience of King Hezekiah, as related in several places in the Bible and probably by several authors. His prophet Isaiah announced to him that in order to give him a sign,

the sun would go back over part of the course that it had already made, and the shadows on the sun-dial that his father Ahaz had erected actually moved backward ten degrees.<sup>1</sup> It will be conceded that if these stories had not been in the Bible and had not received such a construction, Galileo's trial would not have taken place, and that it all came down to a question of an ignorant superstition.

But the clergy regarded man's understanding even at that time as weak enough to believe in such miracles. As a proof of this may be cited the fact that only a few years after the appearance of Copernicus's work the Joshua miracle was actually attempted and was said to have been observed in the battle of Mühlberg on the 24th of April, 1547. The Spanish author Luigi of Avila claims in his work on the German War to have been an eye-witness of this battle: "The impending defeat was foretold to Frederick the Generous by an evident miracle. The sun appeared like blood, and as if it had delayed its course and added to the length of the day. When we looked attentively we saw that it was higher than it should have been at that hour. The opinion of all in regard to this matter was so unanimous that I certainly dare not repress it."<sup>2</sup> Florimond von Remond in his *History of Heresy* has cited still other eye-witnesses of this new edition of the Joshua miracle, a wonder immediately celebrated in verse. The Duke of Alba, however, said that he had observed nothing of it, and excused his oversight of such an important circumstance by the fact that in consequence of the resistance of the heretics he had been too busy with events on the earth to concern himself with what was going on in the sky. It would evidently have needed only a slight concession on the part of the commander to make of Charles V. a second Joshua.

But if we return to the martyr to this miracle, it cannot be denied that, in his zeal for the truth and his feeling of the justice of his cause, he was guilty of the imprudence of himself furnishing his watchful antagonists with the weapons by which they were able to reach him. His friend and adherent, the Benedictine father Castelli of Pisa, had in 1613 warned him of the cabals and intrigues formed in consequence of his work on the sun-spots, and that there was a plan to charge him with a crime against religion. Galileo allowed himself to be beguiled by this into entering into the theological side of the question, and he sent his friend a detailed statement of his conception of the interpretation of the Bible.

<sup>1</sup> 2 Kings xx. 8-11; Is. xxxviii. 7-8.

<sup>2</sup> See the article, Charles V., in Bayle,

“The Bible in itself,” he writes as a good Catholic, “can neither lie nor err, but the same is not true of its interpreters who are so much the more exposed to misunderstanding as the Holy Scriptures use figurative expressions in many places, which may be understood differently.” “Since Holy Scripture,” he continues “in many places not merely allows, but actually demands another interpretation than is apparently shown by the tenor of its words, it seems to me that in mathematical discussions the last place should be conceded to it. For both Book and Nature proceed from



the divine word, the former as inspired by the Holy Ghost, the latter as the carrying out of divine command. In Holy Scripture it was necessary, in order that it be adapted to the understanding of the majority, to say much that is apparently different from its exact meaning; Nature, on the contrary, is inexorable and immutable, unconcerned whether her hidden principles and means of operation are comprehensible or not by human understanding, for which she never deviates from her previously sketched laws. Hence it seems to me that no work of Nature, either which experience brings before our eyes, or which necessarily follows as a

consequence of demonstration, should have doubt cast upon it on account of passages of Scripture. For the Bible contains thousands of words of several meanings, and not every sentence in Holy Scripture is subject to so strict a law as every work in Nature."



AFTER A CONTEMPORARY PRINT.

Although Professor Reusch of Bonn thinks<sup>1</sup> that Galileo's attempts to harmonise the differences arising between science and

<sup>1</sup>F. H. Reusch, *Der Prozess Galileis und die Jesuiten*, Bonn, 1879.

the Bible were founded upon the most correct hermeneutic principles, it nevertheless remains an undeniable blunder that in this letter he left the domain of facts and intimated the possibility that even the high clergy might be mistaken in the interpretation of the Bible. Castelli, who seems to have considered his friend's statement as harmless as irrefutable, hastened to allow the letter to become public, and thereby placed a piece of evidence in the hands of Galileo's opponents of which they made use. Soon after, a Dominican monk, Caccini of Florence, in a sermon on a text which seemed made for the occasion, "Ye men of Galilee, why stand ye gazing up into heaven?" thundered against the man who dared attack the infallibility of the orthodox interpretation of the Bible as the result of mere star-gazing. He was joined by Father Lorini, his friend and a member of the same order, who added a denunciation of the erroneous teachings of the Florentine physicist, addressing it to the Holy Office in Rome. It was well received and immediately preliminary and secret proceedings were instituted against the offender.

With that began the ever memorable trial of Galileo. The history of this proceeding having within the last twenty years undergone a revision by some of our most authoritative investigators, it is proper to consider it here somewhat thoroughly. In fact, the Holy See was itself induced, some thirty years ago (1867), to publish the records of this trial, in order to prove that the Church had proceeded at that time with the greatest forbearance against a fickle scholar, one unmindful of his promises, one whose opinions had opposed the general views of the time, and who caused much scandal. An imposing list of books upon Galileo and his trial have appeared since that time, not to speak of innumerable treatises and smaller essays. Mention may be made of only a few of the leading writers: De l'Epinois (1867 and 1878), Henri Martin (1868), Gherardi (1870), Wohlwill (1870 and 1878), Riccardi (1873), Wolynsky (1874 and 1878), Perialisi (1875), Berti (1876 and 1878), Karl von Gebler (1877), Reusch (1879), Campori (1881), Grisar (1882), Favaro (1882 and 1884).<sup>1</sup> These publications go far to show how undiminished is the interest which free investigation even to-day is bringing to this trial.

Galileo, who at the outset knew nothing of these proceedings secretly begun against him, stirred up his adversaries still more by continuing to rely on his just claims in an open letter to the Dow-

<sup>1</sup>A complete list of these publications to within two years of date may be obtained by consulting the *Jahrbuch über die Fortschritte der Mathematik*.—Trans.

ager Grand Duchess. "First take care," he writes, "to refute the arguments of Copernicus and his followers, and leave the concern of condemning them as heretical or erroneous to those to whom it belongs; but do not hope from the discreet as well as intelligent fathers of the Church, and from their absolute wisdom which cannot err, that rash decision to which you, urged on by personal interests and passions, would allow yourself to be hurried. For it is indeed beyond doubt that in regard to these or other similar assertions which are not directly *de fide*, His Holiness the Pope has always the absolute power to pronounce them good or to condemn them, but it is not in the power of any human being to cause them to be true or false or other than they are *de facto* from their nature.' These words, as bold as they were true, were certainly not calculated to make his opponents more indulgent.

On receiving news of the proceedings against him in Rome, Galileo hastened thither without waiting for invitation, hoping to conduct his own case, and relying on the support of his former patrons. He was again received politely enough, as he was able to report to his Florentine friends in the beginning of February, 1616, and he once more succeeded in calming the storm. Indeed, the proceedings dwindled to a mere admonition to cease the Copernican teaching, and to a condemnation of the latter. But on the 24th of February, 1616, the commission convened by the Holy Office unanimously arrived at the following decision: that the declaration that the sun forms the center of the universe and is without local movement in space, is "foolish and absurd from a philosophical standpoint," and is "heretical from a religious standpoint, inasmuch as it contradicts the tenets of Holy Scripture in many places, both according to the plain meaning of the words and according to the universal interpretation of the holy fathers and learned theologians."

On the following day, February 25, the committee appointed Cardinal Robert Bellarmine to warn Galileo to renounce the opinion mentioned. If he refused to obey, the positive command should be communicated to him that he "refrain entirely from teaching, supporting, and discussing such a doctrine and opinion. If he did not keep silence in regard to it, he should then be imprisoned."

Whether the last prohibition was really communicated to Galileo, has been the subject of much discussion in recent times. There undoubtedly exists, and is still to be found among the records, a protocol of February 26, 1616, in which this is asserted. In this the threat is added that otherwise the Holy Office would

take action against him, a record which in the resumption of the proceedings sixteen years later was to serve as a foundation for the accusation that Galileo had broken promises made in solemn form. But in recent times, since the publication of the records of the trial, the value of this piece of evidence has on good grounds been more or less firmly called into question.

In the year 1870 Emil Wohlwill,<sup>1</sup> after the most careful examination of the records, put forward the assertion that this protocol was forged. Almost at the same time, and independently of the German investigator, the Italian Silvestro Gherardi<sup>2</sup> stated the same opinion, basing his argument on the publication of the protocol of the session of the committee of the Office on March 3, 1616, in which Cardinal Bellarmin in the outset reports that "the mathematician Galileo Galilei has been admonished to renounce the opinion, firmly held by him until that time, that the sun is the center of the heavenly bodies, and motionless, while the earth on the contrary moves, and that he had thereupon become quiet." Then follows immediately the note that the work of Nicholas Copernicus, as well as a commentary on the Book of Job by Diego a Stunica, supporting the heliocentric theory, and a work by the Carmelite Paul Anton Foscarini on "the new Pythagorean world-system," should be placed in the Index, which was done through a decree of the 5th of March. As there is not the slightest intimation in this official report of any refusal on the part of Galileo, and of a consequent more severe admonition, Wohlwill and Gherardi, to whom were added later Karl von Gebler,<sup>3</sup> Günther, Hase, Martin, Scartazzini, and others, consider this other protocol to be a forgery, made at a later date with the object of giving the resumption of the trial a legal foundation. It is true that not only Catholic but also certain Evangelical writers, such as Reusch, besides de l'Epinois, Berti, and Wolynsky, have championed the genuineness of the composition. Reusch, however, claims it genuine only in the sense that the questionable protocol was merely a draft which was not intended for use, and which afterwards found a place among the documents of the Inquisition, to be used then *bona* or *mala fide* against Galileo. The latter alternative, however, would really be no better than a direct forgery, the suspicion of which can hardly be dismissed.

After his return from Rome, Galileo lived for a time a retired

<sup>1</sup>*Der Inquisitionsprozess des Galileo Galilei*, Berlin, 1870.

<sup>2</sup>*Il processo Galilei*, Firenze, 1870.

<sup>3</sup>*Galileo Galilei und die römische Kurie*, Stuttgart, 1876.

life at the Villa Bellasguardo in Florence, not caring to accept the invitation of Kepler to come to Germany where he might be free to acknowledge his opinions. He was accustomed at this time to treat the teaching of the movement of the earth as an unlawful hypothesis at best, but his "obedience" was really almost worse than open resistance. He had at that time written a work on the phenomenon of the tide and sent it (1618) to his patron, the Archduke Leopold of Austria, with a note which contained the following words: "Because I am now aware that it is fitting to believe and to obey the decisions of the superiors, they being directed by a higher intelligence to which my mind is too base to soar alone, I regard this work, which I send to you, so far as it rests on the assumption of the two-fold movement of the earth, even though it contains one of the arguments which I brought forward in corroboration of that view, merely as a poem or rather as a dream; as such your Highness may receive it. But even poets at times place a value on one or another of their fancies, so likewise do I place some value on this my dream."

Naturally such utterances always reached the ears of the pious fathers, and roused them to renewed fury. At this time Kepler in Prague, although in the service of his apostolic Majesty, also acknowledged himself as favoring the Copernican theory, and in the same year (1618) in which Galileo's work began to stir up discussions, he made the immortal discovery of the third law governing the movements of the planets. In the same year also occurred the first rising of the Protestants in Prague, which ushered in the Thirty-Years' War. Therefore the Church, at that time under the direction of the Jesuits, believed that it ought to make a ruthless attempt to win back the territory lost through the Reformation, even though the peace and prosperity of the whole of Central Europe should be destroyed thereby. There was felt only too well the close relationship between the new astronomical discoveries and the opposition of the Protestant spirit to the authority of the Church. It is probable that now for the first time was recognised distinctly all that would result from the belief that the earth could no longer, according to the views of Aristotle, be looked upon as the center of the universe, around which everything should turn and all other stars revolve, even as the thoughts and destiny of mankind should circle about the immovable rock of the Church at Rome. When the discovery of America had demonstrated the untenableness of the old opposition to mathematics and the teaching of the antipodes, there was some measure of uncertainty felt as to

what was to be done about the new teachings and discoveries; but now all at once was seen the abyss which was opening in place of the old; sure geocentric foundation for school and Church.

What immeasurable consequences must follow, if the firm ground on which the whole structure rested, were, so to speak, taken away from under it, if the earth were suddenly degraded to the rank of a mere planet, revolving like so many other planets around the sun, and if finally all these planets, which according to Galileo, were only dark worlds, should demand each one its paradise, its work of salvation, and its vicar of God! Indeed why, then, might still other stars not come with similar claims?

The unmistakable need of self-defence was suddenly felt, and attempts were first made to lure Galileo, who now seemed to have got off too easily, from his cautious reserve. To this end the Jesuit father Grassi, under the title *The Astronomical and Philosophical Balances*, launched a polemical work against Galileo, personally attacking him while generally combating the Copernican teaching. Fortunately Galileo seems to have guessed the deeper design of this noose, twisted, with true Jesuitical cleverness, to strangle him or to cause him to break silence. Accordingly he contented himself, in his answer entitled *The Assayer (Il Saggiatore, 1623)*, which is classed among the pearls of Italian literature, with showing his opponent's numerous errors of fact, and the whole weakness of his argument, without allowing himself to be drawn into imprudent expressions. He conceded that all telescopic observations are, to be sure, in entire accord with the Copernican teaching, but as a devout Catholic one must consider the latter as false, since, according to the decision of the professional interpreters, it cannot be brought into accord with the Bible.

The Jesuits, completely mistaken in their expectations, denounced this work, in spite of all this, to the Roman Court of Inquisition. But as Galileo had dedicated it to Cardinal Barberini, who was still well disposed toward him, and who in the meantime had ascended the papal throne as Urban VIII., they accomplished little. Galileo was commended for his obedience to the commands of the Church, and for allowing the testimony of the senses against the teaching of the Church to remain in the background. Encouraged by this, Galileo went himself to Rome the following year (1624), in order if possible to accomplish the setting aside of the prohibition of the Copernican teaching. While in this he was not successful, he was repeatedly received in a friendly manner by the Pope, and the latter, in a letter to the Grand Duke of Tuscany,

even extolled Galileo's fame, which should "shine on earth, as long as Jupiter with his satellites in heaven."

What the provocations of the Jesuits had not been able to do, was brought about by the transient favor of the pope, namely, that Galileo abandoned the caution observed by him up to that time in writings designed for print. He composed a *Dialogue on the Two Most Important Systems of the Universe*, and in it, put the Aristotelian Ptolemaic System so in the shade by the Copernican, that in spite of the author's apparently taking sides with the first, no one could help being convinced of its untenableness, and of the correctness of the latter. In this work two personages appear under the names of deceased scholars and friends of the author, one of whom begs the other to initiate him into the Copernican system, of which there is so much talk now, and this the other does with great force of expression. Meanwhile a listener to the conversation, on whom was bestowed the fatal name of Simplicius, defends the old Aristotelian view of the world with all the insufficient arguments that up to that time had been current.

Of course, the arguments brought forward for Aristotle and Ptolemy proved themselves so weak, and were so promptly refuted, that every one saw merely a defence of an utterly untenable hypothesis. Galileo, it is true, pretended to be on the side of Simplicius and the Church, pointing out how beneficial and necessary had been the prohibition of the latter in regard to so seductive and absolutely irresistible a theory, and how greatly were to be extolled those from whom it had proceeded.

Galileo went again to Rome in the year 1630, in order to lay his work before the Holy Office, and obtain permission to print it. This required tedious negotiations, and the *imprimatur* was granted only through the addition of a singular closing conversation, in which the principal speakers repeat again with emphasis that they have been entirely mistaken, and thank Simplicius for his friendly advances and the communication of his exalted views, as well as for the priceless instruction granted to them. Despite this papal approbation, however, the censor, Nicolo Riccardi, said to Galileo at the outset that the Jesuits would attack his work most relentlessly.

This "Father Monstrous" (*il Padre Mostro*), as he was called on account of his enormous size, was not mistaken. The Jesuits did not doubt that the *Dialogue*, which appeared in print in the beginning of 1632 and was immediately received with approbation, would, by its masterly style and convincing clearness, win over all

educated men and overthrow all their efforts in the education of the young, if it succeeded in penetrating into wider circles. Hence it was necessary to act without delay, and, as always when the end justifies the means, there was found immediately the right means to change to bitter hatred the favor bestowed upon Galileo by the Pope. This was done by spreading abroad the rumor that this insolent creature had dared to introduce him, the Holy Father himself, under the quite too transparent and shameful pseudonym of Simplicius, and to set him in the pillory before all the world.



GALILEO.

From a picture in the Public Library of Oxford ; engraved by J. Baker.

No sensible person will believe to-day that it could really have been Galileo's design to risk in this frivolous way the favor of the Holy Father so indispensable to him; he had obviously in mind Simplicius of Alexandria (died 549), and preferred the name on account of the secondary meaning of simplicity.

But the question might well be suggested whether the Jesuits, who certainly knew exactly what the new book of their arch-enemy

contained, did not perhaps inspire the easy-going Father Riccardi, whom they could easily hoodwink, with the idea of granting the *imprimatur* only on the condition that Simplicius be treated in the conclusion with the greatest reverence, in order to make so much the more probable the slander that the Pope was meant. It would have been a diabolical plan to ruin their adversary past recovery, but it would do honor to their sagacity, for the slander so cleverly brought forward found, as usual, a favorable ear; the Holy Father might even remember having uttered himself occasionally in his



THE VISIT OF MILTON TO GALILEO AT ARCETRI NEAR FLORENCE IN 1638.

Engraved by Ch. Baude from the picture by Tito Lessi, exhibited in the Salon of the Champs Élysées.

repeated conversations with Galileo general objections similar to those Simplicius offers against the Copernican theory. The result was that the Pope, from a warm admirer of Galileo, became a secret enemy, and gave the Jesuits entire liberty of action in the matter. The Catholic authors, it is true, consider it inconceivable that Urban VIII. should have listened to so clumsy a slander, and even Reusch believes that he may infer from some of his utterances that he gave no weight to the talk of his courtiers, but in my opinion these champions of the Jesuits deceive themselves when

they consider the insinuation entirely too clumsy, and forget to give another explanation of the Pope's sudden change of mind.

As early as August, 1632, there was issued in Rome a mandate prohibiting the further circulation of the book published in Florence, on the pretext that the permission to print was obtained in an underhand manner, and that Father Riccardi had been cheated. The Grand Duke of Tuscany, who was very kindly disposed to his court mathematician, but unfortunately was not very energetic, inquired through his ambassador Niccolini in Rome how it came about that a work approved a few weeks before by the Holy See was now forbidden. His answer from Father Riccardi was to the effect that there had been found in the archives of the Holy Office a protocol in which Galileo had sworn sixteen years before to Cardinal Bellarmin "neither to teach, to defend, nor even to discuss" the doctrine in question. This prohibition he had not only transgressed, but had concealed it from the censors, and obtained by artifice the permission to print.

What is to be thought of this pretended protocol has already been said above (p. 459). Even the most cautious critics, who, like Reusch, will not directly assert it to be a forgery, do not believe that it could have been read before Galileo at that time, as no mention of it occurs in the officially executed protocol. The celebrated Cardinal Robert Bellarmin, who is said to have addressed this admonition to Galileo, whose own works were placed in the Index, and to whom is attributed the witty saying, "Among the cardinals there are so few holy ones because they all wish to become the holiest of all" (that is to say, Pope), had been dead for more than ten years, and could no longer be consulted. Proceedings were begun against Riccardi, probably only to satisfy appearances, on the ground of inconsiderate granting of permission to print. But whether because they could find no ground for conviction, or because of his knowledge of the protocol affair, he came out so completely vindicated that he held the office of chief book-censor for the rest of his life.

Galileo's trial before the Inquisition was thereupon begun in great haste. On the 15th of September, 1632, the Tuscan ambassador was informed that the matter would be brought before the court of the Inquisition. A week later notice was issued to the inquisitor of Florence, that Galileo had been found guilty in the preliminary proceedings brought against him of transgressing a prohibition received by him sixteen years before, and that he was to come to Rome as speedily as possible in order to defend himself

before the Holy Office. Galileo was not for a moment in doubt that he was now delivered over to the mercy of the Jesuits, and that in spite of all his intercession he must expect the worst. This is plainly seen from a letter which he wrote in January, 1633, shortly before his departure for Rome, to the Paris lawyer Elias Diodati, stating so clearly the conception of his position that a large portion of his letter may be given here.

“If I ask the theologian,” writes Galileo, “whose work is the sun, the moon, and the earth, their position and their movement, I think he will answer ; these are the work of God. If I thereupon ask him further : On what inspiration does Holy Scripture rest ? he will answer me : on the inspiration of the Holy Ghost, that is, of God Himself. It follows that the universe is the *work*, Holy Scripture the *word*, of God. If I now ask him further : Does the Holy Ghost ever use words that seem to conflict with the truth, because they are adapted to the uneducated mind and the ordinary intelligence of the common people ? he will certainly answer me in agreement with the fathers of the Church, that one does indeed find this in Holy Scripture ; that this is its peculiar manner of expression, and that in more than a hundred places the mere literal meaning would show, not heresies, but blasphemies, since in them God himself is represented as capable of anger, repentance, forgetfulness, indolence, etc. If I ask him whether God, in order to make his work comprehensible to the uneducated and unintelligent multitude, has ever altered his creation ; whether nature, which is God’s servant, but appears disobedient to man and can never be changed by all his efforts, has not always taken the same course, and does not still take it, I am convinced he will answer me that the moon has always been a sphere, although the people for a long time considered it a bright disk ; in short, he will admit that nature has never changed anything to please us, has never fashioned her works differently in accordance with the wishes, the opinions, the credulity of men. If this is so, on what ground should we, while we wish to learn to know the world and its constituent parts, give the preference to God’s word over God’s work ? Is the work less complete, less noble than the word ? Supposing that the assumption that the earth moves were pronounced heretical, and that later observations, reflexion, the very body of the facts themselves, showed the movement of the earth to be irrefutably proven, would not the authority of the Church be greatly injured under those circumstances ? On the contrary, if one assign only the second place to the word, as often as the work seems to oppose it,

one will do no harm to Holy Scripture. A number of years ago, when the great storm rose against Copernicus, I wrote quite a detailed memoir dedicated to Christina of Lorraine, in which, supported by the authority of most of the fathers of the Church, I tried to prove that it is a fatal misuse to call upon the authority of Holy Scripture so often in those questions of science that can be decided by observation. I asked that in future they forbear to use such weapons in discussions of this kind. As soon as I am less troubled I will send you a copy of this memoir. I say less troubled, because I am about to go to Rome, whither the Holy Office has summoned me, having also forbidden the circulation of my *Dialogues*. I hear from a reliable source, that the Jesuit fathers have inspired those in authority with the conviction that this book of mine is more abominable and more harmful to the Church than the writings of Luther and Calvin. . . .”

On the 20th of January, 1633, the old man, seventy years of age at that time, set out on the journey to Rome, but with fewer hopes and with less confidence than he had on his journey a few years before. He reached his destination on the 13th of February, and immediately took up his abode in the palace of the Tuscan ambassador, Niccolini, who naturally prepared for him the kindest reception. Concern for his future, and the journey, in those days so tiresome, had so weakened him that the ambassador feared for his life. On the 12th of April he appeared for the first time before his judges and affirmed that he had never received a prohibition such as that contained in the protocol mentioned. And such is the result of all recent historical criticism, that we dare no longer look in this statement for any conscious untruth, or for evidence of the forgetfulness of an old man. We are forced to believe his assertion that such a prohibition was wholly unknown to him, rather than his further statement that since the admonition received by him, he had no longer considered the Copernican theory as proven and worthy of belief. It is the same with his statement that he did not suppose himself in his *Dialogues* to have defended the Copernican system. The apologists of the Roman proceedings, such as the Barbarini librarian Sante Pieralisi,<sup>1</sup> have naturally not hesitated to conclude from this statement, contrary to all the truth, and from the final complete *Sacrificio dell' intelletto* at the abjuration, that they were dealing not only with a weak broken-down old man, but with an unprincipled, deceitful, obstinate, refractory, and querulous one, against whom the Church had not been able to de-

<sup>1</sup> *Urbano VIII. e Galileo Galilei*, Roma, 1875.

send herself and secure peace in any other way than by means of these successful proceedings,—that in a word Galileo as a man did not deserve the sympathy that perhaps one owed him as a thinker and inquirer. We may possibly deplore this lack of firmness in the aged man, but we have hardly the right to make from it so insulting a reproof as has been done. This reproof rebounds powerless from Galileo and falls with its full weight upon the tormentors who forced him to this conduct. For we must consider that the prospect of torture and the stake never once left the sick old man in the prison of the Inquisition. The burning of Giordano Bruno (1600) and Lucilio Vanini (1619) were still fresh in memory, and Galileo had no desire to be a hero of the faith. He had no longing for the martyr's crown, nor was he a philosopher, whom it might disgrace to give up his convictions; he was simply a naturalist, whose observations were not attacked, but who was only forbidden to give them a precise interpretation.

He remained twenty-three days imprisoned in the palace of the Inquisition, and was brought before his judges four times. On the 16th of June, 1633, a decree was issued by the Holy Office, which arranged the criminal proceedings and threatened Galileo with the rack in case he would not confess the whole truth. On the 21st of June the last trial examination took place, of which it is said in the extant verdict pronounced on the following day: "As it seemed to us, however, that the whole truth was not told by you in regard to your purpose, we considered it necessary to have recourse to the *examen rigorosum* against you, where you answered as a Catholic."

From this official document some recent critics wish to draw the conclusion that the popular idea, that Galileo was tortured in order to extort his recantation, had foundation. It is significant enough that popular sentiment believed the ecclesiastical court capable of this inhuman proceeding towards a feeble old man who had always been found tractable. Nevertheless, it must be admitted that actual torture is just as little proved by the existing protocol as the contrary, for the expression *examen rigorosum* was at that time used as well for an examination in which the instruments of torture actually came into use, as for one in which they were shown and explained only as means of threatening in case the accused would not confess without it. So the *prospect* of torture was not spared him in any case, and this at least mental torture remains a blot which nothing can excuse in regard to a man who was not to be reproached for any serious heresy, but at

the worst only for simple disobedience. That he represented truth and his judges error, is not to be added in the balance.

From the particulars that have been ascertained it may be assumed as tolerably certain that Galileo in clear knowledge of his position and in the conviction that he had no forbearance to hope for, either from the Pope or from the Jesuits, did and conceded all that the Inquisition demanded of him. Professor M. Cantor has further called attention to the fact that the verdict which sentenced Galileo to a solemn abjuration of the Copernican theory, and to a still disputed punishment by imprisonment, seems not to have been unanimously held, for of ten cardinals who are represented at the head of the verdict as judges, only seven signed it. According to this, doubts seem to have sprung up within the ecclesiastical court itself, in regard to the method of procedure and the verdict passed.

The formula of abjuration, which probably followed immediately after the announcement of the sentence, contains, after the acknowledgment of the justice of the sentence passed upon him, the solemn promise wrung from him in face of torture: ". . . with an upright heart and unfeigned sincerity I abjure, execrate, and express my abhorrence of the above-mentioned errors and heresies (namely, that the sun, and not the earth, is the motionless center of the universe), and swear that in future I will never by word or writing assert or maintain anything whatever on account of which I might incur similar suspicion."

That he at the same time added to himself, "It moves just the same," and remained faithful to this belief to the end of his life, may, as has already been mentioned, be safely assumed.

He was released two days later from prison, and assigned as residence, under constant ecclesiastical oversight, the Villa Medici in Rome. Later, when his health was sufficiently restored for him to begin the journey, he was sent to Siena. At the end of the year he was allowed to return to his Villa Arcetri near Florence, while residence in Florence remained forbidden till his death. These measures, which made surveillance of Galileo easy and his seclusion much more strict, and from which the Pope, in spite of all the intercession of influential men, was not to be dissuaded, had the undesired result of giving rise to all kinds of stories; for example, that he had already suffered the pains of torture; and with the blindness resulting several years later the rumor was connected that both his eyes had been put out by the hand of the executioner in the prisons of the Inquisition! Pope Urban continued his hatred

and persecution even after Galileo's death, which occurred on the 8th of January, 1642, and this may be regarded as further proof that he believed the innuendos of the Jesuits. After the penitent sinner had been refused burial by the Church, the erection of a monument, for which arrangements had been made by friends and pupils, was discontinued by the special wish of the Pope, "because it is not fitting to honor by a monument a heretic sentenced by the Holy See to do penance, and who died before the expiration of his sentence."

The Church had won a great victory, for she had forced a weak old man seventy years of age, by all the engines of power at her command, to disown his convictions. There was naturally great rejoicing over it, and in the next fifty years there was poured out over the unbelieving a genuine flood of triumphant refutations of the Copernican system. Certain astronomers, protected and guided by the "star of the wise," found favor before the papal see. They belonged to the most faithful sons of the Church, and Prof. Scipione Chiaromonti of Pisa raged furiously against Copernicus, Tycho Brahe, Kepler, Galileo and all who opposed Aristotle and Ptolemy. He was most loyally aided by the Paris professor of mathematics and astrology Jean Baptiste Morin, who had already in 1631 launched against Copernicus a work on the *Solutio famosi problematis de telluris motu vel quiete*, and afterwards, in 1634 and 1642, had published various polemic treatises against him and Tycho Brahe. He got into a quarrel over them with his old friend, the celebrated philosopher Gassendi, who in a letter had declared himself for Copernicus. Against him he hurled first the polemic treatise *Alae terrae fractae* (1643) in which he believed that he had effectually broken the wings of the earth, and afterward the prophecy, read in the stars, that Gassendi should become fatally ill in the midsummer of 1650. When, however, the earth as well as Gassendi pursued its way unharmed, he drew upon himself from a friend of Gassendi the *Anatomy of a Ridiculous Mouse* (*Anatomia muris ridiculi*, Paris, 1651) to which he replied by his coarse epistle *Of the Three Impostors* (1654).

The Jesuit Riccoli had tried again in his *New Almagest* (1653) to restore and set going Ptolemy's complicated world-machinery with all its spheres and epicycles. But he no longer dared to decide for it absolutely, and wrote to Gassendi: "I know nothing essential to bring against the Copernican system, but I advise you not to express yourself for it openly and too decidedly." In secret he seems to have been an adherent of Copernicus, to whom he de-

licated one of the largest craters on his map of the moon. In his book, however, he brings forward only forty-nine arguments for



TOMB OF GALILEO IN FIRENZE. From a photograph.

and seventy-seven against Copernicus, among them naturally as the weightiest the decision of the court of Inquisition. But it is hardly worth while to examine more closely the last conclusions of

ancient but tenacious Aristotelianism, since through the discoveries of Kepler and Newton the true system of the universe soon became for the intelligent world an absolute fact, far removed from all uncertainty and supposition. The advice of Nikolaus Möller of Kiel, in his work *De indubio solis motu immotaque telluris quiete* (1724) or of Pastor Gottfried Kohlreiff in his *Babylonian's View of Heaven* (1744) to reject in the lump as suggestions of Satan the discoveries of Copernicus, Kepler, Des Cartes, and Newton, found only a very limited public.

The Roman Curia in the year 1835, in a new edition of the Index, struck out the works of Copernicus, Kepler, Galileo, and other earth-movers, after having previously made several exceptions. It thereby acknowledged that it had not earlier been inspired by the Holy Ghost, and that it no longer regards the belief in the central position of the earth as a preliminary condition of salvation. The Church now rejoices over the fact that her high dignitaries, inquisitors, censors, and other oppressors of reason have no successors who need to be ashamed of the deeds of their ancestors, and that Father Secchi actually ventured to make in St. Peter's (1851) the experiment of Foucault with the pendulum, that visibly wrote with its point upon the marble floor the words: "It moves just the same!"

Naturally there rises in spite of all this even in modern times now here, now there, some self-sufficient crank who will not admit the movement of the earth, like Karl Schöpffer with his lectures and pamphlets, *The Earth Stands Fast* (Berlin, 1854), *The Bible Does Not Lie* (Nordhausen, 1854), or Superintendent A. Frank in Sangershausen and Pastor Knak in Berlin who consider it a shame to be inferior in faith to the author of the Book of Joshua. Yet the tale was far less discrediting to the latter, and in general to any one not possessing our means of convincing himself of the vanity and impossibility of the Indian dreams of sun-capture and moon-charm, than it would be to a child of our day who can easily assure himself by a slight mental effort of the inadmissibility and absurdity of such notions. To what ignominy those expose themselves who wish such stories taught as truths to-day in the school, Tyndall has so well explained in one of his lectures that I can do no better than to give his words.<sup>1</sup>

"The concerns of a universe regarded from this point of view were much more commensurate with man and his concerns than those of the universe which science now reveals to us; and hence

<sup>1</sup>*Fragments of Science*, fifth edition, p. 404.

that to suit man's purposes, or that in compliance with his prayers, changes should occur in the order of the universe, was more easy of belief in the ancient world than it can be now. In the very magnitude which it assigns to natural phenomena, science has augmented the distance between them and man, and increased the popular belief in their orderly progression. . . . Let us take as an illustration the miracle by which the victory of Joshua over the Amorites was rendered complete. In this case the sun is reported to have stood still for 'a whole day' upon Gibeon, and the moon in the valley of Ajalon. An Englishman of average education at the present day would naturally demand a greater amount of evidence to prove that this occurrence took place, than would have satisfied an Israelite in the age succeeding that of Joshua. For, to the one, the miracle probably consisted of the stoppage of a fiery ball less than a yard in diameter, while to the other it would be the stoppage of an orb fourteen hundred thousand times the earth in size. And even accepting the interpretation that Joshua dealt with what was apparent merely, but that what really occurred was the suspension of the earth's rotation, I think the right to exercise a greater reserve in accepting the miracle, and to demand stronger evidence in support of it than that which would have satisfied an ancient Israelite, or than that which would now satisfy the archaic editor of the *Dublin Review*, will still be conceded to a man of science.

"There is a scientific as well as a historic imagination; and when, by the exercise of the former, the stoppage of the earth's rotation is clearly realised, the event assumes proportions so vast, in comparison with the result to be obtained by it, that belief reels under the reflexion. The energy here involved is equal to that of six trillions of horses working for the whole of the time employed by Joshua in the destruction of his foes. The amount of power thus expended would be sufficient to supply every individual of an army a thousand times the strength of that of Joshua, with a thousand times the fighting power of each of Joshua's soldiers, not for the few hours necessary to the extinction of a handful of Amorites, but for millions of years. All this wonder is silently passed over by the sacred historian, confessedly because he knew nothing about it. Whether, therefore, we consider the miracle as purely evidential, or as a practical means of vengeance, the same lavish squandering of energy stares us in the face. If evidential, the energy was wasted, because the Israelites knew nothing of its amount; if simply destructive, then the ratio of the quantity lost to that employed, may be inferred from the foregoing figures."

## THE DEMOCRATIC CHRISTIANS AND THE VATICAN.

BY PROF. G. M. FIAMINGO.

THE party known as the Democratic Christians has become very prominent during the last few years. Joseph de Maistre, Chateaubriand, and Lamennais, those pre-eminently Catholic thinkers, were already in the early years of the century precursors or rather prophets of this movement, which for a time has been in abeyance. Pius VII., while as yet Cardinal of Chiaramonti and Bishop of Imola, insistently fostered the correlation that exists between Democracy and Orthodoxy; when he became Pope however he forgot these views. But gradually various members of the Catholic clergy, independently one of the other, felt themselves attracted toward the Democratic Christians, who represent the least Utopian section of the socialistic doctrines promulgated in Europe during the second half of this century. Nevertheless, the Catholic clergy, trained to a blind and passive obedience to the Church, dared not press forward too much upon this road without knowing first precisely how these new ideas would be received in Rome.

Leo XIII. unhesitatingly presented a benevolent attitude toward the chief representatives of these opinions. At an audience to a commission of French workmen in 1889 he pronounced himself in a fairly explicit manner as to the "just vindication of the rights of workingmen," nor did he delay publishing the Encyclical *Rerum Novarum*. Monsignor Ireland, the leader of the new Christian movement in the United States, at a conference held in Paris in 1892 said: "All hail to Leo XIII., the Pope of the century so providentially at the head of the Church in this great historical crisis. It seems as though she had arrived at the supreme hour of her life. The schism between the Church and the century was continually widening. She had been rejected and combated by governments, the people no longer confided in her. Social move-

ments had perfected themselves without her consent; Catholics, alarmed and discouraged, raised isolation to a law, nay, almost a dogma. Then Leo spoke, Leo acted, Leo reigned. The Church is launched upon the world, her presence is again felt everywhere, she enforces respect, she is listened to with an attention that is entirely new."

When Monsignor Ireland spoke thus, he had just returned from Rome. His mode of speaking was bright and cheerful, his eloquence free from clerical airs, he showed himself the apostle of an Idea, satisfied with his own work.

Several years have passed since then during which the leaders of the Democratic Christian movement have had ample opportunity of extending their mode of action. We are now met with this important aspect of the phenomenon; does the influence of the Democratic Christianity correspond to that which Leo XIII. and the Vatican expected?

Leo XIII. is unquestionably a pious and profound Christian, and he had publicly expressed deep sympathy with the working classes when Cardinal at Perugia. But on becoming Pope, aged and saddened also by the outbreaks of revolutionary socialism in Italy in 1878, he assumed an attitude openly hostile to the socialist movement and avoided any mention of the working classes in his Encyclical letters. He had even excommunicated the American "Knights of Labor." Hereupon Cardinal Gibbons set out for Rome with the express purpose of inducing Leo XIII. to revoke this excommunication, and not only did the Cardinal obtain this end, but he also convinced or at least pressed upon Leo XIII. the conviction that the Church could not range herself openly against socialism without thereby losing a considerable number of her adherents, especially those belonging to the laboring classes. Now, as said above, the theories of the Democratic Christians were really in accordance with the social opinions held by Leo XIII. when he was only a Cardinal. He had, however, considered it his duty, or at least necessary, to keep them secret when elected to the See of St. Peter's. If, after his interview with Cardinal Gibbons, the Pope decided to manifest his adherence to the principles of Democratic Christians, first obscurely and then openly in his Encyclical *Rerum Novarum*, it is surely because they were recognised by him as a wise and sure means, suggested by the new social conditions, for the acquisition of fresh members to the Church. In short, the ideas of the Democratic Christians were accepted by Leo XIII. as an expedient for propagating the Catholic faith. Such is, above

all, the view of Cardinal Rampolla, who, besides being Papal Secretary of State, exercised a great moral influence over the Pontiff, one might almost call it a great psychological sway. Hence whilst Leo XIII. proclaims the fundamental theories of Christian Democracy from the Pontifical Throne, Cardinal Rampolla overwhelms with personal attentions, or with polite letters, those prelates who in various lands put themselves at the head of this social movement.

Thus encouraged by the words of Leo XIII. and the action of Cardinal Rampolla, these prelates who have imbibed the principles of Christian Democracy are apt to go to some lengths in their actions, engaging in excessively active propaganda. Not infrequently in order to uphold this propaganda they become drawn into exaggerating and even altering the principles of Christian Democracy as proclaimed by Leo XIII. Thus Giuseppe Torniolo, a Catholic and professor of political economy at the University of Pisa, well known as having assisted Leo XIII. in elaborating the Encyclical *Rerum Novarum*, which some say was written by him and only modified by Leo XIII., this same Giuseppe Torniolo, in a recent Catholic Congress held at Padua, proclaimed that it is iniquitous to pay interest on capital. Now, the most elementary notions of political economy suffice in order to understand that the recognition of such a theory would subvert the whole organisation of private property as at present established. These theories are the more surprising as coming from a person so cultured and self-possessed as Professor Torniolo, but they serve to demonstrate how, having once entered upon a certain train of ideas, even when wishing to circumscribe the consequences, nevertheless little by little more radical and graver conclusions than those adopted at the beginning are finally accepted. This is what has happened to Christian Democracy especially in the United States on account of the initiative taken by Monsignori Keane and Ireland. Christian Democrats leaned more and more toward socialistic theories, and it was owing only to the influence exercised in Rome by the United States that the works of Henry George were not placed upon the "Index" and hence forbidden to be read by Catholics. Thus the works of Henry George are exempt, while publications of infinitely more temperate views figure upon the "Index," amongst others, as an example, the poems of Ada Negri, which, although they were received with much favor and printed in thousands of copies, yet will never bring about a social revolution.

In the United States the Democratic Christian movement has

advanced so far beyond the limits assigned to it by the Encyclical *Rerum Novarum* that the followers of Monsignor Ireland and Keane almost constitute a new Catholicism based upon social foundations differing substantially from those of Roman Catholicism, notwithstanding the Papal Encyclical on the conditions of the laboring classes. No wonder that Monsignor Ireland and Keane are no longer in favor at Rome. Monsignor Keane was compelled by the Vatican to resign the rectorship of the Catholic University at Washington and was summoned to Rome. At Rome he was nominated Counsellor of one of the Congregations of the *Propaganda Fide*. The newspapers hastened to report this fact as though it were of great importance, but the nomination denoted no special honor. The Pope then nominated Monsignor Keane Canon of Santa Maria Maggiore, thus securing to him a permanent but by no means large income. This treatment of Monsignor Keane is very different from that which the leaders of the Democratic Christian movement received when they came to Rome some years ago. The Papal condemnation at last of what has been named "Americanism" is a thing well known by everybody.

If in the United States the socialist character of the Democratic Christian movement becomes more and more accentuated, in Europe it rather takes the form of a political party having a socialist programme. This characteristic European Christian Democracy is more conspicuous in Italy than elsewhere. Take, for example, the last document issued by the "Directing Council of the Work of Congresses and Catholic Committees in Italy" to the presidents of their Provincial Committees on the approaching political elections. In this document, which bears the date of March 3, 1897, it is said that the *non expedit*, which, by a solemn declaration, was approved by the Pope in audience on June 3, 1886, a declaration ratified in the Pontifical Letter of May 15, 1895, *prohibitionem important*, is by no means revoked and must therefore still be enforced.

"Now no more is necessary for Italian Catholics and especially for those belonging to Catholic Societies and Committees in order to know their special duties, and to make these known to others, duties which consist of two points:

1. To abstain entirely from political elections.

2. To dissuade all Italian Catholics from taking part in the same and from transgressing a prohibition which is absolute and general, even in those special cases when it might appear that some advantage would be gained by the success of a deputy of

temperate views over another with opinions openly hostile to Catholics."

This language on the part of the Directing Council of the Work of Catholic Congresses is most explicit. It leaves no loophole for doubt and at the same time makes clearly manifest the object aimed at by this absolute command that all Catholics shall abstain from taking part in Italian political life. It does not, however, attain its object, which is that of paralysing this same political life. Now these Italian Catholics who have formed themselves into societies for the propagation of the new Christian Democratic principles, hold frequent congresses and publish many manifestos concerning the solidarity which binds them in the performance of this social work. Still in reality their secret motive and their true object is essentially political, and under the guise of a purely social movement they continue their campaign for the recovery of the temporal power.

Now in Italy the work of these new Catholic societies is based on a socialistic programme, whether it be that of Christian Democracy or the rural banks now instituted everywhere by the Catholics for the purpose of lending small sums to those peasants who make a public confession of Catholic faith or whatever other form it takes, and this entire social movement though it appears inspired by purely philanthropic aims is on the contrary called in Italy, and rightly, "the clerical reaction." Hence this "clerical reaction" is opposed by all liberal Catholics who assign a purely spiritual function to the Church, and these constitute the great majority of Italian adherents to the Roman Church. Even in Italy, therefore, the new principles of Christian Democracy create a profound divergence among Catholics. Thus the Vatican by encouraging the principles of Christian Democracy runs counter to the views of all such Catholics whose opinions are for the most part ultra-conservative, and who regard Christian Democracy, even when held within certain limits, as a concession made by Catholicism to socialism. Such Catholics fear that, the door having once been opened to compromise, it will be found difficult to stop at the right point. Even in Italy, therefore, the principles of Christian Democracy, in lieu of gaining new followers for the Church, excite a schism among Catholics upon a most serious political question and is the cause of the sense of distrust with which conservative Catholics regard the Vatican that sympathises with those subversive social ideas. The effects of the opinions held by the Italian Christian Democrats on Italian Catholics reveal themselves in a series of facts, more or

less evident and explicit, which cannot be ignored by the Vatican. Thus when some months ago the Abbé Rinaldo Anelli, a priest who had sacrificed all his energy and patrimony to the improvement of the conditions of the working classes, committed suicide at Milan, those newspapers which reflect the Vatican atmosphere commented most unfavorably upon the sad event, blaming Abbé Anelli for having "dedicated himself more to the material well-being of the people than was justified by his priestly profession." This means that the organs of the Vatican, instead of praising and urging on the work of the Christian Democrats, as formerly, now deplore their activity which they pronounce as excessive!

In Austria, in Belgium, and especially in France, where the principles of Christian Democracy were more quickly and more widely diffused than elsewhere, these principles have nevertheless by no means brought about those results which Leo XIII. hoped to obtain when he pronounced the Encyclical *Rerum Novarum* and encouraged the work of those who accepted those principles and were ready to support and defend them. But if it cannot be said that Leo XIII. has been disillusioned on this subject, because the principles set forward by him in the Encyclical *Rerum Novarum* concerning the condition of workingmen were really his true convictions which he had long professed and publicly manifested during the Lent of 1877 in a pastoral letter, when Cardinal Bishop of Perugia, there must have been a disillusion in that section of the Vatican environment which induced Leo XIII. to favor those principles of Christian Democracy from which they hoped to obtain for the Roman Church and for Catholicism such far different results from those eventually produced. Instead, the new principles announced by Leo XIII. provoked the diffidence of those Catholics whose social sentiments were of a pronounced conservative type, and the more so because at the beginning those principles were put forth under the name of "Catholic Socialism." That word socialism made an impression upon the Catholic majority. Almost immediately all the great Catholic authors and orators repudiated this denomination, among them Charles Perin, Cardinal Langénieux, Monsignor de Cabrières, le Père de Boylesve, Professor Toniolo, but although the name of "Catholic Socialism" was changed to that of "Christian Democracy," yet the distrust and suspicion felt was not dispelled. Catholics and especially those of the middle class are profoundly conservative in their social ideas, and in trying to steer between the socialist dangers hidden in the Vatican programme that made concession to the laboring class, and

assume an entirely passive and inactive attitude toward the social question, they find themselves by reason of their innate tendencies impelled toward the latter alternative. On this account two Catholic schools of thought are now found in every Catholic country, that of the conservative Catholics, to which almost all bishops belong; and a minority that upholds the Christian Democracy encouraged by the attitude first assumed by the Vatican toward social questions.

Dissensions and differences caused by the disparity of opinions between these two schools are not infrequent. All over the world Democratic Catholics are acting with greater boldness and decision, as for the matter of that do all young factions which have faith in their future and are emboldened by their first successes. Consequently it happens that not infrequently they rebel against episcopal mandates. Desirous to act on their own account, they refuse to acknowledge any other ecclesiastical hierarchy, save the supreme authority of the Vatican, which had deputed them to propagate the principles of Christian Democracy.

A few months ago matters came to such a pass that Monsignor Couvillé, Archbishop of Lyons, was obliged publicly to censure an assembly held by the French Democratic Christians in this episcopal town. Monsignor Couvillé has since visited Rome and was received by the Pope, to whom he pointed out the gravity of the dangers caused by the dissensions now troubling French Catholics by reason of the view held by the Democratic Christians. Monsignor Couvillé's conduct was lauded, and he was ultimately rewarded with a Cardinal's hat.

A painful impression was made lately in Vatican circles by the victory the Conservatives gained over the radical Catholics in the Swiss Canton of Ticino. A fierce struggle has long waged between these Catholics and the Christian Democrats who have also manifested a desire after autonomy and an intolerance toward their ecclesiastical superiors, which can only be compared to that demonstrated by the monks of the first eras of Christianity.

In 1894 Leo XIII. issued a paternal invitation to the Christian denominations, exhorting them to return to the bosom of the Church. In so doing he abandoned for a moment the traditional exclusiveness of the Roman Church, giving instead full expression to his own merciful and conciliatory spirit. But in the latest Encyclical on this theme that constitutes, as Leo XIII. himself says, "a not inconsiderable part of his thoughts and anxieties," the Vatican's hatred of change, the ideas of ecclesiastical hierarchy,

of the supremacy and absolute superiority of the Church of Rome, have regained the upper hand. This means that since a few years that section of the clerical party which is most strictly conservative and exclusive is once more dominant in the Vatican and exercises a complete influence over the Pontiff. Democratic Catholics, by reason of the problems and questions which their doings excite amongst their co-religionists, may expect an early public manifesto from Leo XIII. This is just now being foretold by undoubted signs. In the spirit and substance of this coming manifesto the mild and compassionate character of Leo XIII. will not appear. It will be superseded by Vatican opinions, wherefore the new words of the Pope will solemnly refute the programme of the Christian Democrats put forth in the Encyclical letter *De Conditione Opificum* just as the tendency now dominant in the Vatican denies the principles of unity among the Churches, proclaimed by Leo XIII. in 1894 and upon which such extravagant hopes had been based for the future of Catholicism and of Democratic Christianity.

## THE EVOLUTION OF ANGELS AND DEMONS IN CHRISTIAN THEOLOGY.

BY R. BRUCE BOSWELL.

THE Hebrew word for angel (*malakh*)<sup>1</sup> is not a specialised term for a celestial messenger or a divine agent. It may be, and actually is, employed as applicable to human beings as well. The very same ambiguity occurs in the use of the equivalent Greek term (*ἄγγελος*) from which our own word "angel" is derived.<sup>2</sup> Of a nature superior to that of man, "the heavenly host," when manifesting themselves on earth, are usually represented, both in the Old and New Testaments, as of manlike aspect, though revealing it may be some features of superhuman majesty.<sup>3</sup> If Cherubs and Seraphs are to be regarded as angels, then an animal or even monstrous form may be attributed to them when seen in prophetic vision or as constituting part of the furniture of the sanctuary; but, as a matter of fact, these ambiguous beings never take any part in angelic ministry among men, but remain either in close attendance upon the Divine Presence, or as guardians of forbidden precincts. The fallen angels of Christian theology, the declared antagonists of God, are unknown as such to the earlier Scriptures. A disastrous union between "the sons of the Elohim" and "the daughters of men" is somewhat abruptly mentioned<sup>4</sup> in an early

1 "Malachi" means "my angel"; see Malachi iii. 1.

2 Instances of doubtful interpretation occur in Judges ii. 1 and Rev. i. 20.

3 "A man of God came unto me, and his countenance was like the countenance of the angel of God, very terrible" (Judges xiii. 6, R. V.). This terrible aspect is also emphasised in Matt xxviii. 3-4,—"His appearance was as lightning . . . and for fear of him the watchers did quake and became as dead men." So in Dan. x. 6: "His face as the appearance of lightning and his eyes as lamps of fire." The angels of modern art are evidently very different from their ancient prototypes! For the superhuman wisdom of angels, see 2 Sam. xiv. 19-20; xix. 27. For their strength, see Psalm ciii. 20.

4 "The sons of God came in unto the daughters of men." Their leader in Enoch x. is called Azazel ("the strength of God," a name formed like those of the archangels Michael, Gabriel, Raphael, etc.), and he is there said to have been bound by Raphael and cast into a chasm in the desert of Dudael. To him it was that the scape-goat was devoted on the day of Atonement (Levit.

chapter of Genesis (vi. 1-4), belonging to what is apparently the most ancient stratum of the present text, but there is nothing to indicate in the passage itself, as contrasted with later interpretations, that this connexion involved any lapse from innocence, or was visited with divine displeasure. The "evil angels" of Psalm lxxviii. 49 (more correctly translated "angels of evil" in the Revised Version) are the authorised agents of Yahweh's wrath, and Satan himself (another equivocal term, applied sometimes to human beings)<sup>1</sup> is the "Adversary" of man rather than of God.<sup>2</sup>

The idea of intelligent personality attaching to inanimate objects and phenomena has, doubtless, as prime mover, set to work all the complicated machinery of Jewish and Christian angelology and demonology. Evident traces of such "animism" are met with alike in the Old and New Testament. The stars in their courses fight against Sisera (Judges v. 20), or sing together for joy at the creation of the world (Job xxxviii. 7), the winds and the waves, no less than the wasting fever, are subject to rebuke (Matt. viii. 26; Luke iv. 39).

The second stage of animism is reached when the control of natural forces is attributed to invisible beings separate from the phenomena over which they preside. The host of heaven (*Sabaoth*) are not so much the stars themselves as the astral spirits who are responsible for their movements;<sup>3</sup> other angels are the authors of disease and death;<sup>4</sup> while the Cherubim and Seraphim seem to support the thunder-clouds and to coruscate in the lightning as spirits of the storm. The angels of wind and of fire, of whom strange things are told in the legendary lore of the Talmud,<sup>5</sup> are already vaguely outlined in the language of a Psalm which declares that the winds are Yahweh's messengers and his ministers are flames.<sup>6</sup> The Revelation attributed to St. John, like the earlier

xvi.). Iblis according to Mohammedan belief was called Azazel before his fall, which followed upon his refusal to do homage to Adam at God's command.

<sup>1</sup> See 2 Sam. xix. 22 and Matt. xvi. 23 (cf. John vi. 70 where the Greek *Διάβολος* is probably equivalent to the Hebrew word "Satan").

<sup>2</sup> Cf. 1 Chron. xxi. 1 with 2 Sam. xxiv. 1, where what in the earlier book is attributed to Yahweh himself is in the later one assigned to the agency of Satan. In Job i. 12 and ii. 6 Satan receives a direct personal commission from God.

<sup>3</sup> See Ps. cxlviii. 2-3; Isa. xxiv. 21 and xlv. 12; and cf. for different meanings of "the host of heaven," Gen. ii. 1; Ps. xxxiii. 6; Dan. viii. 10; and Luke ii. 13.

<sup>4</sup> Exod. xii. 23; 2 Sam. xxiv. 16; 2 Kings xix. 35, etc.

<sup>5</sup> "The Angels of Wind and of Fire

Chant only one hymn and expire," etc. (Longfellow, *Sandalphon*).

<sup>6</sup> Ps. civ. 4. On the strength of this assertion, a Father of the Church (St. Basil, M. de Spir., S. 16) maintains that the angels, as an actual order of intelligent creatures, are "an airy wind, an immaterial fire"; and this is their elementary constitution according to other high author-

apocalypse of Enoch,<sup>1</sup> is full of such nature-angels, as well as of those belonging to a supernatural order. Thus we read of angels "holding the four winds of the earth" (Rev. vii. 1),<sup>2</sup> of "the angels of the waters" (Rev. xvi. 5; cf. John v. 4), and of "another angel . . . that hath power over fire" (Rev. xiv. 18). An angel stands in the sun (Rev. xix. 17), as if, like Uriel in *Paradise Lost*, he were its appointed guardian; but elsewhere a star is spoken of as itself a conscious being to whom is given a commission which is faithfully discharged (Rev. ix. 1-2). That the heavenly bodies are instinct with life is a doctrine implied, as well as openly expressed, in many parts of the Book of Enoch, the groundwork of which belongs in all probability to the second century B. C. This was also the doctrine of the old Persian religion, was held as more than probable by Greek philosophy, and has been discussed by learned teachers of the Christian faith in a pre-scientific age as at least a tenable theory.<sup>3</sup> It is something more than a mere poetical conceit, which, in the mind of prophet or psalmist, marshals the stars as an army, each unit of which is obedient to the voice of divine command;<sup>4</sup> a "divine judgment on the astral spirits" (T. K. Cheyne) seems to be implied in the language of Isaiah xxiv. 21, and Jude's allusion to "wandering stars for whom the blackness of darkness hath been reserved forever" (Jude 13), is in close connexion with his previous statement that "angels which kept not their own principality, but left their proper habitation, he hath kept in everlasting bonds under darkness unto the judgment of the great day (Jude 6). So in the Book of Enoch astral spirits are punished for disobedience in failing to come forth at their appointed time.<sup>5</sup> Even in modern hymns stars and angels are sometimes coupled together as identical or closely related "powers of heaven,"<sup>6</sup> just as in the Book of Job we read that "the morning

ities, who, as systematic theologians, habitually turn sublime poetry into ridiculous prose. Cf. Heb. i. 7.

<sup>1</sup> See R. H. Charles on Enoch ix. 12, and cf. W. J. Deane on the Book of Jubilees, *Pseudephigrapha*, p. 228.

<sup>2</sup> Cf. Zech. vi. 5: "the four spirits [winds, R. V.] which go forth from standing before the Lord of all the earth."

<sup>3</sup> See Hagenbach's *History of Doctrines* (Clark, 1846), Vol. I., p. 345, quoting from Augustine a passage (*Enchirid. ad Laur.* 58), in which he expresses some uncertainty whether the sun, moon, and all the constellations do or do not belong to the society of those blessed and celestial beings who are called by the general name of angels. Cf. Aristotle, *De Cælo*, Lib. ii., cap. 12, where the heavenly bodies are referred to as living and divine.

<sup>4</sup> Cf. Nehem. ix. 6; Ps. cxlvii. 4; Isa. xl. 26. In the apocryphal Book of Baruch we read (iii. 34): "The stars shined in their watches, and were glad: when he called them, they said, Here we be."

<sup>5</sup> See Enoch xviii. 3-16 and xxi. 3-6 (R. H. Charles).

<sup>6</sup> "At His voice creation  
Sprang at once to sight;

stars sang together, and all the sons of the *Elohim* shouted for joy" (Job xxxviii. 7).

"It is the characteristic of the Oriental, and especially of the Semitic mind," writes Dean Farrar (*The Life of Christ*, Appendix, Excursus vii) "to see in every event, even the most trivial, a direct supernatural interference, wrought by the innumerable unseen ministers—both good and evil—of the Divine Will. The definite form in which the belief clothed itself was, by the admission of the Jews themselves, derived from Babylon." Angels are introduced into the naïve narrative of the early history of the chosen people with considerable frequency, bearing divine commissions of mercy or of judgment, threats or promises; and their intervention becomes even more conspicuous in later Jewish writings like those that go by the titles of Daniel, Tobit, Enoch, and Fourth Ezra (Second Esdras in the English Apocrypha), in which special names are first assigned to them. Direct communications with Yahweh Himself, the form in which primitive tradition seems to have invested such marvellous events, were gradually superseded by intermediate agency; but many traces are still left of the bolder belief.<sup>1</sup>

Growing awe and appreciation of the transcendent nature of the Divine Being rendered such theophanies difficult to accept in a literal sense, and the crudity of the original account was often toned down and brought into accord with maturer ideas. This tendency may be seen at work in many different parts of the Bible. In Exodus (xx. 1, 19, 22) we read that God Himself uttered the Decalogue in an audible voice, but St. Paul writes (Gal. iii. 19) that the Law "was ordained through angels by the hand of a

All the Angel faces,  
All the hosts of light,  
Thrones and Dominations,  
Stars upon their way,  
All the heavenly orders

In their great array." ("At the Name of Jesus," etc.)

So in the ancient hymn known from its opening words as *Te Deum* after the declaration "To Thee all Angels cry aloud" we find mention made in detail of "the Heavens and all the Powers therein, the Cherubim, and the Seraphim." For the origin of this term "Powers of the Heavens" see Matt. xxiv. 29; Mark xiii. 25; and Luke xxi. 25-26., where the sun and moon and stars are found in close association with a phrase used elsewhere of angelic personalities (Eph. i. 2; 1 Pet. iii. 22). Our own words "influence," "dis-aster," "jovial," "saturnine," "mercurial," etc., are relics of belief in good or bad stars or planets.

<sup>1</sup> "They heard the voice of Yahweh Elohim walking in the garden in the cool of the day" (Gen. iii. 8).

"Jacob called the name of the place Peniel: for, said he, I have seen God face to face, and my life is preserved" (Gen. xxxii. 30).

"Yahweh spake unto Moses face to face, as a man speaketh unto his friend" (Exod. xxxiii. 11).

mediator,<sup>1</sup> and the author of the Epistle to the Hebrews (ii. 2) refers to the same code as "the word spoken through angels." The plagues which fell upon the land of Egypt are all attributed to the instrumentality of "angels of evil" in Psalm lxxviii. 49, whereas, except in the case of the death of the first-born, they appear in Exodus (iii. 2, sq.) as due to the immediate action of Yahweh. He too is distinctly implied as the subject of the verb "appeared" in 2 Chron. iii. 1, where reference is made to the vision which David had at the threshing-floor of Ornan; but in 2 Sam. xxiv. 17 and in 1 Chron. xxi. 16 the celestial visitant is described as "the angel of Yahweh." Even in the course of the same narrative traces of editorial revision are sometimes to be detected in the inconsistency of the terms employed. Thus in Exod. iii. "the angel of Yahweh," who appears "in a flame of fire out of the midst of a bush," (verse 2, Cf. Acts vii. 35) afterwards figures as Yahweh himself (verses 4 to 6).<sup>2</sup> So in Hos. xii. 3, 4, Jacob's "power with God" is explained in a sense less derogatory to deity than the oldest form of the legend may have suggested: "Yea, he had power over the angel and prevailed."<sup>3</sup>

In the Hexateuch these marks of composite origin are eminently conspicuous, and it would be tedious to dwell upon them all.<sup>4</sup> A somewhat startling instance of language apparently in direct contradiction rather than modified is found in 1 Chron. xxi. 1 as contrasted with 1 Sam. xxiv. 1, the importance of which has already been pointed out. But Satan, it must be remembered, was not regarded in the early stages of his development as the author of all evil, whose works it is the function of divine power to destroy (1 John iii. 8), and whose kingdom is opposed to that of God (Matt. xii. 26-28), but only as the subordinate agent of His providential dispensations, the executor of His most obnoxious decrees. More and more odium naturally attached itself to such an office in human estimation, until it came to be considered the spontaneous operation of pure malignancy.<sup>5</sup> An Isaiah could declare (xlvi. 7)

<sup>1</sup> Compare Acts vii. where (verse 53) Stephen addresses his Jewish hearers as having "received the Law as it was ordained by angels," and (in verse 38) refers to "the angel which spake to 'Moses' in the mount Sinai." We find much the same statement in Josephus (*Antiq.* xv. 5, 3).

<sup>2</sup>Cf. Judg. vi. 11 and 14; xiii. 13 and 22; Zech. iii. 1, 2.

<sup>3</sup>Cf. Gen. xxxii. 28 and 30 with verse 24.

<sup>4</sup>Cf. Gen. xvi. 10, 11 with verse 13; xviii. 1 with the sequel, and verse 9 with verse 10 (the plural "they" becomes the singular "I"); xviii. 33 and xix. 1 with xviii. 2; xix. 17, 22 with verses 15, 16; xxxi. 11 with verse 13; xlviii. 15 with verse 16; Exod. iii. 2 with verses 4 etc.; xii. 12 with verse 23; xiii. 21 with xiv. 19; xxxiii. 20, 23, with xxxiii. 14, 15; Numb. xxii. 18 with verse 35; Josh. v. 13-15 with vi. 2.

<sup>5</sup>This may have been due in some measure to the influence of Persian dualism; but the step was one which might have been taken spontaneously, in the natural order of evolutionary specu-

and that unreservedly,—“I form the light and create darkness ; I make peace, and create evil ; I am Yahweh that doeth all these things” ; and an Amos could exclaim (iii. 6),—“Shall evil befall a city, and Yahweh hath not done it?” The Deity, in his own person, could at one time be represented without offence as putting a lying spirit into the mouth of the prophets (1 Kings xxii. 23), and even Ezekiel could say of one whose inspiration was fictitious,—“I, Yahweh, have deceived that prophet” (xiv. 9). Yet such a false prophet was still deemed worthy of punishment (cf. 1 Kings xiii. 20 etc.), no less than Pharaoh whose heart Yahweh himself had hardened (Exod. iv. 21).

The Book of Job exhibits an intermediate phase of opinion, where Satan enters Heaven with “the sons of the *Elohim*” and receives permission from the Almighty to afflict the man of Uz in order to test his integrity. In Zech. iii. 1-2 Satan is again the official “Accuser,”<sup>1</sup> bent upon finding matter of blame in the highest and holiest of men ; but here he incurs rebuke<sup>2</sup> for excess of zeal, if for nothing worse. It is only in the New Testament that Satan (or the Devil)<sup>3</sup> assumes a position of direct antagonism to God, “the God of this world” who “hath blinded the minds of the unbelieving” (2 Cor. iv. 4).

“The Angel of Yahweh,” afterwards developed into the *Logos* or word of God,<sup>4</sup> was the bridge between the visible and invisible worlds, the medium of communication between man and God. Some critics have seen in the *Malakh Yahweh* a sort of divine double (see Zech. xii. 8), akin to the *Ka* of Egyptian theology, or even a manifestation of deity in human form, an idea which readily lent itself to identification with the Second Person of the Trinity,

lation on the origin of evil, a problem suggested in the first instance by the experience of physical pain. First the pains themselves might be personified, or referred to supernatural powers malevolent or capricious, before being supposed to have any connexion with sin, or as the penal visitation of God. Sin and suffering are then regarded as alike due to divine agency, direct or indirect (*Quem deus vult perdere prius dementat*). But the moral revolt against such theology leads to the attribution of sin and at least unmerited suffering, to a spirit of evil, more or less at strife with good.

<sup>1</sup> Cf. Psalm cix. 6 and Rev. xii. 10.

<sup>2</sup> Cf. Jude 9.

<sup>3</sup> A Greek word of much the same meaning as the Hebrew “Satan” (and used to translate it in the Septuagint), except that the Counsel for the prosecution in the Court of Heaven is not only an Accuser but possibly a Slanderer as well.

<sup>4</sup> The *Logos* of Philo is the *Memra* of the Chaldee paraphrase or Targum, which word often takes the place of the ineffable name Yahweh when it occurs in the sacred text. In the *Ascension of Isaiah*, a composite Jewish and Christian apocalypse, “the angel of the Holy Spirit” is an expression that meets us more than once (iii. 15 ; ix. 36, 40), in accordance with the attribution by Zechariah of the office of prophetic inspiration to “the Angel of God” (i. 12-17, etc.). So also in the *Pastor of Hermas* (Mand. xi. 9) we read of “the angel of the prophetic spirit.”

at an early stage of Christian belief.<sup>1</sup> "The Angel of Yahweh" first appears in Hebrew history, as told by compilers of a comparatively late date, in connexion with the story of Hagar (Gen. xvi. 7-11 and xxi. 17). The same unique representative of the Divine Being (also called "the Angel of *God*") interposes between Abraham and the sacrifice of his son (Gen. xxii. 11 and 15), speaks to Jacob in a dream (Gen. xxxi. 11), is seen by Moses "in a flame of fire out of the midst of a bush" (Exod. iii. 2), goes before or retires behind the host of Israel, to guide or to guard them (Exod. xiv. 19), stands in the way against Balaam with drawn sword (Numb. xxii. 31), manifests himself to Gideon (Judg. vi. 11-22),<sup>2</sup> to the parents of Samson (Judg. xiii. 3-21) and to David at the threshing-floor of Araunah (2 Sam. xxiv. 16, 17), gives commands to Elijah the Tishbite (2 Kings i. 3 and 15), and smites the camp of the Assyrians (2 Kings xix. 35).<sup>3</sup> The Septuagint translates the Hebrew phrase into Greek sometimes with, and sometimes without, the definite article, but its equivalent in the New Testament is invariably ἄγγελος κυρίου without ὁ, except in reference to a previous mention of the heavenly messenger.<sup>4</sup> The expression is, however, clearly intended to represent the *Malakh Yahweh* of the Old Testament;<sup>5</sup> and those who would identify that matchless Angel with Jesus Christ must, it would be imagined, find themselves in an awkward strait, when confronted with Matt. ii. 13 where "the angel of the Lord" can hardly be the same as "the young child."<sup>6</sup>

The human aspect of Yahweh's special representative is so strongly marked that, as in the case of less august messengers, he is called a man in one place and an angel in another.<sup>7</sup> Even God Himself is sometimes described in terms so crudely anthropomorphic<sup>8</sup> that it need not surprise us to find a mere angel eating and drinking (Gen. xviii. 8), or playing the part of a wrestler (Gen. xxxii. 24 compared with Hosea xii. 4). Such archaisms as those enumerated in the last footnote were not unfrequently toned down in later versions and expositions. Thus the Septuagint translates

<sup>1</sup> See 1 Cor. x. 4; John viii. 56-58; Justin Martyr *Trypho*, lvi-lx.

<sup>2</sup> Judg. ii. 1 is of doubtful meaning. See R. V.

<sup>3</sup> Cf. 1 Chron. xxi. 12 and Psalm xxxiv. 7.

<sup>4</sup> Cf. Luke i. 11, 13, etc.

<sup>5</sup> Cf. Acts xii. 25 with 2 Kings xix. 35 in the Septuagint.

<sup>6</sup> See *Synonyms of the New Testament* by R. B. Girdlestone, p. 70. The Angel of Yahweh and the Divine Being are clearly differentiated in Zech. iii. 12.

<sup>7</sup> See Judg. xiii. Cf. Gen. xviii; xix; Mark xvi. 5; Luke xxiv. 4; Acts i. 10; x. 30.

<sup>8</sup> See Gen. ii. 2, 7, 21; iii. 8, 21; viii. 21; xviii. 21; Exod. iii. 6; xxxiii. 23, etc.; Judg. xiii. 22; Isa. vi. 5.

Exod. xxiv. 10 ("they saw the God of Israel"—*Hebrew*), "they saw the place where the God of Israel stood"; and professional interpreters of the sacred text into the Aramaic vernacular of post-exilic Judaism were warned by high authorities to construe the same passage as "they saw the glory of the God of Israel."

A *plurality* of angels, or divine envoys, would seem not to have been the earliest form in which the idea of mediation between God and man was conceived: "the Angel of Yahweh" came before "angels of God," and even they, at first, are probably to be distinguished from "the sons of God" of whom we read in Genesis and Job,<sup>1</sup> as well as from the cherubim, first mentioned in connexion with Paradise (Gen. iii. 24), and the seraphim of Isaiah's vision (Isa. vi. 2 sq.). When angels were thought of as "a multitude of the heavenly host" (Luke ii. 13), they were regarded as "sons of God" in a somewhat different sense from what the term would have originally signified.<sup>2</sup> "The probability is," writes Prof. A. B. Davidson in Dr. Hastings' *Dictionary of the Bible*, "that the right rendering is not 'sons of God' but 'sons of Elohim'—that is, members of the class of beings called Elohim and Elim, just as 'sons of the prophets' means members of the prophetic order." In Genesis vi. they are evidently intended to be superhuman if not divine, the heroes of a legend that has blossomed luxuriantly, whether in the prosaic details of the Book of Enoch and other apocryphal writings,<sup>3</sup> or in the romantic poetry of modern times.<sup>4</sup>

The cherubs of the garden of Eden seem to have been thought of as formidable monsters, more like the sphinx of Egypt, the griffin of Phœnicia, or the compound bull of Assyria, than "the young-eyed cherubins," with wings attached to bodiless heads, which do duty for that "order of angels" in mediæval and modern art.<sup>5</sup> They were not, however, as already remarked, an order of angels at all, properly speaking. What Prof. T. K. Cheyne writes of the seraphim (Polychrome Bible, Isaiah) is equally true of the

<sup>1</sup> Gen. vi. 2, 4; Job i. 6; xxxviii. 7. Cf. Ps. xxix. 1; lxxxix. 6; Daniel iii. 25.

<sup>2</sup> The word translated "God," *Elohim*, itself, sometimes appears to mean much the same as the "angels" of a later stage of theological development (Ps. viii. 5, and perhaps Exod. xv. 11 and Ps. xcvi. 9), as well as earthly rulers (Exod. xxii. 8; Ps. lxxxii. 1, 6), and the departed spirits of the mighty dead (1 Sam xxviii. 13).

<sup>3</sup> See Enoch, chap. vi. et seq; *Text of the xii. Patriarchs*—Reuben, 5; Apoc. of Baruch lvi. 12 C. Jude 6-7; Tobit vi. 14.

<sup>4</sup> Byron and Moore have both been fascinated by this subject, and written respectively "Heaven and Earth: a Mystery" and "The Loves of the Angels."

<sup>5</sup> Rabbinic theology, it seems, "regarded the cherubim as youthful angels." (R. E. Ryle art. *Cherubim*, ap. Dr. Hastings's *Dictionary of the Bible*.)

former: "The *Seraphim* are mythical beings, adopted instinctively by Isaiah from the folk-lore of Judah, and quite distinct from *angels*, which are described as altogether human, and without wings." Like Vishnu upon the bird Garuda, Yahweh rides upon a cherub (Ps. xviii. 10) or sits upon (*not* between) the cherubim (Ps. lxxx. 1, etc.), a personification it may be, of the storm cloud.<sup>1</sup> In Ezekiel's second vision of the cherubim (chap. x), the sound of their wings is compared to "the voice of God Almighty when he speaketh" (verse 5), that is, to the noise of thunder (cf. Job xxxvii. 4-5).<sup>2</sup> Their identity with the living creatures seen by the river Chebar (chap. i.) is repeatedly declared by the prophet himself (x. 15, 20, 21); and in that former vision the same comparison is made (i. 24), and their appearance is associated with "a stormy wind" (i. 4) and ebullitions of lightning (i. 13).

The fourfold face—of a man, of a lion, of an ox, and of an eagle—seems to be a comparatively late development (Ezek. i. 10; cf. Rev. iv. 7); for in the second vision the face of a cherub, as if of well-known aspect, is substituted for that of an ox (Ezek. x. 14). The multitudinous eyes, like those of Argus (Ezek. x. 12; cf. Rev. iv. 6, 8), seem also to have been added to the original conception, symbolical doubtless of divine omniscience, as the other features were of wisdom and power. The prevalent assignment of knowledge to cherubs, and of love to seraphs, as their peculiar attribute, is due to an erroneous etymology and a false analogy. The meaning of the former word is obscure, but certainly has nothing to do with knowledge, though it may involve the notion of strength, of which the ox is taken as a type. Franz Delitzsch connects it with the idea of circular movement, which may explain the association of cherubs with wheels (Ezek. x. 9-13), and is, perhaps, itself derived from the action of the whirlwind or cyclone.

Mention of "the Cherubim" (Gen. iii. 24, R. V.) seems to imply a definite and determined number of those mystic sentinels of the gates of Paradise, whether two, as in the case of the custodians of the Ark (Exod. xxv. 18, etc.), or four, as in the vision of Ezekiel (Ezek. x. 10), corresponding, doubtless, to the four quarters of the sky.<sup>3</sup> The "flaming sword which turned every way" is repre-

<sup>1</sup>It is at least curious to note in this connexion the meaning of the phrase in old English "to be in the cherubins," that is "to be all in the clouds," as we should say, "to have no substantial existence."

<sup>2</sup>"He thundereth with the voice of his majesty . . . God thundereth marvellously with his voice." Cf. Job. xl. 9; Ps. xviii. 13; xxix. 3-9; lxviii. 33; etc.

<sup>3</sup>Cf. Zech. vi. 5: "The four winds [or spirits] of heaven, which go forth from standing before the Lord of all the earth."

sented, not as wielded by the winged angel familiar to sacred art,<sup>1</sup> but as gifted apparently with power of independent movement, in order to withstand all attempts at trespass. Its physical source may, perhaps, be found in a long sunbeam flashing out from some dark cloud, in which a Greek would have seen the piercing shaft of the sun-god, the βέλος ἔχπευκός (*Iliad* i. 51) of Phœbus Apollo.<sup>2</sup> The cherub under whose charge the King of Tyre is said by Ezekiel (xxviii. 13 sq. Septuagint) to have been placed in the days of his glory when within "the garden of God," and who afterwards cast him out, is twice characterised by the epithet "overshadowing," suggestive of clouds that seem to brood over the earth.

So "the cherubim overshadowed or covered the ark" (Exod. xxxvii. 9 and 1 Kings viii. 7).<sup>3</sup> The "cloud" that "filled the house of Yahweh" with glory (1 Kings viii. 11), the vehicle of the divine presence, is only a translation into prose of the cherubim on which he sits enthroned. In one psalm Yahweh rides upon a cherub (Ps. xviii. 10) and in another makes the clouds his chariot (Ps. civ. 3).<sup>4</sup>

Closely associated with the cherubim, the seraphim<sup>5</sup> "personified the lightnings that surround the throne" of Yahweh.<sup>6</sup> Though they are only once mentioned by name in the Bible (Isa. vi. 2, etc.), they seem to be referred to, at least in germ, as the "flaming fire" that Yahweh makes his ministers, even as he "maketh the clouds his chariot" (Ps. civ. 3-4). Cherubim and seraphim thus become his close attendants in the Court of Heaven, just as the voice of thunder proclaims his near approach, like the trumpet of an earthly monarch.<sup>7</sup> Such personifying views of the powers and phenomena of nature gradually change into a belief in the control of beneficent forces by good angels, and the sim-

<sup>1</sup> Cf. Milton, *Paradise Lost*, I., 663:

"He spake: and, to confirm his words, out flew  
Millions of flaming swords, drawn from the thighs  
Of mighty Cherubim; the sudden blaze  
Far round illumined Hell."

<sup>2</sup> The flashing sword "is probably intended to denote lightning" (Ryle, *op. cit.*).

<sup>3</sup> "Cherubim of glory overshadowing the mercy-seat." (Heb. ix. 5).

<sup>4</sup> Cf. Isa. xix. 1: "Yahweh rideth upon a swift cloud." So the poet Cowper sings:

"He plants his footsteps in the sea,  
And rides upon the storm."

<sup>5</sup> The same word, *Sakraph*, is translated in Numb. xxi. 8, etc., "fiery serpent." So also in Isa. xxx. 8. "To judge from their name, they [the *Seraphim*] were popularly imagined as serpents" (Cheyne). In Enoch xx. 7 we read of "Gabriel, one of the holy angels, who is over Paradise and the serpents and the Cherubim"; upon which statement the Rev. R. H. Charles remarks in a note, "The serpents may be Seraphim."

<sup>6</sup> Ryle, *op. cit.*

<sup>7</sup> Exodus xix. 6. Cf. 2 Kings ix. 13.

ilar direction of tempests, and diseases, and other plagues by evil spirits or demons;<sup>1</sup> though physical calamities are frequently attributed to "the Angel of Yahweh" in the Old Testament.<sup>2</sup>

The seven spirits before the throne of God (Rev. i. 4; cf. Rev. v. 6 and Zech. iv. 10), of which we read in the Apocalypse of St. John, also called "the seven angels" (Rev. viii. 2) and coupled with "the seven stars" (Rev. iii. 1) are, at least in their original acceptation, the archangelic rulers of the seven known planets of antiquity,<sup>3</sup> which presided over the days of the week in many lands and continue nominally to do so (with more or less modification) amongst almost all the nations of modern Europe. These planetary spirits had their representatives in the religious systems of ancient Egypt, Persia, and India. It was from Persia, in all probability, that Judaism borrowed the conception, giving names of its own<sup>4</sup> to each of the sacred seven. Two only of these occur in the canonical Scriptures,—Michael and Gabriel. In the apocryphal Book of Tobit we read of "Raphael, one of the seven holy angels which present the prayers of the saints, and go in before the glory of the Holy One" (Tobit xii. 15).<sup>5</sup> In Second Esdras (otherwise known as Fourth Ezra) we meet with the name Uriel or Jeremiel<sup>6</sup> as that of "the angel that was sent to" the seer (iv. 1; v. 20; x. 28). Meaning "the Light (or Fire) of God," he may be identified perhaps with the "angel standing in the sun" of the Apocalypse (Rev. xix. 17. Cf. Milton, *Paradise Lost*, Book III., 613–622). In the Book of Enoch he is one of the four archangels, of whom mention is made (chapters ix., xx., and lxxiv.), whose place is sometimes taken by Ramiel (xx. 7 in the Greek) or Phannel (liv. 6). The names of the seven are usually given as Michael, Gabriel, Raphael, Uriel, Chamuel, Jophiel and Zadkiel; the last three, however, have never received recognition from either the Eastern

<sup>1</sup> "Thou dumb and deaf spirit, I command thee, come out of him." Mark ix. 25.

<sup>2</sup> "He arose and rebuked the winds and the sea." Matt. viii. 26.

<sup>3</sup> "He stood over her, and rebuked the fever." Luke iv. 39.

<sup>4</sup> "A spirit of infirmity." Luke xiii. 11.

<sup>5</sup> "Whom Satan had bound." Luke xiii. 16.

<sup>2</sup> Cf. Exod. xii. 23; 2 Sam. xxiv. 16; 2 Kings xix. 35.

<sup>3</sup> Including the sun and moon, and of course excluding the earth.

<sup>4</sup> Jewish tradition ascribes these names to Babylonish sources; and in this connexion it is interesting to note that there are now in the British Museum rude earthen bowls from the Euphrates valley bearing the names of Shaltiel, Malkiel, etc., along with those of the Jewish archangels Michael, Raphael, and Uriel, probably used as charms with healing draughts.

<sup>5</sup> Cf. Rev. viii. 2–3: "I saw the seven angels which stand before God . . . And another angel came . . . and there was given unto him much incense, that he should add it unto the prayers of all the saints upon the golden altar."

<sup>6</sup> "Jeremiel the archangel" (iv. 36, R. V.).

or Western branch of Christianity.<sup>1</sup> In the New Testament the word "archangel," which is not found at all in the Old Testament, occurs but twice, and then only in the singular number (1 Thess. iv. 16 and Jude 9). In the latter passage Michael is signalled as "*the* archangel." Gabriel is simply called "the man" in Daniel (viii. 16; ix. 21), and in St. Luke's Gospel he is "the angel Gabriel" (Luke i. 26) who stands "in the presence of God" (Luke i. 19).

Although the number seven occurs in Ezekiel (ix. 2) as that of a band of apparently angelic beings, and in Zechariah (iv. 10) as that of those "eyes of Yahweh" which "run to and fro through the whole earth,"<sup>2</sup> yet it is in the apocryphal Book of Tobit that we get the first distinct notice of seven Archangels,<sup>3</sup> though they do not receive that title even there. That tale is saturated with Persian ideas,<sup>4</sup> and we cannot avoid inferring a close connexion between those seven Princes of the celestial host and the seven Amesha-Spentas of Zoroastrianism. The conception of heavenly Watchers, acting as the eyes of the Almighty, is suggested in symbolical language by Zechariah (iv. 10) and finds definite expression in the Book of Daniel (iv. 13, 17, 23) and the apocryphal Enoch.<sup>5</sup> The stellar origin of such intelligent beings is shown not only by phrases and allusions that concern Hebrew modes of

<sup>1</sup> *Michael*, the Angel of Judgment, means "Who is like God?"

*Gabriel*, the Angel of Mercy and of Good Tidings, means "Man of God."

*Raphael*, the Angel of Protection, means "God's Healer."

*Uriel*, the Angelic Interpreter, means "the Fire of God."

*Chamuel*, means "He who sees God."

*Jophiel* means "The Beauty of God."

*Zadkiel* means "The Righteousness of God."

Michael as the conqueror of the Dragon (Rev. xii. 7-8) is the lineal successor of Marduk (Bel Merodach), who in Assyrian mythology overcomes Tiamat, the monster of the deep; as the mediæval weigher of souls, he takes the place of the Egyptian Thoth, as may be seen by comparison of many a painting upon our old church walls with pictures of the Judgment scene in *The Book of the Dead*, and elsewhere.

<sup>2</sup> Cf. Milton's *Paradise Lost*, III., 648 sq.:

"The Arch-Angel Uriel, one of the Seven,  
Who in God's presence, nearest to his throne,  
Stand ready at command, and are his eyes  
That run through all the Heavens, or down to the Earth  
Bear his swift errands."

<sup>3</sup> Tobit xii. 15: "I am Raphael, one of the seven holy angels, which present the prayers of the saints and go in before the glory of the Holy One."

<sup>4</sup> Asmodeus seems to be derived from the Persian evil spirit Aēshma; the companionship of a dog may be compared with a similar feature in legends relating to the Persian protecting spirit Sraosha whose attributes are like those of Raphael. He is repeatedly called "the fiend-smiter" in the Avesta.

<sup>5</sup> See chaps. x., c., etc. In the apocryphal "Revelation of Paul" we read of the sun, moon, and stars coming before God, and complaining of the wickedness of men, and from "all the angels . . . bring before Him the works of men, of each what he has done from morning even to evening, whether good or evil."

thought, but also by the Vedic hymns of ancient India where we read that Varuna's "spies proceed from heaven towards this world; with thousand eyes they overlook this earth"; by the Greek myth of Argus, and the beautiful prologue of the *Rudens* of Plautus, in which the star Arcturus tells how

"Jove, supreme o'er gods as o'er mankind  
 Hath us as Watchers o'er your race assign'd:  
 Scatter'd thro' different nations, among you,  
 We knowledge take of all that mortals do. . . .  
 Their names, by us recorded, meet the eyes  
 Of Jove, who learns what guilt for vengeance cries. . . .  
 But we on other tablets write the name  
 Of each whose worthy deeds such record claim."

Each nation was believed to have its own special angel to guard and govern it. In the Book of Daniel, Michael is termed "your prince" (x. 21) in reference to the prophet and his fellow-countrymen, on whose behalf it is further predicted that he shall interpose at a critical juncture: "Michael . . . the great prince which standeth for the children of the people" (xii. 1). One angel is spoken of as "the prince of the Kingdom of Persia," and another as "the prince of Greece" (x. 20). In the Book of Enoch (chaps. lxxxix—xc) the Seventy Shepherds, who are rebuked and punished for neglecting their charge, would seem to be the angelic watchers who presided over and represented<sup>1</sup> the (supposed) seventy nations of the world.<sup>2</sup>

The doctrine of guardian angels, not only of nations and churches, but also of individual souls, is not so much taught as taken for granted in the New Testament (e. g., Heb. i. 14), being based upon such passages of the older Scriptures as Ps. xxxiv. 7; xci. 11; Dan. iii. 28. That each human being is under the care of a special tutelary spirit is more than a mere "pious opinion" in the Church of Rome, and seems distinctly sanctioned by New Testament authority (Matt. xviii. 10). We are reminded by this Jewish, or at any rate early Christian, belief of the *Genius* of the old Roman religion and the γενέθλιος δαίμων of Pindar. The twin-born spirit

<sup>1</sup> So seven angels, in Rev. ii. and iii., represent the seven churches of Asia.

<sup>2</sup> See Lightfoot, *Hor. Hebr.* John vii. 37 and Targ. Ps. Jonath. Genesis xi. 7, 8. Just seventy nations are mentioned in Genesis x. as descended from Noah; and according to the Septuagint (Deut. xxxii. 8), the bounds of the nations were appointed "according to the number of the angels of God" who were to preside over them. Cf. the Book of Jubilees xv. 23 (as translated by Schodde, *Bibliotheca Sacra*, July, 1886): "There are many nations and many peoples, and all are his [i. e., the Lord's], and over all has he appointed spirits to rule, that they should lead them astray from him, but over Israel he did not appoint any ruler, neither an angel nor a spirit, but he alone is their ruler, and he preserves them." Clement of Alexandria (*Strom.* vi. 17) says that "regiments of angels are distributed over nations and cities"; but he is more doubtful as to whether "some are assigned to individuals."

was popularly regarded (like the astral body of occult theosophy) as possessing the form and features of the person to whom he belonged (Acts xxii. 15), or rather who belonged to him (Acts xxvii. 23). In the *Pastor* of Hermas we find a further development of the doctrine in the conception of a bad angel as well as a good one attached to every individual. "There are two angels," he writes (ii. 6. 2), "with a man,—one of righteousness and the other of iniquity," and he gives directions how to distinguish between the voices of the two, as heard within the heart. Such language is more than metaphorical when first employed. The restraining voice of the goddess Athena in Homer is not a mere personification of the man's own prudence; but in the Fable of the Choice of Heracles, as narrated by Prodicus, the advocates of virtue and of vice are as manifestly unreal as the allegorical characters of a "morality" or a masque. The nature of angels comes in course of time to be divested of all those corporeal attributes which connected it more or less closely with humanity in the artless narratives of the past.<sup>1</sup> Indeed, that nature is so etherialised and refined by the more spiritually minded among devout believers, that there is little left upon which the imagination can work with any effect. As with the idea of God or immortality under similar conditions, what is gained in grandeur is lost in vivid apprehension. The angels of Philo are hardly to be distinguished from abstract qualities clothed in the language of *Prosopopœia*.

Certain mysterious, if not altogether incomprehensible, faculties are assigned to the semi-human denizens of the sky even in the earliest Biblical accounts of their appearance among men. Their power of being visible or invisible at will is implied in the story of Balaam and the angel who opposed his onward progress (Numb. xxii. 31), and their independence of ordinary means of locomotion is shown in that of Manoah and his wife (Judges xiii. 20). The absence of palpable flesh and bones in the spiritual organisation is plainly declared in the New Testament (Luke xxiv. 39; cf. 1 Cor. xv. 50), and in virtue of their immortality they are represented as having no concern with those sexual relations upon which the perpetuity of life upon our planet depends (Matt. xxii. 30). This view of the angelic nature is, however, inconsistent with Jude's ascription of the Fall of the Angels to carnal lust, as is evident from the context (Jude 6, 7,) of the passage. The earliest commentators had no doubt that the words referred to that intercourse between the sons of God and the daughters of men, to which

<sup>1</sup> Cf. Gen. xviii. 8; xix. 3; xxxii. 24-30; Psalm lxxviii. 25 ("Angels' food," A. V.).

is ascribed the depravity of the age before the flood (Gen. vi. 2 sq.); and this is the unanimous verdict of modern scholars. In Apocryphal literature ("Book of Enoch," etc.) the original corruption of the human race is attributed to this Fall of the Angels and its results in a mixed progeny of demons, rather than to a Fall of Man, directly, in the persons of Adam and Eve.<sup>1</sup>

Other and less sensual motives were sometimes assigned as the cause of the defection of the Angels, ending in a forced expulsion from "their proper habitation" (Jude 6), rather than a voluntary withdrawal.<sup>2</sup> Pride or presumption was the origin of the Devil's condemnation according to the second century (?) writer of 1 Timothy (iii. 6),<sup>3</sup> and our own Milton, in his grand picture of "War in Heaven" and its disastrous issue for Satan and his hosts, has attributed the source of the revolt to "envy against the Son of God."<sup>4</sup> His account of the celestial mutiny, which the average Englishman supposes to be derived, at least in its general outlines, from the Bible, has in truth more points of connexion with Pagan mythology than with the Sacred Scriptures of Jew or Christian. The world-wide myth of the defeat of the Dragon of Darkness by the Powers of Light (familiar to Judaism from the Babylonian version)<sup>5</sup> furnishes the writer of the Apocalypse (Rev. xii. 7-10) with the form of phraseology in which he predicts the *future* tri-

<sup>1</sup> In the Apocalypse of Baruch, it is said that by Adam's transgression death and other evils came into the world, but the doctrine of original sin is absent (liv. 15). Indeed he writes: "Adam was the cause of guilt to his own soul only; but we, each of us, are the Adam to our own souls (liv. 19). In 4th Ezra (2d Esdras) the orthodox doctrine is taught (iii. 21-22; vii. 48 [118]) so far at least as hereditary corruption is concerned. But, as R. H. Charles remarks on Apocrypha of Baruch liv. 19, "the evil impulse does not constitute guilt or sin unless man obeys it." Cf. Apoc. of Baruch xlvi. 42.

<sup>2</sup> ἀπολιπόντας τὸ ἴδιον οἰκητήριον (Jude 6).

<sup>3</sup> Cf. Shakespeare, *Henry VIII.*, Act III, Scene 2:

"Cromwell, I charge thee, fling away ambition:  
By that sin fell the angels," etc.

<sup>4</sup> *Paradise Lost*, Book V., 662. Milton's portrait of the "Archangel ruined" has no real parallel in the Biblical passages which have in part suggested it. Isaiah's magnificent apostrophe to Babylon (xiv. 12 sq.) has, of course, nothing to do with the "Lucifer" of mediæval imagination, except through patristic misinterpretation. In the pseudo-Ignatian epistle to the Philippians (ch. xi.) the Fall of Satan is attributed to sensuality as well as pride. A double apostasy of the angels is assumed by some divines, one, before the creation of Adam and Eve, manifested in open rebellion, the other due to secret desertion of their high estate for union with "the daughters of men." According to Tatian (*Apol.* 7) the angel "who was more subtle than the rest" became a demon, and was excluded from fellowship with God, in consequence of the part he took in the Fall of our first parents. Cyprian (*De dono patient.*, p. 218) assigns the interval between the creation of man and his temptation as the time of the Devil's apostasy and attributes its cause to envy against the former as made after the image of God. Cf. Wisdom ii. 24: "by the envy of the devil," etc., Irenæus *Adv. haer.* iv. 40, 3, and Gregory of Nyssa, *Orat. catech.* c. 6. Lactantius (*Inst.* ii. 8) refers the Fall of Satan to envy of the Logos, a spirit created by God like unto himself.

<sup>5</sup> Marduk (Merodach or Bel) conquers the monster Tiamat, as Michael subdues "the great dragon . . . called the Devil" (Rev. xii. 9). Cf. Isa. xxvii. 1.

umph of "the kingdom of our God and the authority of his Christ." Isaiah employs somewhat similar imagery to foreshadow, as it were, the downfall of the King of Babylon (Isa. xiv. 12-15); but the prototype is here no monster of the night,<sup>1</sup> but the brilliant planet of the dawn, which

"dropt from the zenith like a falling star."

—*Paradise Lost*, Book I., 744.

The physical phenomenon of a meteoric shower may indeed have first suggested a Fall of Angels from Heaven, some Satan "with his rebellious rout," like those Titans or Giants who in their audacity would have dethroned the Father of Gods and Men. (Cf. Isa. xxiv. 21; xxxiv. 4; Luke x. 18; Rev. ix. 1.)

Besides, passages to which allusion has been already made, a Fall of the Angels or their consequent punishment receives canonical recognition in Matt. xxv. 41 ("the eternal fire prepared for the Devil and his angels");<sup>2</sup> 1 Cor. vi. 3 ("we shall judge angels"); 2 Pet. ii. 4 ("God spared not angels when they sinned, but cast them down to Tartarus, and committed them to pits of darkness to be reserved unto judgment");<sup>3</sup> and Rev. xx. 10 ("the Devil that deceived them was cast into the lake of fire and brimstone").

The Devil,<sup>4</sup> Satan,<sup>5</sup> Beelzebub,<sup>6</sup> "the prince of the demons" (Matt. xii. 24), Belial<sup>7</sup> (2 Cor. vi. 15), Abaddon or Apollyon, i. e., "the Destroyer" (Rev. ix. 11), the Dragon, the old Serpent (Rev. xx. 2), are all names applied in the New Testament apparently to one and the same enemy of all good, "the god of this world" (2 Cor. iv. 4; cf. John xii. 31), "the prince of the power of the air" (Eph. ii. 2; cf. Eph. vi. 12, R. V.). This latter designation

<sup>1</sup> So, according to the common interpretation, the King of Tyre is compared to a cherub for brightness (Ezek. xxviii. 14-17).

<sup>2</sup> Cf. Enoch, liv. 5, 6 and x. 13.

<sup>3</sup> Cf. Enoch, vi.-xi.

<sup>4</sup> Διάβολος, "the Slanderer," or perhaps "Accuser" (Latin *criminator*, *Lact. Inst.*, ii. 9), never used in the plural number; his angels are demons, not devils. In John vi. 70 the term is applied to a human being, like "Satan" elsewhere.

<sup>5</sup> Satan, "the Adversary," is not always used as a proper name (Matt. xvi. 23, cf. 2 Sam. xix. 22). Even as such it occurs in the plural in Enoch xl. 7; as also in the Korân, etc.

<sup>6</sup> Identical with the god Ekron, Baal-zebub (2 Kings i. 2 sq.) meaning "Lord of flies," or "Lord of the (heavenly) dwelling" if the correct form of the name is preserved in the Greek of the New Testament as Beelzebub (Βεελζεβούβ), instead of being a contemptuous play upon the word, signifying "Lord of the dunghill." "The conception of Satan, the adversary, was of gradual and largely native growth in the Jewish mind, though not uninfluenced by impressive dualistic ideas. He took more definite character in the later ages, and with his kindred demons was shaped, in part, out of the rejected gods of heathendom and the spirits that dwelt in the wastes" (John Leyland).

<sup>7</sup> "Worthlessness." In the Old Testament the word is not a personal name (Deut. xiii. 13, etc.).

was in accordance with the belief that storms and pestilences were brewed by infernal spirits, and that the atmosphere was filled with them in innumerable multitudes. The notion has survived to our own day that "lightning and tempest" may be dispersed by the ringing of church bells, even where it has ceased to be regarded as a means of driving away demons that caused them. It was with this view among others<sup>1</sup> that they were and still are solemnly blessed or baptised, as is done with elaborate ritual in the Roman Church. The all-pervading presence of evil spirits, of one kind or another, in the air around is a constant article of faith among the Jews, and in the East generally.<sup>2</sup> They are believed to haunt solitary places (cf. Isa. xxxiv. 14 and Matt. xii. 43), and Sepulchres (cf. Matt. viii. 28), but also to frequent the habitations of men and women and crowded assemblies. "The *chalebi*, the old traditional head-dress of the Jewish women, seems to have been invented for the express purpose of keeping off the *Schedim*, who sit on the hair of women whose heads are uncovered" (F. W. Farrar, *Life of Christ*, Excursus vii). This cannot fail to remind us of St. Paul's exhortation to the female members of the Church of Corinth with reference to their apparel (1 Cor. xi. 10).<sup>3</sup>

The subject of demoniacal possession is one which meets us more or less distinctly throughout all periods of the world's history. It was a theory to account for certain forms of madness and other diseases, by no means peculiar to Jewish modes of thought, and one that is still rife in Oriental lands. It differed from the ordinary assaults of evil spirits, which might entail lingering and painful maladies,<sup>4</sup> in its hold over the mind as well as the body. The

<sup>1</sup> The object of the "passing" bell was to relieve the soul of the sick person from the assaults of evil spirits during its passage from this world to the next.

<sup>2</sup> The Jews divide them into two main classes, one wholly supernatural, fallen angels under their leader Satan or Sammael ("the poison of God"), and the other half-human, of which there are again two kinds: (1) the *Lilin* ("belonging to the night"), sprung from Adam and Lilith (see Isa. xxxiv. 14, R. V. margin) who reigns over them, or other female spirits, and (2) *Shedim* ("violent"), the progeny of Eve and certain male spirits, whose king is Asmedai (the Asmodæus of the Book of Tobit). Akin to them are the *Jinn* (plural of *Jinnce*, the *genie* of the *Arabian Nights*) of the Arabs, though there are both good and bad beings amongst them. See Sale, *Introduction to Koran*, Sec. iv.

<sup>3</sup> Tertullian explains the phrase "because of the angels" as suggested by those apostates who, captivated by women's charms, "fell from God and heaven." "So perilous a face then," he continues, "ought to be shaded, which has cast stumbling-stones even so far as heaven: that, when standing in the presence of God, at whose bar it stands accused of the driving of the angels from their native confines, it may blush before the other angels as well" (*De virg. vel.* 7), and cf. *Cont. Marc.* v. 6: "If he [St. Paul] means the fallen angels of the Creator, there is great propriety in his meaning. It is right that that face which was a snare to them should wear some mark of a humble guise and obscured beauty."

<sup>4</sup> Cf. Job ii. 7; Luke xiii. 16; iv. 39; 2 Cor. xii. 7.

demons which thus "possessed" human beings could be expelled, as it was thought, by the adoption of suitable means, or transferred to other persons or even brutes.<sup>1</sup> Exorcism passed from Judaism into the Christian Church. A special order of "exorcists" still exists in Roman Catholicism; evil spirits are driven out of candidates for baptism as part of the regular ritual, as well as out of the oil and water which receive solemn consecration for religious use, and more striking exhibitions of priestly power are not altogether unknown in cases of extraordinary possession which appear to present themselves from time to time even in European countries. Doctrines of demoniacal obsession and possession readily lent themselves to expansion in connexion with sorcery and witchcraft, so that the mediæval Devil, with all his ridiculous grotesqueness and gullibility,<sup>2</sup> was, nevertheless, invested with such terrible powers over nature and mankind as created a veritable nightmare throughout Christendom from the middle of the fifteenth century onwards.

As the angels of light were spoken of in military language as arranged in hosts (Ps. ciii. 21, etc.), camps (Gen. xxxii. 1-2; Ps. xxiv. 7), and legions (Matt. xxvi. 53), so the angels of darkness are referred to in terms of similar organisation (Mark v. 9). Their ranks of comparative dignity are to some extent parallel with those of the celestial hierarchy. On the one side we read of "principalities" and "powers," "the world-rulers of this darkness," "the spiritual hosts of wickedness in the heavenly places"<sup>3</sup> (Eph. vi. 12; cf. Rom. viii. 38 and Col. ii. 15), and, on the other side, of angelic "thrones," "dominions," "principalities," and "powers" (Col. i. 16; cf. Eph. i. 21), all subordinate to the Son of God. These celestial orders received elaborate exposition at the hands of the author who wrote under the name of Dionysius the Areopagite (fifth century A. D.?), and are arranged by him in three triple groups, thus :

<sup>1</sup> Cf. Matt. viii. 31-32.

<sup>2</sup> The ease with which the stupid Devil of folk-lore is imposed upon and cheated is a feature in his character not altogether accounted for by inheritance from popular traditions of trolls and giants, for it is not confined to those Teutonic countries where such stories were current. It may be considered as, in some measure at least, the vulgar reflexion of that theory of man's redemption which was the prevailing one before Anselm wrote his great work *Cur Deus Homo*—viz., that the Devil was outwitted and deceived in accepting the person of Christ as his prey, in lieu of humanity at large, under the impression that he was a mere man, and could be held fast by him in the bonds of death.

<sup>3</sup> This expression (ἐν τοῖς ἐπουρανίοις) may mean the regions of the middle air assigned by Jewish tradition to the powers of evil; though it must be remembered that in the Book of Job Satan presents himself before Yahweh among "the sons of God," and receives a mandate directly from him (cf. 1 Kings xxii. 21 sq.).

Counsellors	{	Seraphim
		Cherubim
		Thrones
Governors	{	Dominations
		Virtues
		Powers
Ministers	{	Principalities
		Archangels
		Angels

In the *Secrets of Enoch* (30 B. C.?) ten orders of angels throned the steps of the throne of God (chap. 20). A modified worship of angels, along with that of saints and martyrs, attained considerable prominence in the fourth century of the Christian era (a sort of recrudescence of polytheism, led up to by the doctrine of the Trinity, and the veneration of the Virgin Mary),<sup>1</sup> and has continued to do so in the Roman and Eastern Churches. Its rise seems to be alluded to in *Coloss. ii. 18*, as well as in *Rev. xix. 10*.

Angels, as represented in sacred art,<sup>2</sup> have features which we can trace in the *Erôs* or *Hymên* of the Greeks, the *Victories*, *Cupids*, and *Genii* of the Romans, and more remotely in the winged symbolical figures of *Egypt*, *Assyria*, and *Persia*. In like manner the mediæval portraits of the *Devil* and his crew are derived in some measure from *Pan* and the *Satyrs*, the *Lemures* and *Laræ*, the *Pythons* and *Hydras* of classical antiquity, as well as from Teutonic prototypes of woodland monsters; though *Chaldea* may have furnished the original idea of the *Dragon* which has been handed down to us in so many varying shapes, in *Tiamat*, the *Monster of the Deep*, whose compound effigy we may still see on a well-known *bas-relief* in the *British Museum*.<sup>3</sup> But to match the gruesome imagination which once covered the walls and gates of Christian churches and cemeteries with realistic presentments of foul fiends torturing the damned, we must go as far as *China*, so true is it that men at the same stage of culture, however far removed from one another in time and space, are apt to develop almost identical conceptions without any means of actual communication between them.

<sup>1</sup> The term "Mariolatry" is incorrect. It is homage (*δουλεία*), not the highest worship (*λατρεία*), which is paid by Roman Catholics to the Blessed Virgin, as to other saints or angels, though to her in a preëminent degree (*Hyperdulia*.)

<sup>2</sup> They do not make their appearance till the beginning of the fifth century A. D., in the mosaics of *Ravenna* and *Monreale*.

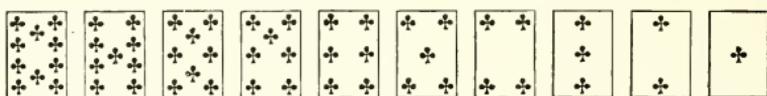
<sup>3</sup> It is not till the eleventh century that sculptured figures of the *Devil* and his imps present themselves in Christian architecture.

## MIND-READING IN THE NURSERY.

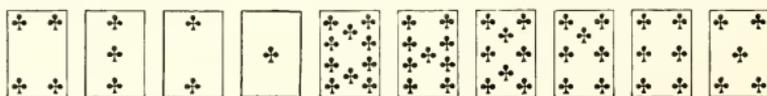
BY THE EDITOR.

A GOOD method of keeping up the interest of boys and girls in mathematics is to explain to them easy arithmetical tricks which they can readily perform for themselves. A very simple card-trick, which appears quite wonderful to the uninitiated, is as follows:

Ten cards from ace to ten are laid out in a row, beginning at the right and with their faces down. The performer of the trick announces that he will tell the number of cards which may be moved by one of the company from the right to the left and in addition pick up the card bearing this number. As we wish to explain the trick, we will play with the faces of the cards upwards; and the original order (when uncovered) will be this:

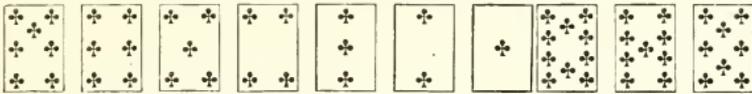


The magician then leaves the room, and some one who wishes to test the extraordinary accomplishment of his young friend transfers a few cards in their regular order from the right side to the left. Let four cards be moved, then the new order will be this:



You will at once see that the four-spot has become the first card of the row. The first card tells the number of the cards moved. Accordingly the young performer lifts up the first card, and seeing that it is a four-spot declares, "Four cards have been moved." The art of the magician consists in giving the impression that he knows the card before he picks it up, and that the discovery of the position of the four-spot is only an additional proof of his omniscience. He goes out again, knowing beforehand that

whatever number of cards may be moved from the right side to the left, the card which bears that number will always be found in the last position of the ten-spot, which at present is the next place after the four cards transposed in the first move; i. e., in the fifth place. If no card is moved, the ten-spot will remain in its place and will be picked up as a sign that all ten cards, or none at all, which means the same thing, have been moved. But suppose that three cards have been moved, then the three will be in the fifth place:



The place of the card showing the number of cards moved will always be "one plus the total number of moves," and it is a matter of course that only units count.

After the second move the card to be taken up will be  $1 + 4 + 3 = 8$ , and supposing that five cards are now moved the five will appear in the eighth place. Thus we may continue, and the uninitiated will wonder what trick is at the bottom of the performance, which is nothing but a very simple example in addition.

Another trick, which may be called "mind-reading," is also the work of simple arithmetic.

Suppose you request a person to think of any number from 1 to 15 and to point out to you the rows in which his number occurs in the following scheme:

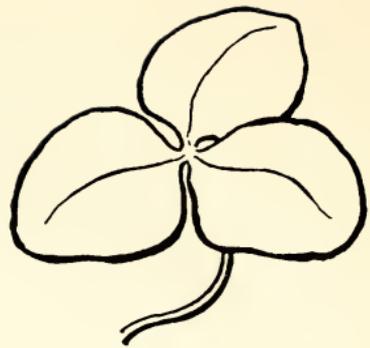
1	3	5	7	9	11	13	15
2	3	6	7	10	11	14	15
4	5	6	7	12	13	14	15
8	9	10	11	12	13	14	15

You will at once know the number which the person has in mind when he tells you in which horizontal rows it occurs, for all you have to do is to add together the first numbers of these rows. A close inspection will tell you that 3 occurs in the two lines beginning with 1 and 2; the number 5 in the lines beginning with 1 and 4, etc., and 15 in all four lines beginning with 1, 2, 4 and 8.

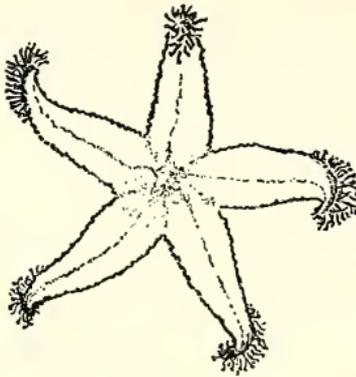
If we now replace the numbers with pictures, the arithmetical clue will be concealed, and the audience will be thoroughly mystified. In order to assist the little magician, whose memory is not as yet well trained, we propose to replace the numbers with pictures which will readily suggest the numbers that they represent. This may be done by representing the four numbers 1, 2, 4, and 8 by wheels; 1 by a wheelbarrow, which has one wheel; 2 by a bicycle or a cannon, which has two wheels; 4 by a wagon, which has four



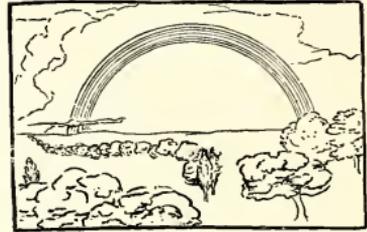
WHEELBARROW.



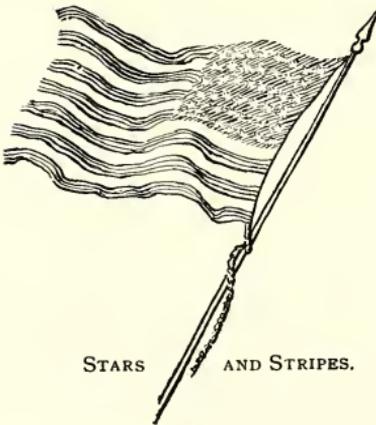
CLOVER.



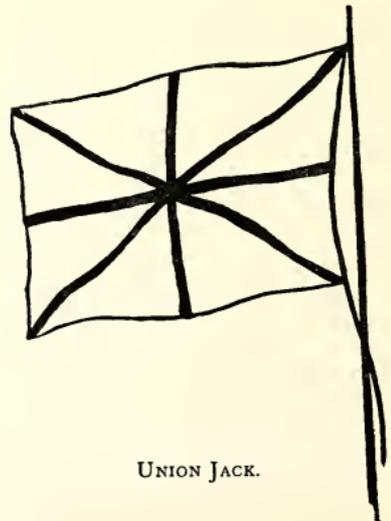
STARFISH.



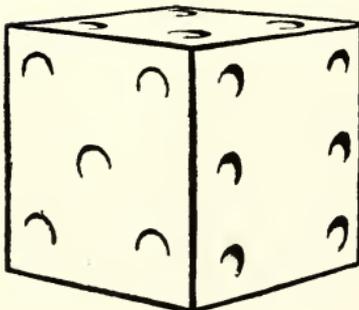
RAINBOW.



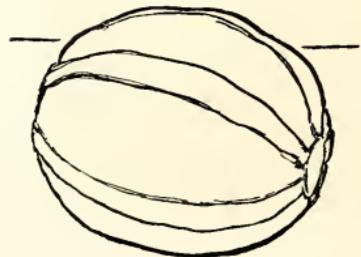
STARS AND STRIPES.



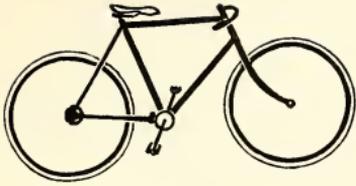
UNION JACK.



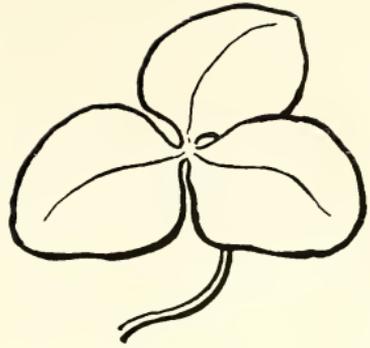
DIE.



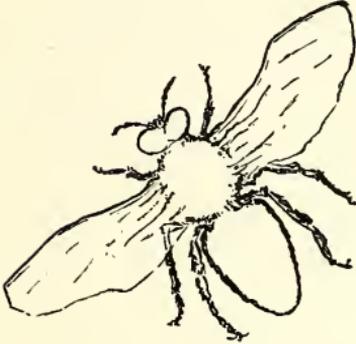
FOOTBALL.



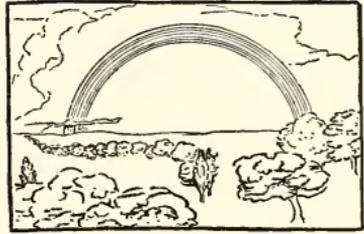
BICYCLE.



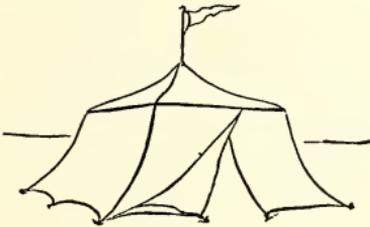
CLOVER.



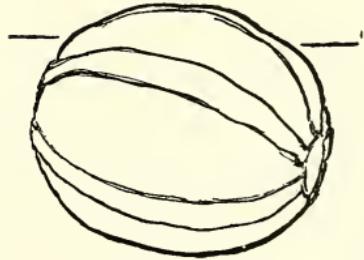
BEE.



RAINBOW.



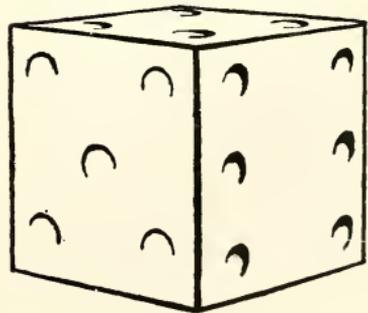
TENT.



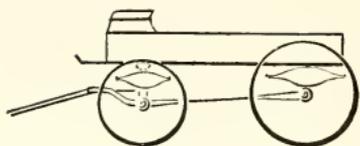
FOOTBALL.



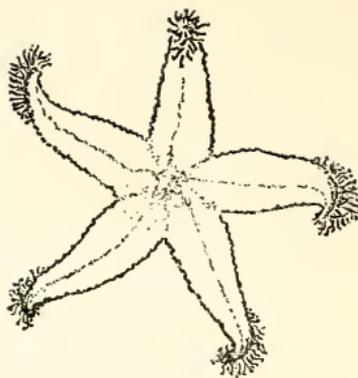
CONSTELLATIONS.



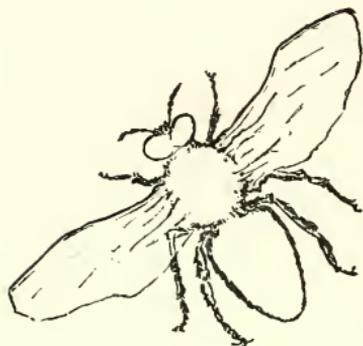
DIE.



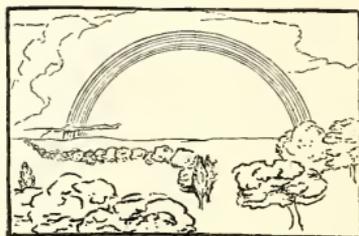
WAGON.



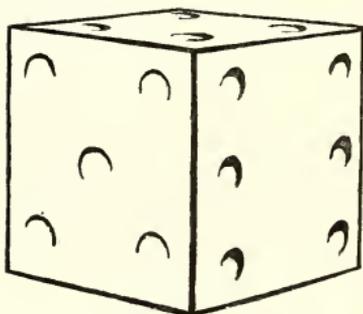
STARFISH.



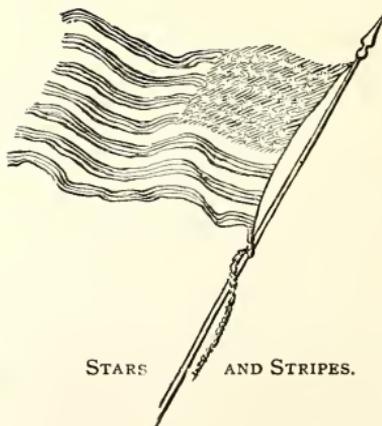
BEE.



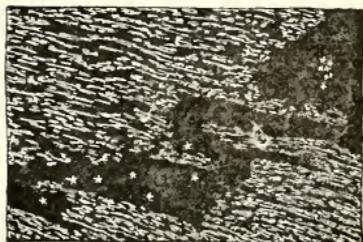
RAINBOW.



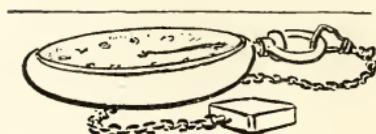
DIE.



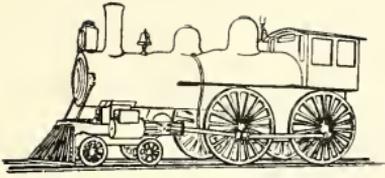
STARS AND STRIPES.



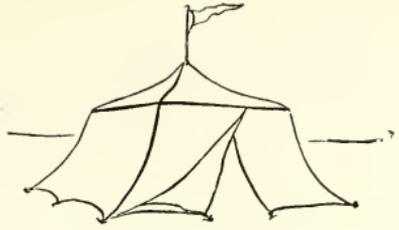
CONSTELLATIONS.



WATCH.



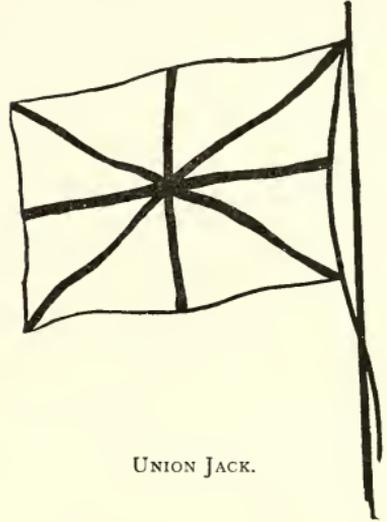
ENGINE.



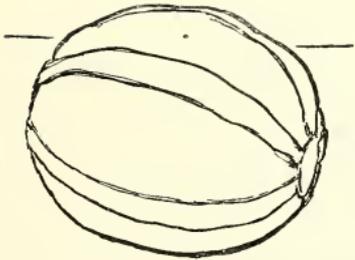
TENT.



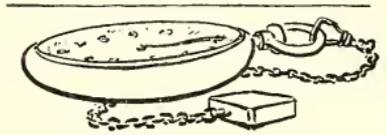
STARS AND STRIPES.



UNION JACK.



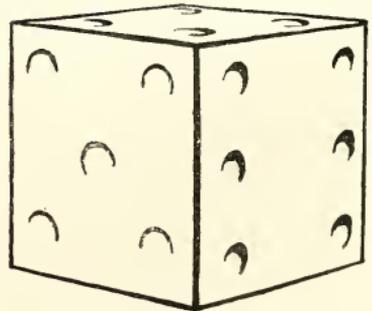
FOOTBALL



WATCH.



CONSTELLATIONS.



DIE.

wheels; and 8 by an engine which has eight wheels. Another method of representing these four numbers would be by feet: 1 as a top or as a stork standing on one foot; 2 as a man; 4 as any quadruped; and 8 as a spider or an octopus.

The other figures may be represented by other objects suggesting the several numbers. Clover may represent 3; a hand or a starfish, 5; an insect having six feet, 6; a rainbow, 7; the Union Jack, which can be made with 9 strokes, or a school-house, will represent 9 (nine o'clock being the hour for beginning the recitations); the decalogue of Moses, 10; or if this be too weighty a subject or too difficult to draw, take a tent, the sound of whose name will remind you of ten; 11 would be well represented by a football; 12 by the meridian sun, or by a clock or watch whose small hand points to twelve; the American flag with its thirteen stripes will represent 13; another representation of 13 would be Christ with the twelve Apostles, or a cross: for the idea that 13 is an unlucky number originated through the thought of the crucifixion, Christ having been the thirteenth at the Last Supper; fourteen may be the crown of Louis XIV., or his coat-of-arms, or a valentine, since St. Valentine's day falls on the fourteenth of February, or the two constellations, the Dipper and the Pleiades, each one consisting of seven brilliant stars visible to the naked eye; while 15, finally, may be represented by a die showing the faces 4, 5, and 6.

All these things can be easily drawn by children and should be so arranged on four cards as to reproduce the number-arrangement given above. Each card will correspond to a row, and in our illustrations the first number of each row is represented by the picture in the upper left-hand corner. It is not necessary to preserve the same order, if our youngster only remembers the place of the pictures which represent the numbers that must be added. Having drawn his four cards, he presents them to some one with the request that he think of some of the objects and hand him back those cards on which this object appears. Each card that is handed back represents a number, and their sum indicates the object thought of. Thus if a person thinks of the flag (number 13), he will hand back the cards bearing the pictures wheelbarrow, waggon, and engine, as being those on which the flag occurs, representing the numbers 1, 4, and 8, the sum of which makes 13.

The underlying theory of the trick is of course old and pretty well known, but the idea of expressing it in pictures that represent the numbers and that can be easily drawn by the children themselves, is new and may be welcome to educators and parents.

## MISCELLANEOUS.

### THE PRINCIPLE OF "LIKE CURES LIKE" IN GREEK LEGEND.

Homœopathy, or the doctrine of "like cures like" (*Similia similibus curantur*), is of very ancient origin and was based originally on religious considerations. The idea is that of "an eye for an eye and a tooth for a tooth"; blood-guilt could be propitiated, or cured, only by the shedding of blood, and reparation had to be made in kind.

The extension of this principle to the art of healing appears first in classical antiquity in the Greek epic, where we are informed that a warrior by the name of Telephus, one of the allies that came to Troy, was wounded by the spear of Achilles. The wound did not close, and the oracle was consulted. The reply was that the spear which had caused the wound alone could cure it; whereupon the patient, after considerable effort, procured some shavings from the spear-head of Achilles, and applying them to the wound healed it.

The idea has been frequently represented in Greek art, and we here reproduce an Etruscan mirror depicting the event. The background of the scene is ornamented with a solar disc, which is frequently used as an emblem of the restoration of health. This idea is even received in the Bible, where in Malachi iv. 2 we read: "The Sun of righteousness shall arise with healing in his wings." P. C



ORNAMENT ON AN ETRUSCAN MIRROR.<sup>1</sup>

The Cure of Telephus.

### CUI BONO?

Aye, to what purpose is this strain of thought,  
Eager uplifting of the soul on high,  
Keen piercing utterance of a spirit-cry

<sup>1</sup> Reproduced from Springer's *Handbuch*, Vol. I., p. 107.

For knowledge, with a loftier wisdom fraught ?  
 Is it all vain, as some will surely say,  
     Speaking hours squandered by a mind possessed,  
     Showing powers shattered on a fruitless quest,  
 While the dark breaks not into dawn of day ?

“There is a budding morrow in midnight,”  
     Sang silken-tongued a poet 'mid grey youth :  
 So, in Seclusion's hour of scantiest light,  
     May flicker faint, for all the scholar's ruth,  
 Some secret flame that shall by radiance bright  
     Flood with calm glory his long road to Truth.

LONDON, England

ELLIS THURTELL.

## BOOK REVIEWS.

THE WORLD AND THE INDIVIDUAL. Gifford Lectures, delivered before the University of Aberdeen. First Series, the Four Historical Conceptions of Being. By *Josiah Royce*, Ph. D., Professor of the History of Philosophy in Harvard University. New York and London : The Macmillan Company. 1900. Pages, xvi, 588.

A decided *penchant* for metaphysics will be necessary to enjoy Prof. Royce's work. It is the boom of the heavy siege-guns of philosophy that reverberate through his pages, not the rippling crack of its light field-artillery. And this is precisely as Prof. Royce would have it. He terms his method “thoroughgoing philosophical inquiry,” as opposed to what we might call intelligible superficial inquiry, declares that it is useless “to defend its methods to people who by nature or by training are opposed to it,” and addresses himself to “the still open-hearted inquirers” whom God in his grace has specially endowed with philosophical comprehension.

The essays of the volume are Gifford Lectures, and the first series only of the two to be delivered. “Lord Gifford's will,” says Professor Royce, “calls upon his lecturers for a serious treatment of some aspect of the problems of Natural Religion. These problems themselves are of the most fundamental sort ; and in this first series I have not seen my way clear to attempting anything less than a philosophical inquiry into first principles.”

In this philosophical inquiry he has remained true to the position which he originally assumed in his thinking, “that the very conditions which make finite error possible concerning objective truth can be consistently expressed only by means of an idealistic theory of the Absolute.” Since that time, he has struggled to come to clearness as to “the relations of Idealism to the special problems of human life and destiny”. “Thought” was the term which he first hit upon as the best name for the final unity of the Absolute,—Thought as inclusive of Will and of Experience. But these latter aspects of the Absolute Life were not sufficiently emphasised by him formerly, a task which he now proposes to do in the present work, which is “a deliberate effort to bring into synthesis, more fully than before, the relations of Knowledge and of Will in our conception of God.”

It is also to be noted that whereas formerly in Prof. Royce's system the term Thought “as applied to the Absolute, referred not only to finite processes of thinking, but also, and expressly, to the inclusive Whole of Insight, *in* which both truth and value are attained, not as objects beyond Thought's ideas, but as appreciated and immanent fulfillment or expression of all the purposes of finite Thought,” now

he uses the term Thought "as a name for the process by which we define or describe objects viewed as *beyond* or as *other than* the process whereby they are defined or described." The aim which Prof. Royce sets himself will now be clear. The book contains ten chapters, of which the titles are as follows: 1. Introduction: The Religious Problems and the Theory of Being; 2. Realism and Mysticism in the History of Thought; 3. The Independent Beings: A Critical Examination of Realism; 4. The Unity of Being, and the Mysterious Interpretation; 5. The Outcome of Mysticism, and the World of Modern Critical Rationalism; 6. Validity and Experience; 7. The Internal and External Meaning of Ideas; 8. The Fourth Conception of Being; 9. Universality and Unity; 10. Individuality and Freedom

μ.

The May issue of *The Biblot* is *A Song to David*, by Christopher Smart, edited by Prof. Charles F. Richardson, and supplemented by a portrait of the poet from an edition of 1791. Robert Browning is responsible for the resuscitation of Smart's poem which, as the editor of the present edition informs us, "remained considerably more than a century a mere title in English bibliography." In *the Shadows*, a poem in sonnets by David Gray, a young Scotch poet, who was born in 1838 and died in 1861, "not knowing what it was to live," forms the June issue of *The Biblot*. It is the production of an invalid, a genuine poem of pain, "never widely read," according to the confession of the editor, "and still less likely to be read in the future." Nevertheless, the verses are musical and many of them thoughtful. *The Field Play*, a story of the cruelty and bitterness of certain phases of English peasant life, by Richard Jeffries, is the July issue. (Five cents each.)

The Baker & Taylor Company of New York have issued a new edition of the Swami Vivekânanda's *Vedânta Philosophy*. It treats of the Râja Yoga, or the method of attaining the knowledge which is the essence of religious bliss. One of the main exercises, for example, is the drawing in of a column of air through *Idâ*, the left nostril, sending at the same time a nerve-current down the spinal column and causing the current to bump violently upon the solar plexus, which is the basic lotus and also incidentally the place where Fitzsimmons smote the renowned Yogi Corbett; all of which culminates in the rising of *Kundalini*, which rising is the beginning of knowledge. We refrain from epitomising the remaining stages for attaining true enlightenment. It only remains to mention that we learn for the first time from this book that love is like a triangle; why it is not like a quadrangle, or a pentagon, or an icosahedron, which would be far more Platonic, the author has not vouchsafed to say. (Pages, 381.)

The Rev. Dr. Frederic Rowland Marvin has collected under the title, *Last Words of Distinguished Men and Women*, much curious and interesting matter relating to the last hours of the great men and women of the world. The matter is alphabetically arranged and accompanied by a comprehensive and carefully prepared index. The mechanical execution of the book leaves little to be desired, the work having been printed by the De Vinne Press of New York on specially manufactured paper, and from large and clear type. The edition is limited to 500 copies. The publishers are C. A. Brewster & Co., of Troy, N. Y. (Price, \$2.00.)

The sixth volume to be published by Fords, Howard, & Hulbert, of New York, in their *Nuggets* series, is a collection of passages gathered from five of the most celebrated authors of the post-Elizabethan period: Dr. Thomas Fuller, church

historian, wit, and moralist, said by Coleridge to have been incomparably the most sensible and least prejudiced of the many great men of his age; Bishop Joseph Hall, the famous divine; John Selden, lawyer and parliamentarian; George Herbert, scholar, preacher, and poet; and lastly Izaak Walton, philosopher and fisherman. From the antique flavor and oddity of the utterances collected in the volume, the little book bears the title of *Quaint Nuggets*. A portrait of Fuller adorns the title-page. The compiler is Eveline Warner Brainerd. (Pages, 136. Price, 45c.)

The first volume of the *Studi Glottologici Italiani*, edited by Giacomo de Gregorio, professor of comparative history of the classical and Neo-Latin tongues in the University of Palermo, and issued on the occasion of the twelfth International Congress of Orientalists, contains articles by Prof. De Gregorio on the etymology and lexicography of the Romance languages, with special reference to the Sicilian dialects, and also contributions by R. Sabbadini, M. La Via, and M. Niedermann on cognate subjects. (Price, L. 10. Turin: Ermanno Loescher.)

### HOMO ALALUS.

Rude forefather of Nature's Masterpiece,  
 Progenitor of man, tho' not yet man,  
 How oft, in fancy rapt, through forests wild  
 I've strode beside thee in the noble chase,  
 Or at thy savage meal unbidden sat,  
 Or, mayhaps, couched with thee in murky cave.  
 And oft, too, have I thought—if thou hadst felt,  
 A moment e'en, the meaning of thy past,  
 Or vision got of ages yet unborn,  
 As brutishly thou sought to comprehend  
 The whence of man and his great destiny,  
 A thrill had shot thy rugged frame throughout,  
 And reason's light streamed instant from thine eyes.

L. L. RICE.

NASHVILLE, TENN.

### NOTES.

By an oversight the name of Henry Ridgely Evans, now of the Department of Education at Washington and a contributor to *The Cosmopolitan Magazine*, was omitted in the last two numbers of *The Open Court* as the joint contributor to the book entitled *Magic*, published by Munn & Co., of New York. Mr. Evans wrote the introduction to the work, and also the chapters on mental magic and shadowgraphy. The quotations on pages 426 and 427 were also from his pen.

A philosophical society, incorporated under the laws of the State of Michigan has been organized in Detroit by Mr. Louis J. Rosenberg, an attorney of that city. Its purpose is to encourage the study of philosophy; and lectures and papers by professors from the University of Michigan and by many other prominent thinkers have been announced.

THE  
HISTORY OF THE DEVIL  
AND  
THE IDEA OF EVIL

FROM THE EARLIEST TIME TO THE PRESENT DAY

BY  
DR. PAUL CARUS

With numerous illustrations from ancient and modern demonology, as recorded on monuments and in literature.

Offering a complete comparative history and analysis of the idea of evil, with philosophical, ethical, and religious comments.

The author reviews the broad field of the conceptions of evil among the various nations of the earth. Beginning with prehistoric Devil-worship and the adoration of demon gods and monster divinities, he surveys the beliefs of the Sumero-Accadians, the Persians, the Jews, the Brahmans, the Buddhists, the early Christians, and the Teutonic nations. He then passes to the demonology of the Middle Ages, the Reformation, and modern times, discussing the Inquisition, witchcraft, and the history of the Devil in verse and fable. The philosophical treatment of the subject is comparatively brief, but the salient points are clearly indicated in every connexion. The pictures are numerous, and will aid considerably the reader's comprehension.

No expense has been spared to make the book exemplary in every respect.

---

Printed in two colors from large type on fine paper.

Bound in cloth, illuminated with cover stamp from Dore. Five hundred 8vo pages, with 311 illustrations in black and tint. Price, when published, \$6.00. READY IN AUGUST.

---

SPECIAL ADVANCE OFFER

*All orders received from readers in the United States, Canada, and Mexico, before the date of going to press (August 15th), will be filled at the special price of \$4.00 per copy, C. O. D., or cash with order.*

*Foreign orders accompanied by remittance and mailed before date of going to press, though arriving after, will be accepted at the special rate.*

---

CHICAGO  
THE OPEN COURT PUBLISHING COMPANY

324 DEARBORN STREET

LONDON

KEGAN PAUL, TRENCH, TRÜBNER & Co. (Ltd.), Paternoster House, Charing Cross Road

**MAP AND TIME TABLE**

WILL SHOW  
WHY  
WE GIVE YOU

**QUICK SERVICE AND POLITE ATTENTION**

**ON THE MONON ROUTE**

CHICAGO, INDIANAPOLIS & LOUISVILLE RAILWAY

FRANK J. REED, Gen. Pass. Agent.  
CHAS. H. ROCKWELL, Traf. Mgr.  
W. H. McDOEL, Pres. and Gen. Mgr.  
CHICAGO.

AMERICA'S MOST POPULAR RAILROAD

**CHICAGO**  
AND  
**ALTON**  
RAILROAD.

PERFECT PASSENGER SERVICE BETWEEN

**CHICAGO AND KANSAS CITY,  
CHICAGO AND ST. LOUIS,  
CHICAGO AND PEORIA,  
ST. LOUIS AND KANSAS CITY.**

Through Pullman service between Chicago and

**HOT SPRINGS, Ark., DENVER, Colo.,  
TEXAS, FLORIDA, UTAH,  
CALIFORNIA AND OREGON.**

If you are contemplating a trip, any portion of which can be made over the Chicago & Alton, it will pay you to write to the undersigned for maps, pamphlets, rates, time-tables, etc.

**GEO. J. CHARLTON,**  
General Passenger and Ticket Agent,  
CHICAGO, ILLINOIS.

A NEW BOOK BY THE DIRECTOR OF THE UNITED STATES BUREAU OF AMERICAN ETHNOLOGY AND SOMETIME DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY.

## TRUTH AND ERROR

OR

### THE SCIENCE OF INTELLECTION

By J. W. POWELL.

Pages, 423. Cloth, gilt top, \$1.75 (7s. 6d.).

Important to Psychologists and Students of the Philosophy of Science.

*A Highly Original Work on Psychology, dealing largely with Epistemology.*

"Major Powell is a versatile, brilliant, patient, and earnest thinker and writer. His volume is burdened with a costly and splendid array of facts. And while this is all true, yet this is not a title of the value of the volume. Its intrinsic value is in the systematisation of modern thought. . . . There is a charm in his directness. No qualification, no ambiguity, no affection. 'I hold,' 'I deny,' ring like the strokes of hammer on brazen casque."—*The Washington Post*.

**THE OPEN COURT PUBLISHING CO.,** CHICAGO, 324 Dearborn St.  
LONDON; Kegan Paul, Trench, Trübner & Co.

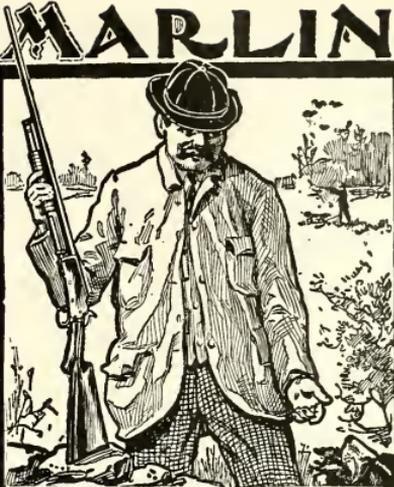
# The Soul of Man

An Investigation of the  
Facts of Physiological  
and Experimental Psy-  
chology. By DR. PAUL  
CARUS . . . . .

Second Edition. Just Published.

With an Appendix on  
the latest researches in  
Physiology. 182 Dia-  
grams. Pp., 482. Price,  
Cloth, \$1.50 (6s.) net.

The Open Court Pub. Co., Chicago



**MARLIN**  
**REPEATING**  
**SHOT GUNS**

For Trap or Field Shooting, combine the elegance of outline, perfection of balance, ease of taking apart and quality of finish of the best double guns with the superiority in sighting and shooting of the single barrel, and also possess the rapidity of fire and magazine capacity of **MARLIN REPEATING RIFLES**. 120-page catalog of arms and ammunition, colored cover by Osthaus, mailed for 3 stamps.

**MARLIN FIRE ARMS CO., NEW HAVEN, CT.**

# A Psychology for Beginners

AN OUTLINE SKETCH.

By **HIRAM M. STANLEY**,

Member of the American Psychological Association, author of the "Evolutionary Psychology of Feeling" and "Essays on Literary Art." Pages, 44. Boards. Price, 40 cents (2s.)

## A Terse Statement of Psychological Facts

Designed to give to beginners a direct insight into the subject and familiarity with its methods. The student is told as little as possible, but is allowed to learn for himself by simple observation and experiment.

"A capital little primer . . . printed in bold type . . . with twenty-six blank pages of stout paper for the scholar's notes and exercises . . . Treats the most elementary principles of psychology . . . in the semi-conversational style that suggests the practised teacher." *Literary World*, London.

"Invaluable to teachers."—*Canadian Teacher*.

**THE OPEN COURT PUBLISHING CO.,** CHICAGO, 324 Dearborn St.  
LONDON: Kegan Paul, Trench, Trübner & Co., Ltd.

# L'HUMANITÉ NOUVELLE

REVUE INTERNATIONALE ILLUSTRÉE

SCIENCES, LETTRES ET ARTS

Paraît mensuellement en un volume in-8° d'au moins 128 pages.

**La Revue ne publie que de l'inédit.**

DIRECTEUR SCIENTIFIQUE :  
A. HAMON.

DIRECTEUR LITTÉRAIRE :  
V. EMILE-MICHELET

---

## L'HUMANITÉ NOUVELLE

est la moins coûteuse, la mieux faite, la plus complète et la plus indépendante de toutes les revues.

## L'HUMANITÉ NOUVELLE

traite de : Sciences mathématiques, physiques, géographiques, biologiques ; Lettres, Arts, Sociologie, Économique, Politique, Philosophie, Religion.

## L'HUMANITÉ NOUVELLE

publie des articles dus aux meilleurs auteurs de tous les pays.

Dans chaque numéro il y a des chroniques littéraire, artistique, théâtrale, politique, une revue des livres et revues de toutes les langues et de tous sujets.

Aucune Revue ne peut rivaliser avec *L'Humanité Nouvelle*.  
Envoi d'un numéro spécimen gratis sur demande.

---

### ABONNEMENTS ;

Union postale : un an 18 fr. ; 6 mois 9 fr. 50 ; le N° : 1.75.

France et Belgique : un an 15 fr. ; 6 mois 8 fr. ; le N° : 1.50.

---

LIBRAIRIE C. REINWALD.

**SCHLEICHER FRÈRES, Éditeurs.**

VI. PARIS, 15 RUE DES SAINTS-PÈRES. VI.

# Three Recent Publications

---

## A WORK ON PSYCHOLOGY.

**THE EVOLUTION OF GENERAL IDEAS.** By *Th. Ribot*, Professor in the Collège de France. Authorised translation from the French by Frances A. Welby. Pp., xi, 231. Price, cloth, \$1.25 (6s. 6d.).

"All that he writes is lucid and suggestive, and the course of lectures here translated is a characteristic contribution to psychology."—*Nature*.

"An interesting and instructive essay, and well within the capacity of the general reader."—*The Dial*.

## A CONTRIBUTION TO SOCIOLOGY.

**SCIENCE AND FAITH, OR MAN AS AN ANIMAL AND MAN AS A MEMBER OF SOCIETY.** WITH A DISCUSSION OF ANIMAL SOCIETIES. By *Dr. Paul Topinard*, Late General Secretary of the Anthropological Society of Paris, and Sometime Professor in the School of Anthropology. Pp., 361. Price, cloth, gilt top, \$1.50 (7s. 6d.).

"A most interesting volume."—*Glasgow Herald*

"Stimulating and suggestive."—*The Scotsman*.

"The book is worth reading, whether we are or are not satisfied with its conclusions."—*Nature*.

"An unusually interesting volume . . . suggestive in the highest degree . . . worth the time of any man to read from beginning to end."—*Times-Herald*.

## A BOOK ON COMPARATIVE FOLK-LORE.

**SOLOMON AND SOLOMONIC LITERATURE.** By *Moncure D. Conway*. Pp., viii, 243. Bound in red cloth. Price, \$1.50 (6s.). Portrays the entire evolution of the Solomonic legend in the history of Judaism, Christianity, Hinduism, Buddhism, and Parseeism, and also in ancient and modern folk-lore, taking up, for example, the legend of Solomon's ring, Solomon's seal, etc., etc.

"A thoughtful, interesting, and scholarly study."—*Pittsburgh Times*.

"Full of curious lore."—*Manchester Guardian*.

"Mr. Conway's book on Solomonic literature is precisely such a work as we should expect from the author of *Sacred Anthology*. The logic is everywhere blazed with the poetry of Mr. Conway's nature. There are frequent passages of great eloquence."—*Unity*.

---

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

LONDON: Kegan Paul, Trench, Trübner & Co.

THE  
BIBLIOTHECA SACRA

FOR JULY, 1900

AN OBERLIN NUMBER

Two half-tone Pictures of President Finney

These represent him at the ages of forty and seventy. The first is from a rare photograph of an oil portrait painted for the well-known philanthropist Anson G. Phelps, of New York City, at the time Dr. Finney was pastor of the Chatham Street church, and is now in the possession of his son, F. Norton Finney, Esq., of Milwaukee, Wisconsin.

---

**Nine Articles by Oberlin Professors**

INAUGURAL ADDRESS.

By *President John Henry Barrows, D.D.*

A STUDY IN THE LIFE OF JESUS.

By the *Rev. Edward Increase Bosworth*, Professor of the New Testament Language and Literature.

THE PRESENT STATUS OF OLD TESTAMENT BIBLICAL THEOLOGY.

By the *Rev. George Stockton Burroughs, Ph. D., D.D., LL.D.*, Professor of the Old Testament Language and Literature.

THE ECONOMIC INTERPRETATION OF THE FALL OF MAN.

By *Thomas Nixon Carver, Ph. D.*, Professor of Economics and Sociology.

BOSSUET; OR, THE MAKING OF A PREACHER.

By the *Rev. Albert Henry Currier, D.D.*, Professor of Sacred Rhetoric and Practical Theology.

THE SIGNIFICANCE OF THE PERSONAL IN THEOLOGY.

By the *Rev. Henry Churchill King, D.D.*, Professor of Theology.

THE CATHOLIC ANTI-REFORMATION IN BOHEMIA.

By the *Rev. Louis Francis Miskovsky*, Principal of the Slavic Department.

PRESIDENT FINNEY AND AN OBERLIN THEOLOGY.

By the *Rev. Albert Temple Swing*, Professor of Church History.

THE LESSON OF THE NEW HYMNALS.

By *Edward Dickinson*, Professor of the History of Music and the Pianoforte.

**Two Articles by Oberlin Alumni**

OBERLIN'S CONTRIBUTION TO ETHICS.

By *Professor W. E. C. Wright*, Olivet, Mich.

LIMITING SALOON TERRITORY. THE MINNEAPOLIS PLAN.

By *Captain Judson N. Cross*, Minneapolis, Minn.

---

**Single number, 75 cents. Yearly subscription, \$3.00**

Write for Sample Pages and Offers to New Subscribers :

THE BIBLIOTHECA SACRA CO.,  
OBERLIN, OHIO, U. S. A.

# A Perfect Pen

AT A POPULAR PRICE,  
AND THE BEST  
PEN AT ANY PRICE.

YOUR CHOICE OF THESE

**\$3.00**

Laughlin Fountain Pens

FOR ONLY

**\$1.00**

Try it a Week! If not suited, we buy it back and offer you \$1.10 for it.

A Protable Proposition any way you figure it. Don't miss this opportunity of a life time to secure the best pen made. Hard rubber reservoir holder in four simple parts. Finest quality dlamond point 14k gold pen, and the only positively perfect ink feeding device known to the science of fountain pen making.

"A gift of never ending usefulness and a constant pleasant reminder of the giver."

Any desired flexibility in fine, medium or stub.

One Pen Only to One Address on this SPECIAL SEED-TIME SALE.

By mail, postpaid, upon receipt of \$1. If you desire pen sent by registered mail send 10 cents additional.

Ask your dealer to show you this pen. If he has not or won't get it for you, send his name and your order to us, and receive free of charge one of our Safety Pocket Pen Holders

Address

**LAUGHLIN MFG. CO.,**

158 Laughlin Block,

DETROIT, MICH.



## \$13.00 ESCANABA AND RETURN

FROM CHICAGO—Meals and Berth included. 4 days trip on the water stopping en route and giving the passengers an opportunity to see the following cities—Milwaukee, Racine, Sheboygan, Manitowoc, Kewaunee, Algoma, Sturgeon Bay, Marinette, Menominee, Green Bay City & other points of interest to tourists. Leave Chicago 8:00 P. M. Wednesday & Saturday via



State Room and Dining Service Finest on the Great Lakes.

For complete information address

R. C. DAVIS, G.P.A., Foot Michigan Ave., CHICAGO, ILL.

## The Psychology of Reasoning

BASED ON EXPERIMENTAL RESEARCHES IN HYPNOTISM. By ALFRED BINET, Doctor of Science, Laureate of the Institute (Académie des Sciences and Académie des Sciences Morales), Director of the Laboratory of Physiological Psychology in the Sorbonne (Hautes Études).

"Clear and solid, and deserves careful reading two or three times over."—Francis Galton.

"*The Psychology of Reasoning* is a good specimen of those eminently lucid and clear scientific treatises that Frenchmen know so well how to turn out."

Translated from the recent second edition by Adam Gowans Whyte, B. Sc. Pages, 193. Index. Cloth, with gilt top, 75 cents (3s. 6d.).

The Open Court Pub. Co., Chicago.

324 Dearborn Street.

LONDON :

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

# RECENTLY PUBLISHED

A BRIEF

# HISTORY OF MATHEMATICS

AN AUTHORISED TRANSLATION OF

DR. KARL FINK'S GESCHICHTE DER  
ELEMENTAR-MATHEMATIK

BY

**WOOSTER WOODRUFF BEMAN**

Professor of Mathematics in the University  
of Michigan

AND

**DAVID EUGENE SMITH**

Principal of the State Normal School at  
Brookport, N. Y.

*With biographical notes and full index.*

*Pages, 333+xii. Cl., \$1.50 (5s. 6d.) net.*

---

Of all the recent compendia of the history of mathematics, this work by Professor Fink is the most systematic. It is not a book of anecdotes, nor one of biography; it is a clear and brief statement of the *facts* of mathematical history.

The author systematically traces the development of the science of mathematics from the earliest period to the present; he considers the development of algebra from the *hau*-reckoning of the Egyptians to the theory of functions of the nineteenth century; he reviews geometry from the primitive ideas of the Babylonians to the projective and differential geometry and the science of  $n$ -dimensional space; and finally he traces the history of trigonometry from the rude ideas of Ahmes to the projective formulæ of recent times.

An invaluable work for teachers of mathematics.

"Dr. Fink's work is the most systematic attempt yet made to present a compendious history of mathematics."—*The Outlook*.

"This book is the best that has appeared in English. It should find a place in the library of every teacher of mathematics. It is a hopeful sign that there is an awakening of interest in the history of mathematics."—*The Inland Educator*.

---

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

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

# Mathematical Books

**On the Study and Difficulties of Mathematics.** By *Augustus De Morgan*. With Portrait of De Morgan, Index, and Bibliographies of Modern Works on Algebra, the Philosophy of Mathematics, Pangeometry, etc. Pp. viii, 288. Red Cloth, \$1.25 (4s. 6d.) net.

"The book is worthy of a place in every teacher's and student's library. It is full of sound pedagogy."—*Inland Educator*.

"As a sensible and lucid commentary on the principles of arithmetic, algebra, geometry, and trigonometry, it cannot easily be surpassed."—*Prof. Joseph E. Trevor*, Ithaca, N. Y.

"The point of view is unusual; we are confronted by a genius, who, like his kind, shows little heed for customary conventions. The 'shaking up' which this little work will give to the young teacher, the stimulus and implied criticism it can furnish to the more experienced, make its possession most desirable. This 'Mathematical Series' must be held one of the most notable achievements of *The Open Court*."—*Michigan Alumnus*, April, '99.

**Lectures on Elementary Mathematics.** By *Joseph Louis Lagrange*. With Portrait of Lagrange, Notes, Biographical Sketch, Marginal Analyses, Index, etc. Red Cloth. Pp. 172. Price, \$1.00 (4s. 6d.) net.

"When the next book of this series is out, send it along. It is the most valuable series published. I would not sell these books for a good many dollars. You are doing a great work for mathematical teachers."—*William Bellis*, Central Michigan Normal.

"The presentations of even elementary topics by master minds are always instructive, and in this case unusually attractive as well. Historical and methodological remarks abound, and are so woven together with the mathematical material proper, and the whole is so vivified by the clear and almost chatty style of the author as to give the lectures a charm for the reader not often to be found in mathematical works. The translation is well done, the publishers have presented it in appropriate form, and the work deserves a wide circle of readers."—*Bulletin American Mathematical Society*.

"Probably never equalled in the peculiar quality of leading the mind to see and enjoy the beauty as well as the accuracy of the science."—*Chicago Chronicle*.

**Mathematical Essays and Recreations.** By *Hermann Schubert*, Professor of Mathematics in the Johanneum, Hamburg, Germany. Pages, 149. Cuts, 37. Price, Red Cloth, 75c (3s.) net.

"Professor Schubert expounds with great lucidity, and the translator's work has been excellently done."—*Manchester Guardian*.

"Professor Schubert's *Essays* make delightful reading. They deal, not with the dry side of mathematics, but with the philosophical side of that science on the one hand and its romantic side on the other. They are admirably lucid and simple and answer questions in which every intelligent man is interested."—*Chicago Evening Post*.

**Elementary Illustrations of the Differential and Integral Calculus.** By *Augustus De Morgan*. New reprint edition. With sub-headings and bibliography of English and foreign works on the Calculus. Red Cloth. Price, \$1.00 (4s. 6d.) net.

"The present work may be safely recommended to those students who are anxious to obtain a knowledge of the Calculus which shall be real and abiding."—*The Speaker* (London).

"It aims not at helping students to cram for examinations, but to give a scientific explanation of the rationale of these branches of mathematics. Like all that De Morgan wrote, it is accurate, clear, and philosophic."—*Literary World*.

"It would be difficult to overestimate the value of De Morgan's works and of the importance of rigid accuracy upon which he everywhere insists."—*The Speaker* (London).

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

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

## A CLASSICAL WORK ON CHINA

# THE TRAVELS IN TARTARY, THIBET AND CHINA

Of MM. HUC and GABET

New Edition. From the French. Two Vols. 100 Illustrations. 688 Pages.  
Cloth, \$2.00 (10s.). Handsomely Bound in Oriental Style.

---

**A Truly Fascinating Work.—One of the Most Popular Books of All Times.**

---

### *Read the Following Commendatory Notices:*

"The work made a profound sensation. Although China and the other countries of the Orient have been opened to foreigners in larger measure in recent years, few observers as keen and as well qualified to put their observations in finished form have appeared."—*The Watchman*.

"The book is a classic, and has taken its place as such, and few classics are so interesting. It deserves to be put on the same shelf as Lane's *Modern Egyptians*. These reprints ought to have a large sale. Few books will have more readers than the missionary adventures of Abbé Huc and his no less daring companion."—*The Catholic News*.

"Fools, it is known, dash in where angels fear to tread, and there are also instances of missionaries dashing in where intrepid and experienced travellers fail. Such was the case with MM. Huc and Gabet, the two mild and modest French priests who, fifty years ago, without fuss, steadily made their untortured way from China across Thibet and entered L'hassa with the message of Christianity on their lips. It is true that they were not allowed to stay there as long as they had hoped; but they were in the Forbidden Land and the Sacred City for a sufficient time to gather enough facts to make an interesting and very valuable book, which on its appearance in the forties (both in France and England) fascinated our fathers much in the way that the writings of Nansen and Stanley have fascinated us. To all readers of Mr. Landor's new book who wish to supplement the information concerning the Forbidden Land there given, we can recommend the work of M. Huc. Time cannot mar the interest of his and M. Gabet's daring and successful enterprise."—*The Academy*.

"The descriptions of the perils and difficulties of travel, of the topography and of climatic phenomena, are remarkably simple and vivid. How wonderfully has the Catholic missionary penetrated the least known lands! Rarely well qualified to travel, frequently frail of body and simple of mind, he has, through sheer earnestness of purpose, made his way, where strength, experience, and cunning fail. The Open Court Co. has certainly done well in bringing out an English version of *Travels in Tartary, Thibet, and China* . . . at this time."—PROF. FREDERICK STARR, in *New Unity*.

"One of the most striking books that have ever been written on the East is the one, here reprinted, of the travels of the Jesuit missionaries Gabet and Huc in Tartary, China, and Thibet, over fifty years ago. The modesty as well as the fulness of the narrative strikes the reader with astonishment, in view of the incredible difficulties of the camel journey, the ease with which they were overcome, the abundance and novelty of the information obtained, and the combined picturesqueness, impersonality, and humility of these two accomplished priests."—*The Critic*.

"The interest in the territory treated in this volume is just now immense, on account of the immensity of the partition of China by the governments of Europe."—*Sunday School Library Bulletin*.

"Once one takes up the volumes, it is hard to shake oneself free from the gentle spell of his narrative, and when the last page is turned down and we leave the two kindly priests on their homeward journey, at the boundaries of China, we want to go with them every remaining step of the way, live in their tents, share their scanty handfuls of meal, and enjoy with them a whimsical smile at the dilemmas and adventures of each succeeding day."—*Law List of United Commercial Lawyers*.

---

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

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