

The
OPEN COURT

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

FOUNDED BY EDWARD C. HEGELER

JANUARY, 1930

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VOLUME XLIV NUMBER 884

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THE COSMIC TEETH

BY LAWRENCE PARMLY BROWN

DENTAL concepts are comparatively scarce in the nature mythos, and while the majority of extant tooth-myths have been developed with much confusion and obscurity, a few will be found quite simple and transparent.

The more or less individualized flames of fire are sometimes considered teeth, as suggested by their form as well as their biting and devouring nature; and fiery teeth are sometimes allotted to the sun, which is conceived to have a burning bite, especially in the tropics. Again, the lightning flashes or thunderbolts, which burn or bite in another way, are sometimes recognized as teeth of fire. These concepts appear in some of the most transparent dental myths that have come down to us; and we shall find reasons for concluding that thunderbolts are represented by the dragon's teeth in the obscure myth of Kadmos (and in that of Jason), while the Quiche Vacub-Cakix was conceived with materialized flame-teeth in the most obscure and elaborate of all dental myths.

As the fiery teeth of the sun belong to the day, the cool night was naturally conceived by some as edentulous (toothless), which concept agrees with the ancient idea that the night is older than the day; and we shall find various night figures, human and animal, represented as both aged and edentulous, while others have the crescent moon for a single tooth, a canine, or for two canines. But in a variant view it is an invisible lunar figure that has the visible single tooth or two teeth.

I. *The Lunar Tooth or Teeth*

In all probability the single lunar tooth (as a canine) appears in connection with the single lunar eye in the myth of the Graiai ("Gray-women") or Phorkides ("Daughters-of-Phorkys"), which has come down to us through the Greeks and Romans. The earliest extant allusion to the Graiai or Phorkides is found in the *Theogony* of Hesiod (*circ.* 725 B. C.), where it is said that the two daughters of Phorkys and Kētō were called the Graiai because they were gray (i.e., gray-haired) from their birth; one of them being "Pephrēdō, handsomely-clad," and the other "Enyō, saffron-veiled." And Hesiod adds that they were sisters of the three Gorgones, who "dwell beyond the famous ocean, in the most remote quarter nightward" (*Theog.*, 270-275). But here we have nothing of the tooth and eye.

The two gray and aged females in the original myth probably represented either the rising moon and setting moon, or that luminary as successively crescent and gibbous; in either case the dwelling place of the Graiai being the celestial sea of night rather an island in the terrestrial ocean. The names Pephrēdō (or Pemphrēdō) and Enyō (also a goddess of war, in Homer) are of very uncertain meaning; but the garment of the former probably was adorned with stars, while the saffron or yellow veil of the latter is appropriate enough for a lunar figure. Like the sun and the stars, the moon is mythically born from the eastern side of the earth-surrounding ocean of the ancients, or from some huge fish or sea-monster; and the name Kētō seems to be a feminine form of *ketos* (any large fish such as a porpoise or whale), while Phorkys is an ancient sea-god of Asia Minor, where the myth of the Graiai doubtless originated. Probably because of the familiarity of the western ocean to the Mediterranean peoples, Phorkys and Kētō are also the parents of the Hesperian dragon in the account followed by Hesiod (333), who gives the western quarter of the ocean as the dwelling place of the Gorgones.

The next extant allusion to the Phorkides (*circ.* 470 B. C.) is in the *Prometheus Bound* of Aeschylus, where they are not called Graiai (790-797). According to Aeschylus there were three of these aged sisters, whose names he does not give; and he says that they dwell with the Gorgones and other monsters across the sea, far to the east, on the plains of Kisthene (doubtless in Asia Minor,

where two places of that name were located). Aeschylus describes the Phorkides as

“.....aged maidens,
 Three, swan-shaped, possessing in common but one eye
 And one tooth,¹ upon whom the sun never looks
 With his rays, or the nocturnal moon.”

The three Phorkides of Aeschylus and later writers appear to represent the three forms of the moon recognized by the ancients as belonging to the eastern, the central (overhead) and the western divisions of its path through the heaven; the sun also sometimes being given three forms in these stations (See the present writer's "*Cosmic Transmutations*," in the *Open Court*, Vol. XXXIV, p. 293). Again, some personifications of the night and the day, as well as solar and lunar figures, have three eyes, or three heads, or three faces; and thus while the Hindu moon-god Chandra has three eyes, Horace (*Carm.* III, xxii, 4) and Ovid (*Met.* VII, 94) speak of "*Diana triformis*," and Ausonius says that "virgin Diana has three faces" (*Griphus Tenarii Numeri*, 18).

The primary suggestion for the swan-shape of the Phorkides in Aeschylus is probably found in a fanciful resemblance of the curved neck of the swan to the crescent moon and the bent body of aged persons: and swans are also gray or white and swim on the terrestrial waters, as the gray-haired Phorkides in one view float on the celestial sea. The statement that neither the sun or moon ever look upon the Phorkides appears to have been derived from some lost myth according to which these lunar figures dwelt in the depths of the celestial sea of night, which some erroneously supposed to be the terrestrial sea where Phorkys dwelt on the coast of Asia Minor.

The further elaboration of the myth is thus set forth by Apollodorus (first or second century A. D.), who gives Deinō as the name of the third sister: "The three had but one eye and one tooth, and these they passed each to the other in turn. Perseus took possession of their eye and tooth, which they asked him to return; but

¹ There is no apparent connection between the lunar single tooth, the *monodous* of Aeschylus, and the several *monodonta* or one-toothed individuals mentioned by ancient authors, such as Pyrrhus, king of Epirus (Plutarch, *Vit. Pyr.* 4), and a son of Prusius II of Bithynia (Pliny, *H. N.*, VII, 16). They probably had teeth that appeared to form a single bone in one jaw or both jaws, these teeth perhaps being of square form, close set and partially worn down, and perhaps also encrusted with tartar.

he said he would not unless they showed him the way to the nymphs"; and when they had done that, he returned the tooth and the eye (*Bibliothēke*, II, iv. 2). Perseus is generally recognized



GEOFFROY WITH THE GREAT TOOTH.

From a Spanish version of the *History of Melusine*, 1489, in the British Museum).

as a solar figure, and his seizure of the eye and tooth perhaps relates to the monthly disappearance and return of the moon; but according to Hyginus (*Poet. Astr.* II, 12), Perseus cast both eye and tooth into Lake Triton, which seems to be put for the western ocean into which the moon goes daily. In the true mythic view, however, the lunar tooth and eye do not exist at the same time, and therefore both could not have been seized by Perseus. This may have been recognized by Ovid, who speaks of the eye alone as used by the two daughters of Phorcys (Phorkys) and stolen by Perseus when one of the sisters was handing it to the other, the supposition evidently being that neither then could see (*Met.* IV, 764-766). The scene is engraved on an Etruscan bronze mirror from Palestrina, where we have the only generally recognized ancient representation of the Graiai, two of whom are there shown and named in a group with Perseus and Minerva. According to the *Bulletin Épigraihique* (1884) this representation shows Enie (Enyō) with an eye in one hand and a mirror in the other, while Pherse (Perseus) puts forth his right hand to seize the eye, "at the same time taking possession of the tooth which Pemphetru (Pemphrēdō or Pephredō) presents to him" (Vol. IV, p. 152); but it is possible that only the eye is figured on this Etruscan mirror. In a copy of it published in the *Monumenti Inediti: Istituto di Corrispondenza Archeologica* (1873, Vol. IX, plate 56, No. 2), the tooth does not appear, and even the eye is somewhat uncertain; but it is there according to the description in the *Annales* of the Institute (Vol. XLV, p. 127)².

In classic mythology the lunar tooth appears to be found only in the Graiai myth; but there are reasons for suspecting that the single large protruding canine of Geoffroy of the Great Tooth originally represented the crescent moon, while his mother, Melusine

² Further information regarding the Graiai and Gorgones will be found in the long articles devoted to them in Roscher's *Ausführliches Lexicon der Griechischen und Römischen Mythologie*, where we learn that the Graiai are generally interpreted by modern scholars as gray clouds, with their tooth as the lightning and their eye as the sun or moon, while the Gorgones are often recognized as storm figures. But it is not improbable that the Gorgones (females) as well as the Graiai were originally lunar; for while the later Greeks and Romans speak of three Gorgones, Homer knew only one Gorgo, whose frightful head was figured on the aegis of Athena (*Illiad*, V, 741, etc.) and an Orphic poem referred to the moon as Gorgonian, "because of the face in it" (Clemens Alexandrinus, *Strom.*, V, 8). It therefore seems that the four huge canine teeth of the more ancient Gorgon faces were depicted simply to enhance their frightfulness, while the original Gorgon head represented the full or gibbous moon with the face in it.

of Lusignan, had the character of the underworld sea-monster who gives birth to the moon. Their fabulous story is set forth in the old French *Histoire de Melusine* (fourteenth century), according to which Melusine was changed periodically into a creature half fish and half woman, while Geoffroy was born with his great tooth, just as the Graiai were born gray (and the moon is born each month with its single tooth). In the early English translation of the *Histoire de Melusine* (circ. 1500), Geffray (Geoffroy) is described as a man "which at his birth brought in his mouthe a grete and long toth, that apyered without [i.e., protruding from his mouth] an ench long and more, and therefore men added to his propre name Geffray with the grete toth" (Ch. XIX, fol. 61). It is probable that the epithet originated in a misunderstanding of some colloquial phrase designating this redoubtable and ruthless warrior as figuratively "long-toothed" (i.e., having extraordinary destructive or biting power); and the same may be said of most of the other warriors who are declared to have been born with teeth, such as M. Curius Dentatus (Pliny, *H. N.*, VII, 16), for the cognomen Dentatus means simply "Toothed." But human beings are occasionally born with a tooth or teeth.

One of the most ancient and wide-spread concepts of mythology is that of the crescent moon as the two united horns of an invisible animal, and we still speak of the horns of the crescent moon; but it seems that these horns were conceived by some as two teeth. In Egyptian mythology there are "two divine envoys" (perhaps for the sun and moon), the name of one of them being Betti, "He of the two teeth (or two horns)," according to Budge (*Book of the Dead*, Theban Recension, XXXI, 3). An elaborately ornamented moon amulet which the modern Jew of Palestine hangs about the neck of his horse consists of the two tusks of a wild boar so mounted that their points represent the horns of the crescent moon (S. Seligmann, 1910, *Der böse Blick und Verwandtes*, p. 116).³

³ The moon is invoked in many European toothache charms, with various applications of the number three (L. Kanner, 1928, *Folklore of the Teeth*, pp. 155-157). To insure healthy dental organs; the Ukrainians stop at the first sight of each new moon, pray three paternosters and spit three times backward over the left shoulder; and others suppose that he who first sees the new moon will have a set of healthy teeth (*ibid.*, p. 67). This association of healthy teeth with the new moon doubtless originated in the ancient belief that all things grow or increase while the moon waxes and decrease or decay while it wanes, whence a German cure for toothache and other pains is to look toward the waning moon and say, "As the moon decreases, so may my pains decrease also." (J. G. Frazer, *Adonis, Attis, Osiris*, Ch. IX, ed. 1907, p. 377).

Some of the Greeks, Romans, Hebrews and others, who knew little of the elephant, referred to its tusks as horns; and while there seems to be no evidence that any one-horned animal (monoceros or unicorn) had a lunar character, we do find one of the two tusks (upper central teeth) of an elephant broken off, leaving the animal with a single tusk, in the case of the Hindu Ganesa, who appears to have been a figure of the moon-lit night with his remaining tusk for the lunar crescent. Thus Ganesa ("Lord of the host of Ganas," inferior divinities, perhaps originally stars) is conceived as a short fat man of yellow color, with the head of an elephant, one of his tusks being broken off close to his mouth, whence he is called Eka-danta or Eka-danshtra ("Single tusked"). He is sometimes represented with three eyes (for the gibbous moon in its three stations), and sometimes also with four or more arms (for the cardinal points or quarters of the universe). He is the Hindu God of Wisdom (as probably suggested by the ancient Oriental belief in the influence of the moon on the minds of men and beasts); and he is generally considered a son of Siva, but there is some reason for supposing that the two gods were originally identical. Thus Siva was sometimes represented with three eyes, which serve to identify him with the moon-lit night; and he is called Ganesa in the ancient *Mahabharata* (Ganesa the God of Wisdom being mentioned only in the Introduction, a comparatively late addition to this work).

In the *Puranas* and other later Hindu books we find several variant and highly fanciful accounts of how Ganesa obtained his elephant-head and how one of his tusks was broken—the left one according to some legends and representations, but the right, according to others. In the *Siva Purana* it is said that the missing tusk had been broken off before the elephant-head had been put in the place of the original human head of Ganesa; but according to the generally received legend (as in the *Brahma Vaivartha Purana*), Parusu-rama broke off the tusk with his ax when he forcibly entered the apartment of the sleeping Siva (for the night sky), which was guarded by Ganesa (here seemingly for the moon).⁴

The so-called white elephant (which is really yellow, like Ganesa) was recognized as a symbol of wisdom by the Buddhists, some of

⁴ For lengthy considerations of the Ganesa legends and many illustrations of the god, see T. A. Gopinatha Rao, 1914, *Elements of Hindu Iconography*, Vol. I, Part I, pp. 35-67, and H. K. Sastri, 1916, *South Indian Images of Gods and Goddesses*, pp. 165-174.

whom taught that Gautama Buddha descended from heaven in the form of a white elephant, with six tusks, to be born of the virgin Maya (*Buddha-karita of Asvaghosha*, I, 20, in *Sacred Books of the East*, Vol. XLIX). Among the Siamese Buddhists this fabulous animal is known as "the king of elephants" and "the elephant of six defenses," who is named Chatthan or Chaddanta; the shores of a lake of the same name in the Himalayas being his reputed dwelling place (E. Young, 1898, *Kingdom of the Yellow Robe*, p. 396). In view of the probable lunar character of this elephant, it is a plausible conjecture that his six tusks originally belonged to the six divisions or stations of the whole zodiac path, three of which are above and three below the earth at any one time.

The tusks of elephants, boars and other animals grow continually in length and thickness, while the waxing moon (in its first quarter a tooth or two teeth) grows in thickness only. Moreover, it was generally held by the ancients (including Aristotle, *De Gen. An.*, II, 6) that a human being's teeth continue to grow during his whole life (an erroneous belief, first opposed by the anatomist Eustachius in the sixteenth century, *Libellus de Dentibus*, cap. xxiii); and it is not improbable that in the growth of the lunar teeth we have the original suggestion for an old Jewish legend of the Biblical Og, King of Bashan. According to the *Talmud*, the gigantic Og (as a lunar figure?) tore up a great mountain (for the night sky?) and carried it on his head, intending to throw it on the camp of the Israelites; but God caused certain insects (for the stars?) to dig into this mountain, so it fell about Og's neck, and at the same time his teeth on both sides of his jaw became "distended" or enlarged to such an extent that he could not throw off the mountain and consequently was shortly slain by Moses (as a solar figure?). In confirmation of this account, it was taught that *shibarta* ("break") should be read *shirbabta* ("distend") in Psalm III, 8, "The teeth of the wicked dost thou [God] break" (*Berakoth*, fol. 54b; the same revised reading appearing in *Sota*, 12b, and *Meqillah*, 15b. For a slightly different version of the Og legend, see *Targum Ben-Uzziel* on Numbers XXI, 33, and compare S. Baring-Gould, *Legends of Patriarchs and Prophets*, XXII, 12).

Tooth symbolism had an important place in the mythology of the native races of Mexico and Central America, who represented many of their deities with teeth, or clearly indicated the partially

or wholly edentulous condition of old age by the manner of picturing the mouth.

It is probable that the Mexicans originally indicated the wholly edentulous condition of their aged deities by a marked contraction of the corner of the mouth (with the face in profile); this contraction in extant pictures often having the appearance of a short rounded tooth projecting from the upper jaw, as in a figure of the moon god Tecciztecatl in the *Codex Fejérváry-Mayer*, sheet 24, and in numerous figures of other aged deities (see especially E. Selar's *Codex Vaticanus B*, Elucidation, p. 70, fig. 256; p. 190, fig. 397, etc.). In fact, some of the later Mexican and Maya artists seem to have supposed that a tooth was intended, and therefore pictured one instead of the mouth contraction. Thus in the *Codex Vaticanus B* we find Tecciztecatl as an old, bent and white-haired



THE MAYA GOD D.
(*Dresden Codex*, sheet 46).



THE MEXICAN MOON-GOD
TECCIZTECATL.
(*Codex Fejérváry-Mayer*,
sheet 24).

man who rises with difficulty from his chair; and he seems to have a tusk-like upper tooth at the corner of his mouth, the face being in profile (sheet 54; compare sheet 30).

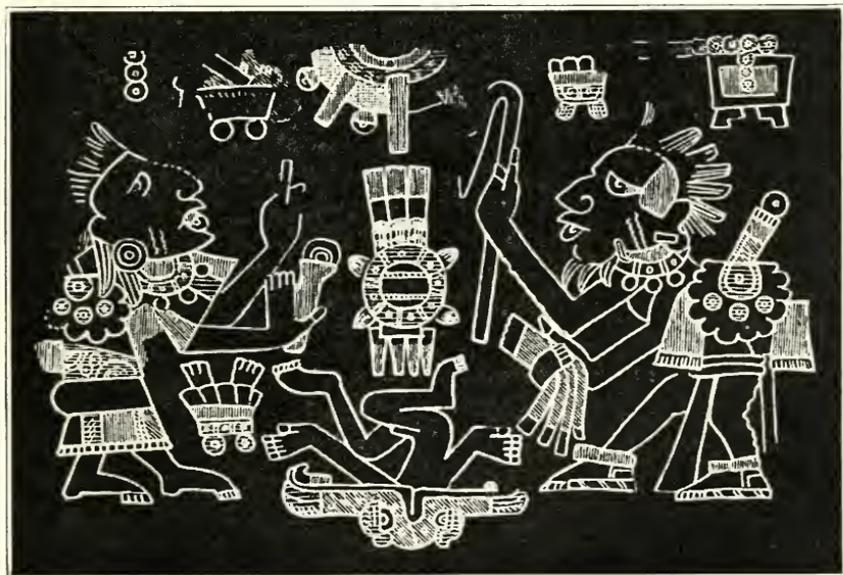
The Mexican Tecciztecatl equates with the Maya God D of the alphabetical pantheon of Paul Schellhas. God D is generally represented with a prominent aquiline nose, perhaps originally for the

gibbous moon. His name is not definitely known, but Schellhas calls him "the Moon-and Night-God" and describes him as generally "pictured in the form of an old man with an aged face and sunken toothless mouth," who frequently appears with a head ornament in which is the sign *akbal* ("darkness," "night"). This sign also appears in his hieroglyph, placed in front of his head and surrounded by dots for stars; and "his head appears in reduced cursive form as a sign of the moon." (Schellhas, "Representations of Deities of the Maya Manuscripts," in *Papers of the Peabody Museum*, 1904, Vol. IV, No. 1, p. 22). According to H. J. Spinden, in a lengthy account of God D, "The corners of his mouth are drawn back and surrounded by deep wrinkles. Sometimes a single tooth projects forward from the front part of the upper jaw [with the face in profile], and when this is absent a stub tooth may appear in the lower jaw. But as often as not both jaws are toothless" (*A Study of Maya Art; Memoirs of the Peabody Museum*, 1913, Vol. VI, p. 69).

It is quite probable that the lower "stub tooth" resulted from a misunderstanding of some of the crude representations of lip contraction; but no such origin can reasonably be assumed for the projecting upper front tooth. Spinden refers to the latter as "a peculiar terraced tooth that is commonly described as filed" (*Ib.*, p. 72), and a similar tooth is sometimes given to God L, "the Old Black God," and to God M, "the Black God with the Red Lips," and to Goddess O, "with the features of an old woman"—all three being edentulous (Schellhas, *op. cit.*, pp. 35, 38). This "terraced tooth" is figured with some variation of form, and may represent a conventionalized compromise between the lunar crescent and an upper incisor tooth as viewed in profile. (See accompanying illustrations).

In the Mexican *Codex Borgia* the aged deities are edentulous with the exception of a very curious U-shaped or staple-like object of large size projecting downward from the front of the upper jaw. It is given to a moon goddess on sheet 65, No. 6; to the goddess Xochiquetzal, the divine mother, on sheet 9; to Tonacateculti ("Lord-of-our-subsistence"), probably the heaven-father, on sheets 9 and 61, and to a god and goddess, perhaps the celestial father and mother, on sheet 60. L. Spence refers to this staple-like object as a "gobber tooth" (*Gods of Mexico*, pp. 147-308). E. Seler calls

it "a ring-shaped appendage," and says it "is probably a mistaken formation arising from the contracted corners of the mouth of old



MEXICAN DEITIES WITH THE U-TOOTH.
(*Codex Borjia*, sheets 55 and 60).

gods, and in any case in this manuscript is characteristic of old gods" (*Vaticanus B*, p. 130). It is certainly employed in the *Codex Borgia* instead of the mouth contraction which becomes a tooth in other codexes. But nevertheless its large size indicates that it was not originally a tooth, and its peculiar shape suggests that it originally represented the visible ridge of an old person's edentulous upper jaw. Furthermore, it is not impossible that it was secondarily intended as a symbol of the crescent moon, being attached to the upper jaw because the moon is naturally associated with the heaven above.

The crescent moon as an edentulous mandible (lower jaw) quite probably suggested the jaw-bone of an ass which Samson (primarily a solar figure) used as the weapon with which he slew a thousand Philistines, according to the punning account in Judges XV, 15-19. After the slaughter, Samson cast away the jaw-bone in a place that was known, probably from its shape, as the Hill of the Jaw-bone (Ramath-Lehi): and water came out of a hollow place in the hill, corresponding to an empty tooth-socket in the jaw-bone; whereupon Samson drank and was revived. The Septuagint and English translations make the water come from a tooth socket in the jaw-bone (from a molar tooth, according to the Vulgate), which seems to be in accordance with the original mythic concept of the jaw-bone as the lunar crescent, for the moon was often supposed to be the source of dew and rain. De Gubernatis (*Zoological Mythology*, Vol. I, pp. 303-305) compares the Biblical account with the Hindu myth of the slaying of the Vritras (storm figures) by Indra (the sun) with the bones of a horse's head that had belonged to Dadhyach; but practically nothing is known of this obscure myth.

It is also quite probable that the crescent moon was the original mandible of the Japanese Agonashi-Jizo ("Jizo-who-has-no-jaw"), to whom the Buddhists of the Oki Islands pray for the cure of toothache. They had a statue of him without a lower jaw, but it was destroyed when his shrine was burned, and they say that in one of his incarnations he had such a violent toothache in his lower jaw, that he tore it off and threw it away and died. The people of Izumo, on the island of Nippon, also pray to him for the cure of toothache, and when cured go to the sea, a river or any running stream and drop into the water twelve pearls (*nashi*), one for each of the twelve months; believing that the current carries these pearls to Oki across

the sea and that in some mysterious way toothache is thus prevented throughout the year—in connection with which folk-custom we must remember that teeth have been compared to pearls from the most ancient times (See Lafcadio Hearn's delightful *Glimpses of Unfamiliar Japan*, 1895, Vol. II, ch. xxii, pp. 594, 595).

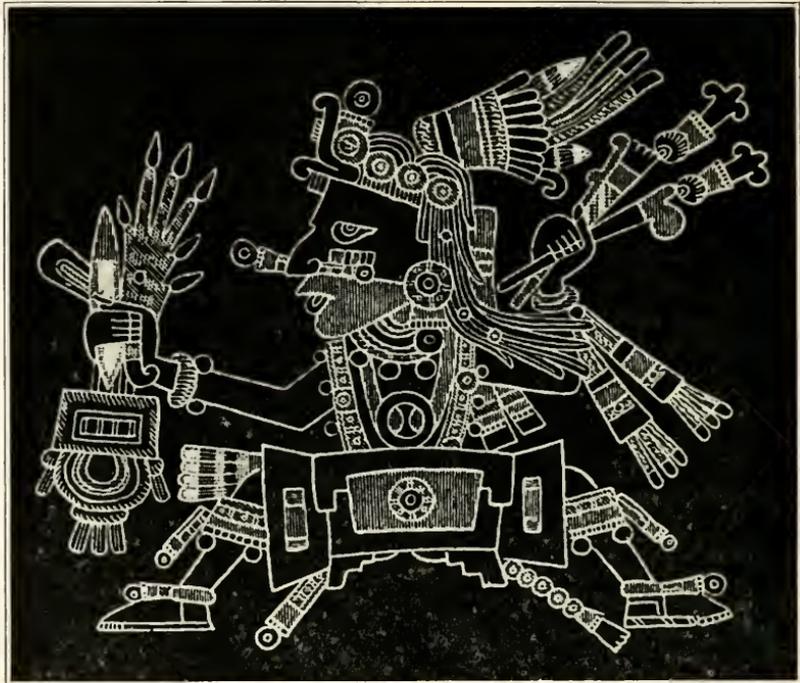
It is generally held that the name Agonashi-Jizo is a popular corruption of Agonaoshi-Jizo ("Jizo-the-healer-of-jaws"); but it is more probable that the god was anciently represented to have torn off his (lunar) jaw because he suffered from toothache and thus came to be invoked for the cure of that malady.

This myth and the epithet Agonashi appear to be peculiar to the Oki Islands and Izumo; but Jizo is one of the most popular Buddhist deities everywhere in Japan, and altogether a rather mysterious figure. His Sanskrit name is said to be Kshingarbha, which means "Born-on-earth" (as an incarnate Buddha). He is the compassionate helper of all in trouble but especially of pregnant women, of children and of travelers; and he is the protector of the souls of children in the place to which they go. As he has no close counterpart elsewhere among the Buddhists, it is a plausible conjecture that he was known to the Japanese in pre-Buddhist times; and it is not impossible that he was originally a moon-god, the helper of travelers at night, and of pregnant women at all times—for the gestation period is often supposed to be regulated by the moon. Hearn speaks of "the white Jizo-Sama," and describes a Japanese painting in which "Jizo comes, all light and sweetness, with a glory moving behind him like a great full moon" (*Op. cit.*, Ch. iii, Vol. I, pp. 51, 56).

Possibly the concept of the jawless Jizo, if not the god himself, was derived from the early Malay settlers in southern Japan, for a similar jawless god seems to have been known in ancient Java. J. Crawfurd (*History of the Indian Archipelago*, 1820, Vol. II, p. 202) tells us that "a monstrous face, without a lower jaw," was sculptured on all the most conspicuous parts of the temples of hewn stone at Brambanan and elsewhere in Java, where the natives stated that it represented Siva—with whom Buddha was identified by the Javanese.⁵

⁵ A head without a lower jaw appears frequently in the Maya codices. E. Forstemann says: "I consider it the sign for fast-days" ("Comment on the Maya Dresden Manuscript," in *Papers of the Peabody Museum*, 1906, Vol. IV, No. 2, p. 109).

In the Hindu *Ramayana* (VII, 28) it is said of the macrocosmic Purusha ("Man"), whose body is the material universe, that "the divisions of time are on his teeth"; while the sun and moon are his eyes, the sky is his body, the ocean is his belly, certain mountains are his bones, etc. The text is obscure and vague, with details that seem to be somewhat inconsistent; but the divisions of time are actually marked in the heavens on the zodiac band alone; those of the year on the solar zodiac and those of the month on the lunar variant



THE MEXICAN TONACATECULTI WITH THE U-TOOTH.
(*Codex Borgia*, sheet 61).

—the latter generally being recognized as more ancient than the former.

The original lunar zodiac of south-western Asia was sometimes divided into 30, sometimes into 31 houses (R. Brown, *Primitive Constellations*, II, pp. 4, 60, etc.), probably as a compromise between the true lunar month of $29\frac{1}{2}$ days and the soli-lunar month of 30

or 30½ days. But the Hindus, and also the Arabs and Chinese, had only 28 houses in their lunar zodiac, no doubt originally for a month of 4 weeks of 7 days each (H. T. Colebrooke, in *Asiatic Researches*, Vol. IX, p. 330 *sq.*). And as there are 28 human teeth in the permanent set without the late-coming wisdom teeth (32 with them, but sometimes 30 without two of them in one jaw or the other, generally the upper), we may reasonably conclude that the teeth of the macrocosmic man in the *Ramayana* belong to the lunar zodiac, with one tooth for each of the daily phases of the moon. This seems to require a human figure with wide open mouth and the zodiac band on the circle of teeth.

Half the zodiac is always beneath the earth; and in the *Bhagavat Purana*, where the macrocosmic figure is a porpoise, the upper jaw is allotted to Agastya (identified with the star Canopus), while the lower jaw is allotted to Yama, the god of the underworld (See translation of Sir W. Jones, in *Asiatic Researches*, Vol. II, p. 402). Thus in one view the palate of the cosmic figure corresponds to the northern celestial hemisphere, for the north is always considered the top of the sphere; and the roof of the mouth (Latin *palatum*, from its resemblance to a shovel, pala) is in Greek *ouranos*, a vault, originally for the vault of the heaven, while Ennius even calls the celestial vault "the palate of heaven (*coeli palatum*)," according to Cicero (*De Nat. Deor.*, II, 18). In the *Vishnu Purana* (II, 12) the two jaws of the macrocosmic porpoise, for unknown reasons, are identified with different gods. But nothing is anywhere said about the teeth of this porpoise, perhaps because the real porpoise has 80 to 96 teeth.

Some of the Egyptians seem to have conceived the macrocosmic animal as a crocodile; for Horapollo says the sunrise was represented in Egypt by the eye of a crocodile, "because it is first seen as that animal rises out of the water" (*Hieroglyph*, I, 65), and according to Achilles Tatius in his romance of *Leukippe and Kleitophon*, the teeth of the crocodile "are said to be identical in number with the days to which God gives light during a year" (IV, IX). But the common varieties of African and Asiatic crocodiles have 66 teeth, 36 above and 30 below, and Aelian (*De An, Nat.* X, 21) connects

the number 60 with the Egyptian crocodile in various ways, stating that it has 60 teeth, 60 vertebrae, etc. Aristotle says that all snakes "have as many ribs as there are days in a month; namely, thirty" (*De Part. An.*, III, 1); but the ribs of snakes are far more numerous and vary in different species, some of which have as many as 300 pairs—whence it is possible that the original statement related to 360 or 365 ribs as identical in number with the days of a year. Some of the medieval anatomists held that there are 365 veins in the human body (*Regimen Sanitatis Salernitanum*, lxxxvi, etc.).

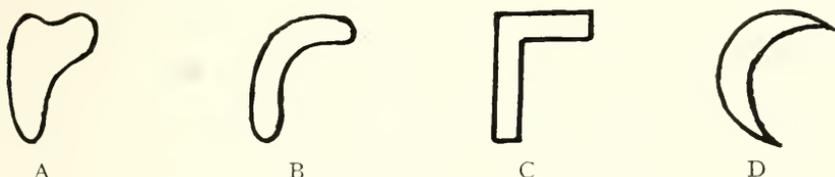
Some of the ancients assigned $10 \times 7 = 70$ years to the normal span of human life (the Biblical "three score and ten years"); the second septenary of that span sometimes being recognized as marked by the eruption of the second or permanent teeth (with the exception of the late-coming wisdom teeth), while the seventh month was accepted for the appearance of the earliest teeth of the temporary or first set (the "milk teeth"): And it was also recognized that the 28 permanent teeth comprise an upper and lower set of 14 each, and are divided by the median line of the face into 4 groups of 7, each of which corresponds in number to the days of a week.

The eruption periods of the temporary and permanent teeth are given with approximate correctness in *De Carnibus* (one of the Hippocratic monographs, in Kühn's edition of Hippocrates, Vol. I, p. 252), where it is stated that the first teeth begin to appear in the seventh month, and (begin to) fall out at the end of seven years; their successors appearing between the ages of seven and fourteen, in which interval also appear the first of the large teeth (our first and second molars), being followed by the wisdom teeth in the fourth septenary (i.e., between the ages of 21 and 28). Aristotle also says that children begin to cut their teeth in the seventh month (*Hist. An.*, VII, 10). But Solon (*circ.* 575 B. C.) erroneously stated that the child produces and casts forth its first teeth during its first seven years (in Clemens Alexandrinus, *Strom.*, VI, 16); Pliny has it that the first teeth are produced in the seventh month and shed about the seventh year (*H. N.*, VII, 37), and similar erroneous statements reappear continually in later writers.

Aulus Gellius has preserved the following erroneous statements from the lost *Hebdomades* of Marcus Varro, the most learned of the Romans (first century B. C.): "The teeth, too," he says, "come forth in the first seven months, seven in each part [*septenos ex*

utraque parte; i.e., seven in each half of each jaw⁶], and fall out in seven years; and the cheek-teeth [our first and second molars] are added, as a rule, in twice seven years" (*Noct. Attic.*, III, X, 12).

Varro's statement to the effect that the temporary teeth comprise seven in each half of each jaw, indicates that some of the ancients supposed that children had the same number of teeth as adults (this number being the lunar $4 \times 7 = 28$, whereas the actual number of the temporary teeth is only 20). And in Europe during the first Christian millenium there seems to have been a widely accepted belief that children as well as adults had 28, 30 or 32 teeth, so when the true number of the temporary teeth began to be recognized, it was fabled that they had been suddenly reduced, more or less miraculously.



TWO VARIANT FORMS OF THE MAYA "TERRACED TOOTH" (B. C.) COMPARED WITH THE CROWN OF A HUMAN UPPER CENTRAL INCISOR, SIDE VIEW (A), AND THE CRESCENT MOON (D). FORM B IS FROM THE *DRESDEN CODEX*, SHEET 46, AND FORM C IS FROM SPINDEN, *MAYA ART*, P. 72, FIG. 91.

According to the French historian Rigord (thirteenth century), all children born after the capture of the cross of Christ by Saladin in 1187 had only 20 or 22 teeth, whereas they had 30 or 32 before that event (*Gesta Philippi Augusti*, ch. LV, trans. by Delaborde, *Oeuvres de Rigord*, I, pp. 82-83). Later writers state that the reduction occurred immediately after the great pestilence or Black Death midway in the fourteenth century, and was caused by it; this reduction, according to some, being from 32 to 22 or 20 (*Continuatio Chronici Guillemi de Nangiaco* [Guillaume de Nangis], *circ.* 1360, edition Geraud, II, p. 217; D'Achery, *Spicilegium*, 1653-1677, edition De la Barre, III, p. 110. See also J. F. C. Hecker, *The*

⁶W. Beloe, 1795, translates: "The teeth, also, seven above and seven below, are produced in the first seven months"; and the rendering of J. C. Rolfe in Loeb's *Classical Library*, is even worse: "seven at a time in each jaw."

Black Death, Babington's trans., IV, p. 21). Others, including the physician Savonarola (1560, *Practica Major*, VI, vii, 1, p. 106) put the reduction from 32 to 22 or 24; the last number being correct for children between the ages of 6 and 12, when the 4 permanent first molars are found in connection with the 20 temporary teeth, or some of them and some of their successors. But according to *The Brut or The Chronicles of England*, 1480, ch. xxviii (translated from the French *Brut d'Engleterre*), children born after the great pestilence had two cheek-teeth less than they had before—doubtless an error for two cheek-teeth less in each half of each jaw, with the normal number of permanent teeth recognized as $4 \times 7 = 28$.

It is quite probable that the allotment of the moon-teeth to the twenty-eight houses of the lunar zodiac suggested a lost Assyrian myth which in turn suggested one of the obscure statements in one of the extant Izdubar Tablets, translated by H. F. Talbot ("Ishtar and Izdubar, being the Sixth Tablet of the Izdubar Series," in *Records of the Past*, 1877, First Series, Vol. IX, *Assyrian Texts*, p. 119). There can be no doubt that Ishtar and Izdubar were originally lunar and solar respectively; but in these tablets, as elsewhere, Ishtar is conceived as the goddess of night and more than the moon, though still with lunar characteristics; and the Izdubar Tablets give us a comparatively late poetical romance based on a very ancient mythological legend. On Tablet VI, Ishtar is conceived as the queen of witchcraft, who has perpetrated seven acts of cruelty and treachery on men and beasts; the allusion to one of these acts being as follows (in Talbot's translation):

Thou hadst a favorite lion, full of vigour:
thou didst pull out his teeth, seven at a time."

As a lion has thirty permanent teeth (16 above and 14 below), it is a plausible conjecture that he was supposed by some to have 2×14 or 4×7 (or 28 in all), which suggests that the above-quoted allusion is to some mythological legend containing a statement to the effect that the teeth of Ishtar's lion were arranged seven on a side, above and below, and that $4 \times 7 = 28$ teeth were extracted. Therefore, with Ishtar recognized as the night-goddess, we may conclude that her harmless lion was originally a solar figure (like the human-headed lion of Assyria), and that he was recognized by some as the macrocosmic animal whose teeth belong to the $4 \times 7 = 28$ days of a

lunar month, with one tooth for each of the daily phases of the moon.

There is also an old English story according to which King John succeedd in forcing a Jew of Bristol to part with a large sum of money only after seven of the Jew's molar teeth had been knocked out, one a day for seven days (Roger of Wendover, *Flores Historiarum*, ad An. 1210, and others following him).

Saint Apollonia ("Of Apollo"), to whom for a thousand years or more prayers have been offered for the cure of toothache, is said to have had all her teeth knocked out as the distinctive feature of her martyrdom (Eusebius, *Hist. Eccl.*, II, xxxiv); and according to one of the later forms of her legend (in the Bollandist *Acta Sanctorum*, Feb. 9; see also W. Bruck, *Das Martyrium der Heiligen Apollonia*, p. 12), her name was originally Dina (for Diana, the Roman moon-goddess), while that of her father was Apollonius (for Apollōn or Apollo, the sun-god). Indeed it is not impossible Eusebius describes Apollonia as an aged virgin of Alexandria, while that the original story was suggested by some lost moon-myth; for Artemis-Diana is a virgin, and various lunar figures are bent and white with age.

According to the Gospel of John, xviii, 22, a certain Jew struck Jesus with the palm of his hand—on the cheek, as the *Sinaitic Palimpsest*, *Syriac Peschito* and *Diatessaron of Tatian* have it. Popular tradition generally identifies this Jew with the Malchos of John xviii, 10; and according to a Sicilian tradition Malchos knocked out all of Christ's teeth with his iron glove, for which offense he was condemned to walk incessantly, till the day of judgment, around a column in the center of a circular room underground (G. Pitre, 1875, *Fiabe, Novelle e Racconti*, no. 120, in his *Biblioteca della Tradizioni popolari Siciliane*; followed by T. F. Crane, 1889, *Italian Popular Tales*, no. 57, p.196). It is not improbable that the circular path around a column originally represented the zodiac with the pole of the ecliptic at its center; in connection with which there is a further probability that Jesus was identified with some lunar figure whose teeth were knocked out by a personification of the storm. This conjecture is supported to some extent by a Venetian variant tradition, according to which the Virgin Mary (for the moon as feminine?) has her teeth knocked out by Malchos (D. G. Bernoni, 1874, *Preghiere popolari Veneziane*, p. 18).

Jesus is generally assumed to have lived about $31\frac{1}{4}$ years according to the Synoptic Gospels, or about $33\frac{1}{4}$ years according to John; a naturally suggested compromise between these extremes being 32 years, corresponding to the full normal number of a human being's permanent teeth. And in Hungary a sufferer from toothache forms around him a circle of 32 birthwort flowers, each of which he chews and spits out in turn, and then says: "Christ was thirty-two years old when he died; I have thirty-two teeth, and have gnawed thirty-two flowers," etc. (H. von Wlislöcki, 1893, *Aus dem Volksleben Magyarern*, p. 128).

POSITIVISM AND HUMANISM

BY EDWIN H. WILSON

THE process of integrating the new world view of science to the religious needs of man is going on continually. One sees it taking place in the ranks of modernism. Men like Harry Emerson Fosdick,¹ Reinhold Neibuhr,² and Russell Henry Stafford³ have made notable concession to the position of the new humanists although eager to retain old symbols. In the Unitarian denomination the issue is more clear cut, with friendly controversy openly engaged in between theists and humanists. In this controversy the terms *Positivism* and *Humanism* are continually confused. The effort has been seemingly to try to heap all the old sins, real or alleged, of Positivism upon the New Humanism and to push the latter scapegoat fashion over the cliff into oblivion. By Positivism I understand these critics to mean the philosophy and cult of Auguste Comte, the French social theorist of the nineteenth century. The repeated confusion of the two terms led me, while I was studying abroad, to supplement the thesis I had already written upon *The Religion of Humanity According to Auguste Comte and Alfred Loisy* with an investigation at first hand of what is left of the movement. This investigation brought me into immediate contact with the present leaders, both in England and France and access to information upon the movement in South America.

My conclusion is that the two movements are so unlike that the effort to use Positivism as a shibboleth for Humanism is not justified on the grounds either of content or of form. To be sure both movements might be said to be religions of life, based upon the things of this life. But their respective ideas of what true

¹ See Harpers for March and April.

² *Does Civilization Need Religion?*

³ *Christian Humanism.*

religion is, what life values are most worthwhile, what constitutes evidence, and how the religion of humanity is best to be stated and propagated, are so unlike that the movements are altogether different plants producing different fruits. The history of the Comtian cult, with its few scattered handfuls of adherents, each group claiming to represent the true Positivism, gives in miniature form a review of the errors of a static church policy and doctrine based upon centralized authority. A comparison of the two movements however, is interesting because it shows rather effectively what humanism is and what it is not.

I shall begin with what I found out about Positivism as it exists today. Within the limits of a milieu itself not large enough to furnish the interstimulation necessary to life, schism and isolation have set up further barriers to increase the inherent sterility of the movement. A few persons drawn by Positivism as a method and stimulated by Comte's social theories have escaped the boundaries of the letter of his cult. The rigid outline of Comte's thought however, has clamped itself onto the mentality of most of his disciples and has served to set up harmful barriers to the free advance of their thought.

Auguste Comte, we must remember, attempted to found a cult without theology or metaphysics but in imitation of the Roman system, with a central ecclesiastical authority, a systematic and relatively static body of doctrine and a uniform method of worship. At one time he even negotiated with the Jesuits in the hope of a rapprochement. Judging Positivism by its results upon those under its influence it seems to serve in just about the same way as does Catholicism, producing minds subservient to authority and the past.

There are a number of Positivist groups surviving. Of these the Liverpool and Rio de Janeiro groups have followed most closely the minute instructions of the founder.* They are the conservatives of the sect. Comte took himself very seriously. He expected to be the high priest of a movement which was about to sweep the world. A few disciples accept his "mastership" in the full sense of the word, taking him as seriously as he took himself. One of the positivists in South America even tried in the manner of Saint Francis to imitate his master Comte, to think His thoughts, perform His acts, submit to His will in every detail of his existence.

Temples, modelled scrupulously after the specifications outlined

by Comte have been erected in Liverpool and Rio de Janiero. Preaching near Liverpool brought me an opportunity to visit the temple there. One sees as he enters, a statue of Comte. At the opposing end of the temple in the middle of the chancel is a life-sized statue of the Sistine Madonna. Along each side are the niches with busts of the thirteen saints for whom are named the months in the Positivist calendar: Moses, Homer, Aristotle, Cæsar, Saint Paul, Charlemagne, Dante, Gutenberg, Shakespeare, Descartes, Frederick, and Bichat.

I introduced myself to the leaders as a humanist interested in the similarities, if any, between the two movements. I was invited to return to preach in the Liverpool Temple, even when I warned them that I should speak freely. But they told me I must not sit in the chancel nor mount to the pulpit until the mystical service had been conducted. The leader was, he said, "very canonical," as I gathered later from his meticulous gestures and intonations.

Certainly in regard to ritual he may be called a fundamentalist of the cult. One set service is used for regular worship week in and week out, and on the evening of my sermon I heard it conducted in canonical fashion.

There were an invocation, responses, a doxology. Then the leader stood at the right hand side of the altar and began:

. "Thus saith Humanity: "I am the source of all purity and the giver of all sanctity"

and other sentences. Then he turned around and kneeling before the altar said:

"I beheld and lo, a great multitude which no man could number, of all nations, and kindreds, and people and tongues stood before the throne. These are they which came out of great tribulation. We adore the sacred company of the dead; and among them our own dear ones; through whose life has arisen the mighty life of Humanity, the Supreme Mother of men, now here among us."

Then followed some responsive chanting. Up to this point the service had been conducted, one must admit, with great dignity and beauty. Were one to go there as though he went to a pageant that beauty might have a proper chance to show itself. But one was from the very start of the service conscious of an unnaturalness about it all. I experienced a feeling of revulsion that I promptly held in check in order to enter into the service as sympathetically

as possible. The chanting was rather ineffectively done, not in Latin, but in the Spanish as used in the Positivist temple in Brazil.

"Donna se' tanto grande e tanto vale, Che qual vuol grazia, e a to non ricore, Sua disianza vuol volar senz ali'."

(Lady thou art so great, and so prevailing, that he who wishes grace, nor runs to thee his aspirations without wings would fly.)

This and more chanting was followed by a silent meditation, music, a reference to the festival of the day, and then, all kneeling chanted the words arranged from Comte:

"In the name of Humanity, may Love be our principle, may Order be our basis, may Progress be our aim, may we live for others. May we live openly."

Mounting to the pulpit I faced a "multitude" of some forty who listened attentively and as I was later told appreciatively, to a sermon on "The True Religion of Humanity." I told them of Humanism as a living movement of this century, of its vital differences from their movement, and urged them to meet the challenge of the new day by taking a constructive humanistic step forward. Only later did I learn that Mr. F. G. Gould of London had been doing the same thing for some time without effect.

The leaders of the Positivist movement in Liverpool are possessed of a delightful culture of the pre-Comtian era, but seem hardly to have been affected by the thought that has developed since Comte's death. They did show a decided tendency to convince themselves that whatever had since been written is included in Comte's all-wise pronouncements. This is not a hard task to minds predisposed to it since Comte's all too ready generalizations were at the least sweepingly inclusive. That has probably been his chief value to the world of thought. He has set up some very broad hypotheses which future generations, especially in sociology have often used as a starting point for purposes of verification and reference. But with the true Comtian these writings are authoritative and, in practice, fence in the minds of his followers to an astonishing degree.

The Bishop of Liverpool recently undertook to edit a series of little pamphlets on the subject "God in the Modern World." Mr. Otto Baier, the active leader of the Liverpool movement spoke on that subject in February, 1928, identifying the God concept with Humanity which he interpreted as follows:

1. "The Humanity of our individual nature, which we find as the incentive to every action for good. The GOD within."
2. "The Utopia of the future Humanity, the industrial world co-operation realising the highest social speculation of a scientific priesthood, the ever more clearly seen *Social Ideal*, that inspires and leads: *The GOD* above.
3. "The Humanity of the families, tribes and nations, the teeming millions, with their work and play, their dreams and aspirations, the earth prepared to bear an ever richer harvest, the atmosphere of confident expectation, gradually replacing the primeval fear of the unknown, the consciousness of the growth of this Humanity through many generations under terrible catastrophes and back-sliding in humanity and bestiality, the consciousness of this slow, laborious and yet so triumphant development of human worth, this power realized in part as civilization, yet still more potent in the conviction of a much higher self-realization, this protector and upholder of our lives, this living Humanity is: *GOD In The World*.
 "And this divine Humanity, so viewed in its three-fold aspects—within, above, around—is one. Humanity is the consensus of powers that converge. It is the only reality of which we are conscious. Humanity IS and nothing touches us but through Humanity."

This effort to read the positivist theories into the idea of God is an unusual procedure for a Positivist. Usually the sharp distinctions between the scientific and theological has made them turn their backs rather unsympathetically to the advancing content or psychological function of theology. Mr. Baier shows a broader sympathy in this statement, but one still finds evident that lack of the integration of humanity to the universe from which it has emerged for which Positivism has been criticized. Any religious philosophy, however, which fails to take into consideration the inner drives, the projection of social ideals and the growing stream of human values from out the past which form the substance of this three-fold interpretation will be an impoverished theory.

The leaders of the Chapel Street Temple in London and one group holding meetings at its own foyer in Paris believe that Positivism is to be propagated by a combination of poetry and music.

These groups are also fundamentalists, but according to their own interpretations. Comte in his general view of Positivism "revealed" to the world that the philosophic priesthood of the true Positivism would one day usurp the functions of artist, musician and poet. In the past there were two movements in London, driven apart by a modernish schism, but the bare necessities of survival have forced the scattered remnants to unite again.

In the Positivist worship, the theistic faith object is clearly to be replaced by the personification of Humanity in the madonna.

"Humanity the one Great Being under whose providence we live can neither be conceived nor worshiped except under the concrete image, the ideal form of the Virgin Mother."

These are the words of George Legarrigue, an apostle of Positivism in Chile. Some of his prayers have true poetic feeling in them. But the worship of Humanity as person in the virgin is by no means conducted symbolically. They conceive it realistically as an organic being whose substance is in the madonna.

"Oh holy and divine Humanity, I adore and bless in thee the immaculate Virgin, in whom no selfish stain of animality is found to soil thy sublime and incomparable purity."

Somehow these groups cannot get beyond Comte. Much of the unnaturalness of the movement is easily understood when we remember that it has not been evolved as was Christianity over a long period of time. Comte conditioned it in his own image and by the rigid organization he left behind doomed it to a living death. What exists today is but the ghost of his hopes. Comte talked of the relativity of his thought but his spirit was authoritative. He made his calendar a tentative one for his own century but there has not been dynamic enough in the movement to change even that. The leader at Liverpool for instance could not officially make a change if he so desired without the approval of the controlling council which meets twice a year at Paris, as required by Comte's testament.

A peep into a few of these council meetings as revealed by their printed records reveals a quibbling over minute points of interpretation of what Positivism is, or what Comte, or Laffite, his Peter, intended. It is quite comparable to the early gatherings of Roman prelates. Here is an instance: For three sessions the council debated the matter of seating one M. A. Nour-Eddine, a native

tutor of Medea, Algeria, formerly a Mohammedan. After a year of waiting he had finally submitted with the witnessing signatures of two members of the council, a statement of his conversion to Positivism. The statement asserts that he has read carefully all of Comte's important works, no mean task in itself, and continues:

"I declare that I entirely adhere to the synthesis of the Master, consider it the best that I have yet known, consider it not only as preferable to all other but also as sufficient to the orientation of my existence. Accordingly I avow all my efforts to the service of the Family, the Country and Humanity."

But this complete giving of self to the movement is not enough to satisfy one M. Felician as to his orthodoxy and M. Nour-Eddine was not seated. This event, about as significant to us as the debate at a Mennonite conference over whether buttons will or will not be worn, is cited merely to show the deadly nature of a church polity having centralized authority.

A visit to the apartment of Auguste Comte in Paris furnishes the crowning touch to the picture of Positivist orthodoxy. A little old man meets one by appointment and shows you through the sanctuary with the same awed and hushed voice which one encounters in a cathedral crypt where rest the alleged bones and relics of the church Fathers. Here is the book-case of Comte just as he left it and never opened since his death. One is shown the desk at which he wrote his works, his lamp, pictures of Clothilde de Vaux, of Sophie Thomas who took care of him, and others intimately connected with his life and cult. Then in tears the guide explains that the young men are not coming to them and that the beautiful heritage will be lost to Humanity.

In practice then the orthodoxy of Positivism has been even stronger on the side of ritual than of organization. The thought patterns left by "the Master" have also played their part in making the movement an obstruction to creative expression on the part of its adherents. Like the Bahaists and others who have proclaimed the ideal of world unity, the Positivists have merely set up further barriers to that unity by acting as if they had a new revelation and a new saviour.

Positivism has its modernists as well as its fundamentalists. In London there are still vestiges of the liberal wing which brought about the old schism. Mr. F. J. Gould who is well known for his

splendid stories for the moral instruction of children, also a member of Stanton Coit's Ethical Society, and of the Rationalist Press association, has become alienated from the Chapel Street Positivist temple because he does not believe it an effective expression of the religion of humanity. A Professor Hayward conducts some rather tedious memorial services to great men at various points in England. The same preoccupation with formalistic means of worship and the same inability to understand the practical psychology of people which vitiates the entire Positivist cult, made a bore of the memorial service to Robert Owen and William Blake which I attended at the Highbury public library.

In France we also find Positivists of more modern tendencies. M. George Deshermes is a prolific writer working more or less independently. M. Emile Corra, the head of the *Positivist Internationale*, an organization which dates from an old schism and competes with the Council as the true representative of Positivism, is not in touch with the Council, or with the Liverpool Positivists. He is in communication with liberal Positivists in England, Argentine, Brazil, Mexico, the United States and China. "I do not want it to become mummified, I want to see it live," he says of the movement. He recognizes none the less that Positivism today is a pathetic sprinkling of anemic little groups each claiming to be the true representative of the religion of humanity.

In a series of annual conferences conducted in Paris, M. Corra has read the more recent sociological knowledge into the framework of Comte's inclusive synthesis. Like the modernists he is busy with putting new wine into old skins. He retains the famous slogans: "Love for principle and order for base" and "Live for others, Live openly."

These conferences have been published separately or in the *Revue Positiviste Internationale*. Through the columns of this paper we learn that Rio de Janeiro and Sao Paulo, Brazil, each have groups of apparently substantial size. The Sao Paulo society was founded in 1924. In the original political organization of Brazil, Positivist thought played an important part. The principle of a spiritual power and a temporal power was accepted from Comte's writings by governmental leaders and put into the constitution. That Positivism should do its best among the Latins is natural, although we hear nothing of it from Italy. In Argentine, a Dr.

Alfred Ferrera has gathered together a group which seems to be very much alive. Its bulletin *El Positivismo* claims to have five hundred subscribers and to be "injecting virility into the Argentine mentality," by making known the word of Auguste Comte on the social and political issue of the day.

M. Augustin Aragon, an engineer, gave forty-five lectures in Mexico during the year 1926, some of them on social and political issues of the day, some in the field of comparative religions and some as direct propaganda for Positivism.

A few other scattered voices such as Dr. Zodin in Roumania and Prof. La Grange in the United States, both ardent Positivists with a small personal following, go to make up the dwindling ranks of what is left of the movement. In Pekin there is an *Ecole Auguste Comte* for the study of the social sciences.

One who looks more for points of agreement than for points of difference will find much in the values desired by the Positivists that is equally desired by the humanist or the christian with a social gospel.

"Everywhere," writes M. Aragon, "we see the doctrines of our founder direct the thought and action of societies. Women are more respected and loved. Children receive better care and education every day. The sentiment of human solidarity, aside from all theology, becomes each day more clear. The aversion to war is more powerful, and begins to manifest itself even in countries where war is an industry. Ethics has begun to enter politics. Science and the fine arts progress enormously from one generation to another. The most terrible maladies are being cured or soon will be. Public schools and libraries multiply. The occident is treating the orient better, and beginning to understand it as Comte and Plaffitte understood it. A hundred other progressions could be enumerated as conquests of the positivist spirit."

Once, when I was a boy of high school age, a state Secretary of Agriculture pointed out to me that in the field in which I was working, a field which produced in that one year a thousand crates of strawberries from a variety of his own breeding, no two leaves were exactly alike. Verily I learned that day that one thing is different from another.

From my observation and study I find that Humanism and Positivism are two entirely different plants, grown in different climates,

different soil, and from different seed. They are not of the same species. Positivism is a hybrid developed in the stuffy hothouse climate of one man's study. It bears the limitations of that man's personal foibles, we might fairly say abnormalities. It bears, moreover, the limitations of his century. The time was not yet ripe for such a synthesis. If in outer form and symbolism it retained certain similarities to the Roman Catholic church, it was uprooted from the human content of the religion of this hemisphere. Hence it has failed to win the response necessary to its success as a religion.

Comte's mentality was dominated by his so-called "Law of the Three Stages," the theological, the metaphysical, and the positive or scientific. It is on the surface an intriguing theory. Space will not permit me to go into the critique which Renan and others have made of this doctrine. It led Comte and his followers into doctrinal errors as costly as was his imitation of the Roman church organization. Comte failed adequately to gauge the survival power of superstition. He did not see that we have all three stages with us at any time. He failed to get behind the theological formulas of Christianity and see the service they were performing for inner life. Humanism has a grasp of the problems of the inner life not within Comte's range of experience. This inadequacy on the part of Comte arose from a false philosophy, an inadequate historical knowledge, and the oddities of his own personality.

We must bear in mind that Humanism has tools which Comte did not have to help him in his work. The results of half a century's research in the social science are now available. It has an immense body of new facts and hence a sounder orientation. It has at its disposal a developed method of research which controls the subjective limitations which handicapped Comte's system of thought.

Comte's system grew, not from an understanding of the needs and life problems of many other people but from the intellectual demands of his own system. Although the one to suggest that psychology become a science, a suggestion which George Eliot pointed out in speaking of "the egotistical Frenchmen" was met with derision, Comte was himself constitutionally unpsychological. He lacked even the common sense knowledge of practical psychology which is gained in a full and healthy life of normal acquaintance-ship with many types of persons.

In his course introductory to the study of society at the University of London, Professor Hobhouse points out that Comte's thought is dominated throughout by the Cartesian philosophy. He tried to give to social relations the certainty of mathematical knowledge. Comte did on paper give a place to the feelings in his theory of knowledge. A thread of this influence has been traced from William James, through Renan to Comte. But it was Comte's arrogance and dogmatism which Renan most disliked. Whereas Comte's effort to found a cult of humanity was artificially and theoretically pragmatic, Humanism is experimentally pragmatic with human needs the measure.

Comte did not escape the mechanism and rationalism of his century. This, no less than his notoriously inadequate knowledge of history and his false "three stages," successfully dehumanized Comte's system of doctrine and left it a rigid formulation of abstractions.

In philosophy the New Humanism has arrived at a point far from that to which Descartes led Comte. The fact is that a number of modern philosophical schools emerge religiously at Humanism. The chief argument advanced against Positivism by its early critics was that Comte had isolated his Humanity from the universe. Certainly that cannot fairly be said of Humanism. Its world view is naturalistic, but also organic and emergent. Although he participated in the development which foreshadowed Darwin, Comte was tarred with the pre-Darwinian stick. We of today have seen the break-up of the atom restore an organic world view. We possess a developed evolutionary theory. Says the Humanist, "Man is an earth child, born of the same star dust and fired with the same life force that moveth every living thing." "Man is the measurer of all things," in constant interrelation with and sustained by the surrounding world.

Feuerbach has been called a Positivist, but that was because he adhered to the evidential method and not because he adhered to the Comtian cult. To the contrary Feuerbach believed all systematisation to be an arbitrary setting of limits to our perception. He wished neither to imprison life in a formula nor to violate reality by his own rigid definition. The New Humanism is similarly in a state of development, rather than in a static condition.

Alfred Loisy of the College de France has been called a neo-

Positivist. In answer to an inquiry concerning the relation of his religion of humanity to that of Comte, Loisy wrote:

“Although I have never studied Comte deeply I see everything in his system as fixed and rigid while I view all things as relative and in flux.”

Loisy is less individualistic than the American Humanists. His Catholic heritage seems to have led him also to make out of Humanity a substitute for his theistic faith object, but it is usually as an inner ideal rather than an objective being. His thought is like that of the New Humanism in that it is relative. “I never could find inspiration,” he says, “in an abstract absolute radiating with frigid clarity.”

Nor can the charge that Humanism has severed the current of Christian idealism be fairly made of the New Humanism. The transition is being made slowly and normally. The New Humanism is a hardy plant deeply rooted in the human needs of many people. It is not rationalism. It arises in surprising similarity from independent sources. It is a subtle, permeating influence rather than a cult. Where it has come to conscious unity, its unity is the unity of freemen. Using a similar method, and disciplined by the same loyalty to truth, they break through the complexities of a transition period to find enthusiastic fellowship and co-operation in the fulfillment of a shared ideal freely won by each and all. The humanist sees that ideal of the abundant life implicit not only in Christianity but in all religions. He stresses the planetary origin and the human values in all religions.

Feuerbach was of direct influence upon at least one American Humanist, Dr. F. C. Doan. Where Comte turned his back upon theology as entirely in error, it was Feuerbach who looked within the human heart for the explanation of things which man had projected into his gods and his heavens. Where Comte's unsympathetic break with theology meant a failure sufficiently to appreciate that our ideals have been raised to the heights through centuries of aspiration, the Humanist believes he sees those ideals in sufficient clarity to be able to go on without the theological scaffolding of the supernatural within which those ideals were erected.

If the Humanist does not find conclusive evidence of personality and conscious purpose elsewhere in the universe he finds them in man. They are to him the new and real differences emergent in man out of a continuity of process to make man human. Truth,

beauty, goodness are the world become interiorized and becoming person in man through his experience of the outer world progressively unified within.

The Humanist's protest is partly a demand for sincerity in the use of words that we may continue to make distinction between black and white, between guesswork and fact. If he emerges at an essentially different type of religious experience from that of the Roman church it is to restore the element of challenge and renewal for that of resigned dependence and escape. This is a Puritanism of words. It is a discipline which will not permit speculation to soar far from evidence, words to be divorced from content or faith to offer escape from duty. The Humanistic faith demands fulfillment in abundant living.

Positivism represents clearly a different conception of what religion is and what it should do for its members, from the aim of the Humanist to produce significant persons, to develop "individuality with standards." Comte was near enough to the French revolution to put such a price on order that he sacrificed individuality and creativeness to solidarity and unity. The Humanist doctrines of the catholicity of values and the uniqueness of each individual are quite foreign to Positivism. Equally foreign to Humanism is the Positivist conception of a hierarchy of intellectual snobs conditioning the masses by a religion which was justified chiefly by its ability to maintain docile order and subservience to the past.

Positivism could only have come from France. In that country the heralders of a new religion always must needs formulate their cult in such manner that should sudden success come to them they could pack up and move into Notre Dame at a moment's notice. Religion apart from its cathedrals with their particular form of worship is not thought of as religion in France. Comte hence assumed that the new religion would retain essentially the same experience as the old. The manufacture of a faith object by the personification of Humanity in the madonna, (or was it Clothilde de Vaux?), the provisions for his Calendar of saints, and for an apostolic succession arose from such assumptions. Comte failed to recognize that the religious experience of the emancipated mind is of an essentially different kind. He did not see that the institution which would successfully meet man's need for freedom must also be inherently different from the authoritative systems of the past.

The importance of ritual in the present controversy between Humanism and Theism should not, however, be overlooked. From the point of view of the lady in the theistic pews, religion is definitely associated with the hymns, responses, collects, and benedictions that she has been used to all her life. What she demands of the theistic apologist is that he continue to make valid intellectually the use of the Lord's prayer, the psalms, and other service elements which never fail to develop the feeling of complacent dependence and reassuring consolation she is used to. From the point of view of the man in the Humanistic pews these same elements which he once loved, no longer are valid. If he loves the hymn tunes he wants words that will not disgust his intellect. The highest function of the religious service is to organize and renew the inner life and direct the energies thus released. This is valid insofar as it has done that and not merely meant escape from reality and social duty. Hence a real need for Humanistic services is felt in many quarters.

If the ritual of Positivism was predestined to sterility by its own shallow soil, the New Humanist service can be expected freely and gradually to evolve from the needs of vigorous and living congregations. The whole Positivist experiment is a vindication of the congregational polity and its way of individual religious liberty. Unitarians welcome differences as a sign of life and yet are able to co-operate in unity. By free exchange of materials the Humanists may fairly expect to develop as the years pass a mellow and sound service which will not only effectively feed the inner life but which will continually be refreshed with new materials. Though it puts more trust in challenging sermons, Humanism thirsts for beauty in its services as a religious value necessary to renewal in a machine civilization. That a body of service material freely gained in this way should have in it more vitality, should ring more truly to human needs than the Comtian ritual is seemingly inherent in its source.

The heritage of religious liberty which the Unitarian Humanists claims and the Humanists in the universities likewise possess is a guarantee that the Humanistic thinkers will not yield their critical faculties to any particular leader. They may go to the past for inspiration, weigh its values and glean its experience, but they will apply their own reason to the task of meeting the emerging needs of the present. The past is so full of error and so inadequate with

its answer to the spiritual needs of an industrial society that the Humanist, if he does not entirely disown it, will by no means worship or submit to it. The Humanist moreover has no messiah complex.

Let us recognize also that modern Humanism has a framework in society upon which to survive which Positivism did not have. The world is more nearly ready for a constructive answer to its religious needs. The new world view has had more time to develop and to make itself felt! Important concessions have been made by the theists. Seeking to justify their faith by the type of person it has produced, the more recent apologists have admitted the good life to be the most important thing. They thus subordinate theology to the supreme ideal of Humanism and admit its contention that religion is a way of living and not of believing. Where Positivism was ably met by a deluge of apologetics which by sheer mass it could not answer, Humanism has shown a considerable ability to defend itself when it wants to and to go on about its own tasks when it doesn't. The weapon of indifference is two-edged. Moreover the growing literature of Humanism makes the use of Positivism as a shibboleth increasingly ineffective.

One real issue between Humanism and Theism is found in the opposing claims of metaphysical speculation and the authority of verifiable evidence. To the Humanist the price of superstition is too great to make possible anything other than a reverent agnosticism which is unwilling to place speculative answers at the center of the scene and suspend the moral life therefrom. However interesting as matters of speculation metaphysical questions may be they are relatively remote from the immediate fulfillment of life. He believes that the road to world unity is through ideals so rooted in human experience that they are not controversial.

There is a possibility that if the more liberal Positivists could take an unbiased look at history before and after Comte and see him in his proper perspective they might yet be able to take an active part in the Humanistic movement of today. Their exaggerated view of Comte's importance prevents this. They simply fail to give due credit to such men as Saint Simon and Condorcet whose thought helped tremendously to shape up that of Comte. They do not face Comte's personal peculiarities. To try to heap onto this one man glory borrowed from great scholars before and after

bespeaks a distorted power of observation. But there are so few younger men in the movement that it seems consigned to the museum of unfulfilled dreams. Comte's works may be read as we'd read Plato's *Republic* or More's *Utopia* with great profit. By the very comprehensiveness of his system Comte has demanded attention. His works are undoubtedly a mine of stimulating ideas. But the New Humanism is a product of another soil, another century, another epistemology and another spirit.

For the impulse he gave to the development of the social sciences Comte deserves the statue which is placed to his honor before the Sorbonne. Let us give him his due, he was a great savant. His thought has been of greatest influence outside of his cult. But let us have an end of this absurd effort to attach the Positivist label to Humanism. The confusion comes from the dual use of the word. Positivism as a cult with an exact system of thought and the positive method are different things. In a discussion of Positivism we must distinguish not only between the philosophical system of Comte and his cult, but must remember that the word is frequently applied in a limited way to various thinkers such as Feuerbach, J. M. Guyau, and Alfred Loisy who are like Comte only or chiefly in their desire to be scientific. As used on the continent and sometimes here the phrase *positive method* means remaining close to the facts and refers neither to the Comtian religious cult nor the Comtian philosophical system.

The Unitarian doctrine of the freedom of the truth has been taught as the duty to follow the truth whatever its test. If they adhere to that their churches will continue to make Humanists because what they are teaching is essentially the positive method. That method is less ambiguously called the scientific method. We should adhere to the word *scientific* for the sake of clarity although its demands are severe. The word *Positivism* includes too much else which cannot be found in the Humanist movement to make it a usable term. To say that the New Humanism is the old straw of Positivism long since well thrashed and hence unworthy of consideration on its own merits is a worn out argument, unjustified by the facts.

FROM MODERN PHYSICS TO RELIGION

I.—Professor Eddington's *Metaphysics, Philosophy and Theology*

BY VICTOR S. YARROS

PROFESSOR A. S. EDDINGTON, the distinguished British astronomer, physicist and educator, has published an extraordinary book entitled *The Nature of the Physical World*. It is, in reality, a revised series of university lectures, and has some of the defects of semi-popular lectures. These defects, however, will not trouble the general lay reader, or even the studious and cultivated reader. The book is brilliant, unconventional as to form, exceptionally well written and in more than one place delightfully humorous and witty. Critics have said that the book is literature as well as rigorous science, and they may be right. It fascinates, intrigues and diverts even while it instructs and elucidates the most difficult problems in modern physics and modern philosophy.

It is hardly necessary to say that it is up to date in every respect. It is Einsteinian and Planckian, and more. As an exposition and interpretation of the new physics, it leaves nothing to be desired. But in that part of its task it is not in any sense original.

The original, daring and surprising elements of the book are to be found in the pages—and there are many of them—in which the metaphysical, philosophical and religious aspects of modern exact science are discussed by the author. For he does not stay within the safe limits of science. He is interested in the deeper and more important problems that challenge the mind of man. He ventures boldly beyond science; he even admits and defends mysticism; he has room for and need of theology, religion and God. He upholds the validity of claims which other savants decline to recognize, or treat with scorn and supercilious contempt.

It is the extra-scientific parts of the book that I propose to notice and comment upon in this paper. The reader who is conversant

with the teachings of Whitehead, Russell, Jeans and other British scientists will find much in Professor Eddington's book that will suggest fruitful comparisons and pregnant questions.

Perhaps the best way to call attention to the issues raised by Professor Eddington is that of direct quotation. Here is what he says about "the nature of the conviction from which religion arises":

"The conviction which we postulate is that certain states of awareness in consciousness have at least equal significance with those which are called sensations. Amid [the former] must be found the basis from which a spiritual religion arises. The conviction is scarcely a matter to be argued about; it is dependent on the forcefulness of the feeling of awareness. . . . The idea of a universal Mind or Logos would be, I think, a fairly plausible inference from the present state of scientific inquiry; at least, it is in harmony with it."

"We have to build the spiritual world out of symbols taken from our own personality, as we build the scientific world out of the metrical symbols of the mathematician We must be able to approach the World-Spirit in the midst of our cares and duties in that simpler relation of spirit to spirit in which all true religion finds expression."

"We cannot pretend to offer proofs. *Proof* is an idol before whom the pure mathematician tortures himself. In physics we are generally content to sacrifice before the lesser shrine of *Plausibility*."

In addition to the foregoing significant quotations, we may note that Professor Eddington believes that the stuff of the universe is mental, not material, nor neutral, and that modern physics, in his view, has wiped out the old distinction between natural and supernatural phenomena. Since the world is full of marvels, mysteries, unknown and perhaps unknowable things; since we do not know what the atom is, what it does, and why it does it, it is no longer an objection to any affirmation to say that it *implies* the "supernatural," or an argument *pro* any statement that it *avoids* the assumption of supernatural phenomena.

Finally, we may quote verbatim Professor Eddington's own very useful summary of the cardinal points of his metaphysico-philosophical reflections.

"1. The symbolic nature of the entities of physics is generally recognized, and the scheme of physics is now formulated in such a way as to make it almost self-evident that it is a partial aspect of something else.

"2. Strict causality is abandoned in the material world. Our ideas of the controlling laws are in process of reconstruction, and it is not possible to predict what kind of form they will ultimately take; but all the indications are that strict causality has dropped out permanently. This relieves the former necessity of supposing that mind is subject to deterministic law, or, alternatively, that it can suspend deterministic law in the physical world.

"3. Recognizing that the physical world is entirely abstract and without actuality, apart from its linkage to consciousness, we restore consciousness to the fundamental position instead of representing it as an inessential complication found in the midst of inorganic nature at a late stage of evolutionary history.

"4. The sanction for correlating a real physical world to certain feelings of which we are conscious does not seem to differ in any essential respect from the sanction for correlating a spiritual domain to another side of our personality."

We are now in a position to analyze and comment upon the author's remarkable admissions or concessions to theological and metaphysical orthodoxy.

Physical entities are undoubtedly mere symbols. Naive realism is dead. But is it logical to contend that behind the phenomena we deal with symbolically and abstractedly there is something mental, something higher than the physical? The world, to us, is what our sensations, perceptions, inferences and reasoning processes make it; but are we justified in assuming that what we do not sense and perceive is nobler or higher than that which we think we understand? The table which we use, or the typewriter, is not really and exactly what it appears to be, but the aspects we do not perceive are not necessarily nobler than those we do perceive. What is the Universe? We do not know, but we have formed certain notions of it, and these are inevitable, given the human mind and the human body. What is behind and beyond the things we see, hear, smell, touch and reason about, no human mind can possibly know. Our notions and conceptions are pragmatic; they cannot be anything else. That which we cannot conceive remains a mystery. Neither science nor common sense has anything to tell us about the wider or higher entities referred to by Professor Eddington. The Agnostic declines to speculate concerning those other entities.

But what of the assertion that the stuff of the world is mental?

If that be granted, does it not follow that the stuff of the world is also noble and spiritual? By no means, for we have to define the term "mental" as well as the term stuff. Let us pause to consider Professor Eddington's own definitions of these terms. They are, to say the least, singular and paradoxical.

He writes:

"To put the conclusion crudely, the stuff of the world is mind-stuff. . . . The mind-stuff of the world is, of course, something more general than our individual conscious minds; but we may think of its nature as not altogether foreign to the feelings in our consciousness. . . . The mind-stuff is not spread in space and time. . . ., but we must presume that in some other way or aspect it can be differentiated into parts. Only here and there does it rise to the level of consciousness, but from such islands proceeds all knowledge. . . . We are acquainted with an external world because its fibres run into our consciousness; it is only our own ends of the fibres that we actually know; from these ends we more or less successfully reconstruct the rest, as a paleontologist reconstructs an extinct monster from its footprint. The mind-stuff is the aggregation of relations and relata which form the building material for the physical world. . . .

"Consciousness is not sharply defined, but fades into subconsciousness; and beyond that we must postulate something indefinite but yet continuous with our mental nature. This I take to be the world-stuff. We liken it to our conscious feelings because, now that we are convinced of the formal and symbolic character of the entities of physics, there is nothing else to liken it to."

Bertrand Russell's view, that the stuff of the world is "neutral," our author rejects, because, he says, that view implies that we have *two* avenues of approach to an understanding of the nature of the world, whereas we have only *one*, namely, *through our direct knowledge of mind*.

The reasoning in the last quotation seems extraordinary. In the first place, we are told that the terms mind-stuff do not mean what they mean in ordinary discussions. Mind is not mind, and stuff is not stuff as we know these things, or have conceived them in the past. What we are to understand by mind-stuff is "the aggregation of relations and relata which form the building material of the physical world." This stuff we must liken to conscious feelings because we cannot, now that we have discarded crude materialism,

liken it to anything else. But what necessity is there for likening that stuff to anything at all? What end is served by calling it mind-stuff? Does the comparison help us to understand that part of the stuff which is beyond the fibres we know? The answer is in the negative, unless we adopt the simple and naive beliefs of the orthodox theologians. What we are entitled to say is this—that a certain process which seems physical up to a certain point becomes mental at that point, in our own use of the terms physical and mental. Where and how the translation occurs, we do not know. The differences we feel and know in the stages of the process need names, however, and we coin them; but let us not forget that the names *are our own creation* and remain just names. Professor Eddington says that we “more or less successfully reconstruct the rest” of the chain or process, the part beyond the fibres we know; but he stops here, tantalizingly enough, and does not tell us *what we have reconstructed* and what the creation of our reason and imagination looks like.

He does say, indeed, that it is not illogical or unreasonable to assume a Great Universal Mind, behind the mind we ourselves possess and the mind-stuff of the universe. This is a new version of the old and fallacious Paley argument, but the version is scarcely an improvement on the old notion. If it is not unreasonable to infer a Great Mind, a Knower and Creator, a God, is it unreasonable to infer that the Universal Mind is lodged in a brain resembling the human and that the brain is part of a body resembling the human body? If so, we are back in the camp of the fundamentalists, the believers in a personal God amenable to prayer and persuasion. What a lame and impotent conclusion that would be!

The scheme of physics is indeed part of something else, but why pretend that we *know* anything about the whole of which physical entities are a part?

Strict causality is abandoned by modern science, says Professor Eddington truly, but does it follow that the mind of man is not subject to deterministic law? Is *all* causality to be dropped, and is chaos to replace the conception of the reign of law? Certainly not. The universe, after all, is *not* chaotic. We cannot trace all consequences to causes, but that does not prove that the consequences have not causes which we are ignorant of in our present state of development. Because certain phenomena are as yet obscure and in-

comprehensible, are we justified in asserting that they are fortuitous and causeless?

The recognition that the physical world is abstract, continues Professor Eddington in his summary, restores consciousness to its former fundamental position. Why? Fundamental to humanity, perhaps, but not fundamental in the cosmic scheme. We cannot assume that our consciousness is as important to nature as it is to ourselves. And of what significance is the fact that consciousness is again fundamental, if it stops exactly where it did when it was regarded as "an inessential complication of inorganic nature?" Where we *put* consciousness is a matter of no moment. The question is, what do we do with our theory of consciousness?

And here we come to the crux of the discussion. Because of the rehabilitation of consciousness, and because of our new orientation in physics, Professor Eddington claims, a new sanction has emerged for religion and mysticism. We correlate, he points out, a certain "real" world to certain feelings of which we are conscious; why, then, may we not correlate a certain *spiritual* domain to *another* side of our personality? We may and, as scientific thinkers, should, according to Professor Eddington. The sanction is of the same kind in both cases, he contends, and the process of forming the conception of a world of which our feelings give us only fleeting glimpses is also the same.

The author illustrates his point by showing that mere physical phenomena lead us to such concepts as Beauty, Harmony, Unity. Mere physics thus engenders admiration, wonder, exaltation, reverence. Why should not other experiences and feelings in us lead to concepts of the religious type? he asks. Well, the answer is that they do not necessarily or always engender such concepts, and, where they do, the concepts are barren and might as well not exist. There are no Agnostics so far as Beauty is concerned, but there are Agnostics in religion and theology. Professor Eddington fails to account for widespread Agnosticism, although he does insist that those who claim they have vivid religious feelings and experiences should suit action to profession and show that religion is to them a living and potent reality, not a mere empty form of lip-service.

There is absolutely no objection to correlating a spiritual domain to a given side of our personality, provided we know what we

mean by a spiritual domain. Professor Eddington does not stop to characterize or delimit the spiritual domain. He assumes that morals and esthetics belong to that domain, but neither morals nor esthetics are dependent upon theology.

Repeatedly Dr. Eddington mentions God, but he refrains from telling us what he means by that term. He fails also to attribute any rôle to his God. As Bertrand Russell says, Professor Eddington seems to believe that his God had something to do with the world in a remote past but abdicated long ago and has forgotten his creation. Such a conception of God is neither philosophical nor practical or sensible. How can we correlate it with our feelings and experiences, pray?

Mr. Russell suspects that Professor Eddington is not wholly candid with his readers, but holds something back. This is extremely improbable. He is misty and nebulous, to be sure, but only because his ideas "beyond physics" are vague and rudimentary. He feels that there is *something* beyond physics, as does Santayana, but what that something is, no one is able to conceive. Why not confess ignorance and stop there?

It is impossible to escape the conclusion of a certain rational idealism—namely, that we know nothing of the actual physical world, and that our senses and perceptions may be grossly unfaithful to reality. But we have no appeal from our senses and perceptions. We have no other data or materials wherewith to build conceptions and theories. We can only admit that the world *may* be different from our image and idea of it; we can only bear in mind that real, actual, ideal are our own terms coined to make distinctions which we find necessary.

The claim of some thinkers that modern physics is furnishing unexpected support to religious orthodoxy and undermining Agnosticism is arresting enough, but, when we examine it closely, we find that it is baseless. Modern physics tends rather to strengthen Agnosticism and to extend it.

Professor Eddington himself virtually admits this. For instance, in discussing the electron and its antics, he says that we may describe these things as "something unknown doing we don't know what," and he maliciously and shockingly compares his own formula with

The slithy toves
 did gyre and gimble in the wabe,
 and similar delightful nonsense.

Well, if all this be true, what meaning is there in the statement that the stuff of the world is mental, or that physics as now taught has abolished the distinction between the natural and the supernatural, the real and the mystical? If we know *nothing*, what basis is there for God and a so-called spiritual domain?

Dr. Eddington is at times the victim of his own wit, cleverness and breadth. He is a foe of dogma in science or elsewhere, but he mistakes the open mind, the genuinely scientific attitude, with a mushy, thoughtless, demoralizing sentimentality. Science should be modest, tentative, as he insists, but it is absurd to pretend that science has no better foundation or sounder sanctions than, say, orthodox theology. We have the right to demand that theology shall be at least as scientific as are the more exact physical branches of knowledge.

II.—NEO-NATURALISM AND NEO-RELIGION

Religion, by Edward Scribner Ames. Holt and Co.

Here is a book which rationalists and Agnostics should welcome as sincerely and fervently as will those who cling to a certain degree of what may be called orthodoxy in their religious philosophy. Prof. Ames may not be—indeed, is not—strikingly original in the views he presents in this volume, but he is very persuasive, plausible, lucid and candid. His essential teachings differ little from those of Whitehead, Eddington and Millikan, but he is more intelligible than any one of the erudite metaphysicians and physicists who have lately attempted to return to religion, God and mysticism *via* physics and mathematics. He has made a strong case, from his own point of view, for the fundamentals of religion, and he will have to be reckoned with,—that is, discussed and elaborately answered.

In the present brief notice only a few points can be considered, but they will be the points which test at once the merits and the weaknesses of Dr. Ames' position.

To Dr. Ames religion is something so profoundly natural and human that to defend it, to try to prove its validity and legitimacy, is to be guilty of the absurdity of laboriously demonstrating the self-evident. But what is religion? To Dr. Ames, a way of contemplat-

ing and reacting to the whole of nature, the totality of all phenomena, physical and spiritual, intelligible and incomprehensible. Nature is studied by the science piecemeal, and properly so. Things have to be isolated for the purposes of science, and all observation and experimentation have to be made under artificial conditions. Truths yielded by science are valuable as far as they go, but they leave much unexplained. The same is true of any philosophy that claims to be scientific. Not so with religion. To religion nature is something organic and indivisible. Man is part of it, and cannot be supposed—as Huxley, for example, contends—to be *at war with the rest of nature*. That is, human ethics cannot be really incompatible with cosmic ethics, whatever the appearances may suggest to the superficial observer. Men's ideals and noblest conceptions are as natural as the so-called animal passions and appetites which he must satisfy, albeit in sublimated forms. The basic harmonies of nature are clear to religion, if not to science. And religion inspires effort to banish apparent discords and reduce or eradicate apparent evil.

God, to Dr. Ames, is nature viewed as functioning in a certain way, the way that leads to the most abundant and worthiest of lives from the human point of view. In other words, God is a name we humans give to the ideal and the excellent *in ourselves* and therefore in nature. Since ideals exist, and since moral progress is real, God exists. To doubt his existence is to doubt what we most value and cherish in life and in thought and feeling—and this is inconceivable. God is *not* a person in the literal or strict sense of the term, but he has a personal aspect, since he personifies, *to us*, our own personal qualities of goodness, virtue and moral beauty. When we pray to God, we pray to a whole aspect of nature and life, and prayer is efficacious, because something in us answers the prayer and grants the favor sought. Prayer makes us purer, gentler, sweeter, more human, and by affecting *us* affects *nature*—though not what we may call physical phenomena, like wind, flood, earthquakes, fire, etc.

It will be seen from the foregoing inadequate summary that Dr. Ames is neither heterodox nor orthodox, but a cross between the two types. He has little sympathy with the ordinary modernist, and none at all with the Humanist. He stresses the impossibility of *ignoring* the supernatural or drawing a sharp distinction between

it and the natural—agreeing in this respect with Professor Eddington. He thinks the position of the Agnostic unscientific and unphilosophic, out of date and out of harmony with contemporary habits of thought.

However, the unrepentant Agnostic, while paying tribute to Dr. Ames' sincerity and courage, will not hasten to surrender his position unconditionally after reading the book under notice. After all, Dr. Ames coins terms and makes definitions to suit himself. He stretches logic rather violently when he contends that God is "personal" in a sense. And how many men would pray if they thought they were praying to themselves—to their better natures—and asking these better selves to conquer the worse selves? If God is a name for one side of nature, the good and ideal side, what is the name for the ugly, seamy, disagreeable and odious side or sides of nature? The Devil? Again, how many intelligent persons will accept these definitions as satisfactory substitutes for the old and conventional definitions or conceptions?

But, going a little deeper, let us ask whether Dr. Ames is not guilty of a naive anthropomorphism in his reasoning regarding human nature and nature at large. It is true, and no one has ever denied, that *man is part of nature*—what else, indeed, *could* he conceivably be? But what grounds are there for magnifying his importance in nature? Man is supposed to be the last word in Evolution, but even if that is the case—and we cannot be sure, since there may be life on other planets, and that life may have assumed forms superior to ours—what ground is there for assuming that man is of interest or significance to anybody save himself? Man's habitat is the tiny, unstable, inconsequential globe. Man's destiny is uncertain and his career is short and full of terrible misdeeds. He is still rapacious, brutal, stupid and ignorant. He kills for fun and is not ashamed. He slays his fellows without reason because he is full of envy and malice. He is vain, petty and arrogant and cannot be trusted with power. He is hypocritical, professing creeds he has no intention of practicing. He is superstitious and gullible. There is no evidence that his disappearance would cause a ripple in the cosmos. What does he *know* of nature? Nothing. How presumptuous, then, it is in him to propound theories concerning his relation to nature and his rôle and place in nature.

Words may serve the purpose of concealing intellectual poverty.

But the critical thinker is not deceived by words. The Agnostic is first and last a critical thinker and a frank realist. He knows that human knowledge is pitifully meager, and that it will always remain meager so far as the ultimate problems of nature and life are concerned. Man does well, indeed, to identify himself with his better nature; he shows sense in endeavoring to make his existence more and more comfortable; he is slowly learning the advantages of kindness, forbearance, mercy and generosity, and occasionally he rises to the plane he calls altruistic. He is to be encouraged to persevere in his difficult and thorny upward march, but it behooves him to remain humble and simple. He must bear in mind that nothing is more ridiculous than pretension to wisdom where no wisdom exists and where at every step one encounters insurmountable obstacles to understanding.

The Agnostic, remembering all these things, refuses to claim knowledge beyond science and empiricism. He will not accept Dr. Ames' religion or philosophy of religion because they are largely verbal and rhetorical creations.

RELIGION ALWAYS COMES BACK

BY WILLIAM H. ROBERTS

AMERICA at last is class-conscious!

Not, we must add at once, in an economic or Marxian sense. The most strenuous efforts of such doughty fighters as Debs, LaFollette, Upton Sinclair, and Norman Thomas, if we may judge by the results of the last election, have failed even to attract serious attention. The division is along other lines. It is a division and a conflict that could scarcely have been predicted twenty years ago.

What the Socialists have failed to accomplish, the Fundamentalists have achieved! Socialism in America seems distinctly on the ebb. Religion, on the other hand, is steadily assuming greater and greater social and political significance. Its influence on the recent presidential election cannot be ignored and should not be discounted. The success of the Prohibition movement made the Protestant religious elements of our population conscious as never before of their political power. What shall we do next, was a natural question. Resulting conflicts deepened the fissures of cleavage and consolidated the opposing factions.

In a democratic country no good reason can be assigned why any group whatever should not utilize all the political force it can command. That which the churches can summon is enormous. Organization and a technique of propoganda are being rapidly perfected. Religion is in politics. It is in to stay. And its influence seems bound to increase.

What new issues will be raised? What changes will result? It is impossible yet to foresee. In the meantime Prohibition, surveys of industry by the churches, "monkey laws," programs and agitation for week-day religious instruction, the activities of "The Lord's Day Alliance" and the American Association for the Advancement

of Atheism—all these are facts big with menace or promise, or merely interest, according to one's point of view.

A glance at publishers' statistics tends to confirm our estimate of the place held by religion in the thought of America today. In 1928 it is reported that 7,614 new books were published. Of these 1,135 were fiction, 766 dealt with religion, and 634 were juveniles. These three classes contain one-third of the entire output and the works on religion more than one-tenth.¹

It is scarcely possible to pick up an issue of a magazine more serious than the "confession" type without finding at least one article expounding, attacking, defending, or attempting to appraise religion. Newspapers are on the alert to feature dissensions and doctrinal controversies. The American Association for the Advancement of Atheism is an active missionary society for pious irreligion. Dr. Watson preaches the gospel of Behaviorism with the fanaticism and the tactics of Billy Sunday. And Clarence Darrow argues for evolution as he would for a crook or a murderer.² Scientists, meanwhile, are on the defensive and inclined to be conciliatory or even friendly. Millikan reiterates his conviction that religion and science are not merely compatible but mutually supplementary and both indispensable. Eddington, in what may be reckoned the most important scientific or philosophical or religious book of recent years (*The Nature of the Physical World*) finds science literally driving men's thought toward essentially religious conceptions.

The exciting possibility emerges that questions of faith and belief may again, and before very long, become the supreme concern of men and of nations. Religious wars, we certainly hope, are forever past: but that seems by no means sure. If they come again, they will at least restore something of color and glamor to a world that is rapidly losing its sense of spiritual values in a mad, and apparently futile, struggle to keep pace with its machines.

Religious wars cannot possibly be more cruel or more devastating than economic wars. On the contrary, if, as has been confidently

¹ Other items are: biographies, 640; poetry and drama, 595; sociology and economics, 502; history, 394; general literature, 363; geography and science, 685. (Willard E. Hawkins in *The Author and Journalist*, March, 1929, p. 9, quoting the Publishers' Weekly.)

² Why, by the way, has no one ever protested that science does not require a criminal lawyer to defend it? And why has no one pointed out the stupid tactical blunders, the complete misjudgment of all the significant factors in the situation, that made the self-elected defenders of science the really simian figures in the famous Scopes trial?

asserted, gentlemen really prefer wars and will have them, a religious war would seem to be the best of all possible wars. Eight or nine centuries ago men fought for a Holy Land. Today they fight only for oil lands—or perhaps diamond fields. To call that *progress* is ironical.

If men must fight, religion is the one thing most worth fighting for. If men must again train cannon and high explosive shells upon the bodies of living fellow men, let us pray to whatever gods there be that they will do it for the glory of some God or other, or for the salvation of whatever may then be serving as the equivalent of immortal souls. It will be an immeasurable calamity, if they are willing to do it for the salvation of the Maximum Petrolatum Company's investments in the Andes or for the glory (and profit) of the international bankers, Messrs. Judas and Hogg.

But just what should we fight about? Of all stupid procedures, the silliest is to *fight* for truth. Truth is not disseminated in clouds of poison gas. It is not thrust home by stabbing bayonets. Violence is a sign of panic, not of certainty and assurance. What is religion? How can it become anyone's supreme concern? And what is the secret of its vitality?

It is commonly held that religion cannot be defined. I believe it can be adequately, even completely defined in eight words.

Religion is the goodness of the good man.

More than eight words will be required to explain the definition. We must, in the first place, come to agreement upon our "good man." I do *not* mean the morally irreproachable citizen. He *may* be that, too. He is more likely to be an object of suspicion to good citizens. He is that sturdy, indomitable person, quite possibly a "rough neck," who according to a popular saying cannot be "kept down." He just won't stay down. Beaten, deceived, disappointed, failing times without number, he comes back again and again and as often as need be. Smiling or grim, he carries on. Destiny weakens before such a man. Circumstances "break" at last in his favor. In the end he wins. And in his triumph he is more than a mere man. He is a symbol of M A N toiling through the ages.

By his "goodness" I mean whatever it may be that keeps him going. We may call it energy, determination, will-power, or other names. I prefer to call it goodness. If we analyze it, we may be able to discern "fighting reflexes" "conditioned" to opposition and

difficulty as stimuli. We may describe in detail emotional elements—visceral disturbances and their attendant sensation-complexes. But that with which I am concerned just now is an “intellectual” element. It can scarcely be called a judgment, or even a theory. It is rather a belief, or an assumption. It may not always be fully conscious, or verbalised; yet it is always present as the foundation of every intelligent or purposeful effort.

The “good man” could not be “good” at all, in the very special sense in which we are now using the term, if he did not assume in his environment a *goodness* answering to and supplementing his own. No one can pull at an imaginary rope. We cannot push at an imaginary obstacle. We cannot walk except on some firm support. We live, we move, we undertake, and we succeed in our undertakings, only because the world at once resists and cooperates with us. The “good man” discerns, however dimly or confusedly, the cooperation in the resistance. That is *faith*.

This is not faith in his own powers alone. That would be nonsense. If the environment were utter chaos; if no effort or forethought of his could possibly bring to realization any of his desires; his effort would be paralyzed by a sense of its own futility. Indeed, he would not so much as know what effort is. Desire itself could never arise. He would be incapable of anything but blindly reflex actions and such a vague mass of feeling as we may attribute in imagination to an oyster.

To act otherwise than reflexly is *possible* only in an ordered environment. And whenever intelligent or purposeful behavior appears, it evinces a *trust in things*. To the extent to which this trust is not merely occasional but characteristic, and is directed not simply to this or that particular situation but to life as a whole and to the environment in its totality—to the Universe—it is religion.

Religion, then, is *trust in a cosmic goodness*. If we turn from our “good man” to that of which he is the symbol, religion is M A N ’S attitude toward his environment—let us say, the Universe—when M A N confronts its vastness and mystery with hope and aspiration.

Every discovery of science is a vindication of religion, *if* this definition can be made good. Every achievement of civilization can be traced to a faith that is essentially religious. Not one high human enterprise can possibly be carried to successful completion severed from its roots in religion.

It is no longer an exasperating mystery that religion, "exposed," "refuted," outlawed, banished, makes its way slyly or in open triumph back into the hearts of men. To outlaw it is to outlaw one's very self. To be irreligious is simply to be sub-human. To abandon religion is to surrender hope and high emprise. It is to relinquish all dreams of happiness and lasting satisfaction, to turn from energetic, eager labor to dejection, apathy, and despair.

Our definition must be either very original, very profound, or very foolish. For it is evident that most men do not believe that religion is anything so simple, so fundamental, so vital, so ineradicable, or so indispensable. If they did, they would not be forever attacking or defending it. Only a few hard-bitten, desperate souls, hopelessly at odds with life, would disavow it. They would find no listeners.

The rest of us would feel no interest in the controversy. We should see that all the particular religious beliefs and practices are only symbols of something that is very different—something very simple and very profound. Without dismay we should watch the great symbols glow and fade, knowing that they are only flames flung up from the central fires of human energy and aspiration. Until the fires grow cold, new flames will ever leap up to replace those that die away and to illumine the field of our endeavors.

Religion, then, is the *elan* of the human race. Trust in a cosmic goodness is the common and unifying element in all the particular religions. Even those that seem the most absurd or hideous are but variations upon this theme. Dogmas are attempts to define, to explain, and to defend men's hopes. Rites and ceremonies are the struggles of faith to realize and lay hold on the mercy that, it is felt, must underlie the rugged and apparently hostile facts of life.

An awed sense of *the explosiveness of things* is about all that can be discerned in the lowest forms of religion. A mysterious power, often called *mana*, is believed to pervade everything. The most trifling object, the simplest act, may be attended by appalling consequences. One who can learn the laws by which events happen can control them and bend them to his purposes. So he can insure rich harvests, plentiful supplies of game or fish, victory in war—in a word, whatever seems to men good.

The point is that there *are* laws and that men *can* achieve well-being. That faith is religion. The environment is not hopelessly

capricious nor invincibly hostile. Man is not utterly helpless or alone.

The first guesses, the first attempts to control events, are of course in the light of later knowledge grotesque. Strange incantations and rituals develop. Soon they lose their character as scientific experiments. They congeal into superstitions. Progress is halted until they can be shattered and men will experiment anew with wider knowledge and improved methods.

Religion, however, must not be confused with any of its merely incidental features or its temporary expressions. It is neither incantation nor ritual, nor both together. These are but conjectured ways to happiness. Religion is not a way at all, but the confidence that there is a way.

The distinction is both real and important. The first ways are certainly nearly all wrong. If religion were merely a collection of devices to control the weather, multiply possessions, or vanquish enemies, it would collapse when the particular devices are discovered to be futile. Were men limited to their first conjectures, they would soon sink into inertia and despair. Actually we see that religion survives one disillusionment after another; and man rises from each disappointment still believing that a promised land lies just ahead. Religion is at once the energy that drives him, the hope that beckons him on, and the faith that runs before achievement.

At a higher cultural level, spirits and gods appear. Varied as are their forms, they are all embodiments of hopes. They are beings from whom men may purchase or entreat favors. The Roman poet Lucretius was wrong when he wrote his famous line, "Fear made the first gods." And Rabbi Lewis Browne is wrong again, when he accounts for all religion by the simple formula, "Men were afraid."

Fear, the psychologist knows, is a profound and extensive organic disturbance. Fear alone produces *nothing* but panic. If men do not act merely frantically in terrifying situations, it is because something other than fear controls them. If panic turns to religion, it is because there is present at least a gleam of hope and a measure of sanity. Religion is not fear but the attempt to master it.

No man, civilized or savage, ever prayed to a being of whom he was only afraid. If he prays or sacrifices, it is because he hopes. An American chauffeur does not pray to his automobile, because he

knows it is no use. A Hindu may. He thinks there is at least a chance. A man may believe, with good reason, that the deity in control of his destiny is ferocious. This is not religion, until it occurs to him that the god may be appeased. Divine favor may be won. At least the worst of the divine anger may be averted. So the most horrible of idols, the most atrocious and cruel rites, bear testimony to man's irrepressible hope that things are at least not quite so bad as they seem.

From the supreme horror savage man was probably free. It seems never to have occurred to him that his cries would win *no* answer, that there was no meaning at all to nature, no goodness anywhere in the vast universe responsive to his own. To feel the anguish of that discovery, if it be a discovery, is one outstanding characteristic of our own culture. "We have seen the spring sun shine out of an empty heaven to light up a soulless earth; we have felt with utter loneliness that the Great Companion is dead."³

However we extend our survey, we shall always find that religion is a faith in a cosmic goodness. It is a faith sometimes tremulous and uncertain, sometimes stalwart and assured. Whether the one or the other, it is ineradicable and indispensable. If particular formulas prove inadequate, it will devise new ones. The only alternative to it is apathy and inertia.

But religion is not alone hope. There would be no ground for hope unless in some way, and in spite of appearances, the Universe were *already* good. So religion is hope *and* appreciation. It is trust illuminated by the vision of goodness already present. For Christians all this is symbolized in The Heavenly Father.

What controversies we should be spared, if we could only realize the functions and the limitations of a symbol! A symbol is of value because it at once resembles and does not resemble the object for which it stands. We call Lindbergh "The Lone Eagle." It is a splendid metaphor. But it is splendid just because Lindbergh is *not* an eagle. If he were, we would shut him up in a zoo. When Chris-

³ Clifford: "The Influence Upon Morality of a Decline in Religious Beliefs," in *Lectures and Essays*, Vol. II, p. 250. Cf. also Theodore Dreiser. "I can make no comment on my work or my life that holds either interest or significance for me. . . . Life is to me too much a welter and play of inscrutable forces to permit, in my case at least, any significant comment. . . . In short I catch no meaning from all I have seen, and pass quite as I came, confused and dismayed." (Quoted in "The New Student," April, 1929, p. 9, from *The Bookman*.)

tians speak of the Great Power that is the Ultimate Basis of All as "God the Father," they do *not* mean that He must have hot water every morning for His shave. What *do* they mean? What is it that is symbolized?

Stripped of all metaphors, the Christian faith is that, if men will confront the Universe not with fear and hostility but with love, reverence, and a will to cooperate, things will "break well" for them. If they will talk with I T, as loving children would with an ideal father, they will receive "answers"—insights, peace, and happiness. Time may bring health, success, and obvious pleasure. It may bring sickness, failure, and seeming misery. Whatever comes, in the depths of man's being, it will be well. It will be "well with his soul." Even death can be only another triumph for life that is consciously in touch with the Energy of the Universe.

Him or I T? Nature or God? Universe or Heavenly Father? It is almost evidence of a cosmic irony that men should engage in bitter controversy over these terms and contend for one or another of them, when they all mean so nearly the same thing. There is not the least difference in meaning, so long as we are concerned only with the present facts and their causes. Of the great Power or Principle that serves for the last term in our thinking, we know only one thing. I T has given us the kind of a world we have. I T is revealed in the world which I T has made. Our thought moves, and must move, in a circle. From known facts we infer a Cause. But of the Cause we know only that it has produced the facts. What name we shall apply to I T is a matter for individual tastes? Mumbo Jumbo would do as well as Zeus, if by Mumbo Jumbo we *mean* the same.

Man's hope, though, is a *new* fact. When man hopes, he reckons not merely with the world he knows but with the world he doesn't know—even with the world that isn't yet. And the hopeful man does not seek an escape to a world of dreams. He grapples with realities and transforms them. He builds cities where there were only jungles or deserts. He carves rocks into statues. He extends the span of his life and postpones till its very end the infirmities of old age.

But to struggle, he must find firm foothold. And this is just what blind force, matter, energy, or even "Nature" cannot afford. It is impossible to discern in them the goodness which must supplement and cooperate with man's own.

A cosmic goodness must be defined in other terms. It cannot be derived in any way from that which is not good—from "dirt going it blind" (to use an expressive phrase of Dr. Fosdick's). What religion means by an "Infinite Spirit" or an "Almighty Father" is a goodness at the heart of things. Probably it can never be proved either inductively or deductively. But it must be assumed, if human effort is not to collapse in one vast despair. In "God the Father Almighty," as Christianity has given meaning to the terms, men register the highest and most exuberant—it may be the wildest and most extravagant—of their hopes.

"God" is as bad as "blind force," if He has given us no better a world than "blind force" would have produced. "Nature" is as good as "God," if it is to "Nature" that we owe the poets, the heroes, and the saints of our race, and if we can trust "Nature" to satisfy our craving for a life that is truly good. Indeed "Nature," if it is all that, is obviously only another name (I think a very inferior one) for "God." If "Nature" has given the world Jesus Christ—"Nature," for any Christian, is "God" enough.

Can the cosmic goodness ever be conclusively proved or disproved? It seems scarcely possible. To achieve this, we should have to know all the facts of the Universe and interpret their relations without error. That at best is a remote possibility. In the meantime we must live. Life demands adventure. We venture upon either our hopes or our misgivings.

Today is a strange time for despair. To be sure, it is apparent that the religions of the past pictured the cosmic goodness in too simple a fashion. We can no longer believe, for example, in a divine errand boy executing the orders that we call our prayers. Our universe is vaster, in many ways sterner, than our ancestors supposed. And yet today we understand, as we have never understood before, how "Nature" serves, or at least can be made to serve, man's purposes—even those that are subtlest and most spiritual.

We know that the sun's light was stored in forests that were later buried deep in the earth. So coal was prepared—a storage battery surpassing any that man has yet invented. In deep mines Power lay hid, to be released when men had learned the secret of its use. Water and fire are yoked together to transport him in safety and with amazing speed over vast distances. Even the air sustains

his flight. The lightning has made of his speech "winged words" in a sense of which Homer never dreamed. Physical health, for individuals or for communities, is no longer a matter of chance. Psychology seems to be at least on the threshold of knowledge that will transform life in its most inward aspects. What greater goodness could Omniscience and Omnipotence devise than a world in which there is no limit to what intelligent effort may achieve?

Have we been speaking of material progress only? Is all that we have mentioned something entirely apart from religion? It depends upon the use to which men put the goodness of the Universe. Words that fly to the most secluded corners of the earth may carry only orders to buy or sell; or they may bear messages of light and inspiration. Speeding planes and leviathans of the air may carry poison gases and promoters of frauds; or they may transport works of art and the apostles of new and grander faiths.

In all this there is surely the stimulus to grander hopes and higher emprise than man has hitherto dared to contemplate. A more wonderful world than he has ever before even imagined calls for his admiration and challenges his spirit. To hope, to adore, to dare, is religion at its highest: and never before have there been such splendor to adore, such grounds for hope, or such adventures to undertake. The situation calls not for retreat but for advance. If our age fails to make the advance, the failure may well prove the supreme calamity of history. The disaster, if it comes, will have about it a strange and tragic irony—as when a victorious army flees in panic from its beaten and routed foe.

THE PHILOSOPHY OF DR. McTAGGART

BY GILBERT T. SADLER

SINCE the publication of the second volume of *The Nature of Existence* which completes the work of this great Cambridge philosopher, Dr. McTaggart's credit has steadily risen. He was known in his lifetime as a brilliant debater and inspiring teacher: but, though he had published important works,¹ his great system of philosophy was only partially delivered to the public at the time of his death. It can now be studied in its completeness in the two volumes of *The Nature of Existence*. This work is the positive and logical presentation of what McTaggart desired to say. His previous works on Hegel and *Some Dogmas of Religion* had prepared the way for this last remarkable effort. Briefly, he believed the universe to be souls related in groups or primary wholes, or in one primary whole, perhaps. Their unity is a unity of system, not a unity in one Person or Super-Person or God or Unitive Mind. It is like a state, consisting of men. Thus McTaggart was both a Pluralist and a Monist: a Pluralist as to the sou's of which reality was composed: and a Monist as to the unifying love which united or related souls to one another, in varying degrees of love.

Such, in brief, was the philosophical result of years of study, discussion and tuition at Cambridge. Drafts of his books used to be submitted by McTaggart, to his friendly critics at Cambridge, ere he published his works.

It is necessary to state the main philosophical argument of Vol. I of *The Nature of Existence*, and then an estimate can be made of the value of the second volume recently published. Volume I

¹ His principal publications are: *Studies in Hegelian Dialectic*, Cambridge, 1896; *Studies in Hegelian Cosmology*, Cambridge, 1901; *Some Dogmas of Religion*, London, 1906; *The Relation of Time and Eternity*, Berkeley, 1908; *A Commentary on Hegel's Logic*, Cambridge, 1910; *The Nature of Existence, Vol. I*, Cambridge, 1921; *The Nature of Existence, Vol. II*, Cambridge, 1927.

declared that *only souls or selves exist, and their parts are perceptions, which are divisible ad infinitum*. All selves are related, each loving one other or a few, or a group of other souls or selves. Each is unique, and so has a sufficient description. No two plants, animals or men are exactly alike.

What exists then is souls, and so groups of souls, and parts of souls, and their perceptions: briefly, souls and their perceptions. And all are related and form a universe, whose unity is not a God of any kind, but it is love in all stages or degrees. Every substance (viz. selves, parts of selves, and groups of selves) is in relation to each other, and so each is unique, and with an infinity of relationships or qualities. Each self (or group of such, or parts of such) is unique to some extent, and so has a sufficient description. Each has a varying relatedness, or relationships. So each has an *exclusive* description. Characteristics are inter-dependent, and some determine others, or cause others. Hegel said that everything is determined by everything else. The universe is an organic unity, and the parts manifest the whole. There is an inner teleology. The parts are alive and in relation. So the whole is an organic or living unity, not a unity of composition, like a book of words. The universe is of living parts overlapping with "enormous complexity." But now a difficulty occurs, and it may be best represented by an example. Take a family of two brothers the parents being dead. The family is real, but it only now consists of two brothers. Each man has love to the other one, in some degree. But the idea of a family does not of itself give us reality, as it presupposes people but does not describe them. They might be father and son, or widow and sons, and so forth. We cannot reach reality except by overcoming such presuppositions and finding real persons who give us something sure, for they only have parts within parts to infinity. *Every substance, being unique, must have a sufficient description.* So groups of souls (say a family) and souls, and parts of souls (their perceptions) must have, each, a sufficient description. Now we can only realise that if the parts are *perceptions*, and if such are determined or influenced by other souls. A = a group, say a family. B and C = 2 sons, the only parts left of the family of A. These perceive (and love to some extent, therefore) one another, and so cause one another to feel such love: i.e. each has a part (or perception) determined by the other, corresponding to the other. Selves

and their parts are the sole reality. Selves are the realities that *determine* their parts of other selves (= *perceptions* of other souls, or of parts of souls, or of groups of souls). Perception is the only power by which we can get an infinite series of parts within parts to infinity viz. B perceives C, i.e. loves C in some degree. So C determines a part of B, viz. B's perception of a love to C. C educes that perception or love. C determines B in that part of B. B may love others also, or have a faint affection to others, and again complaisance to yet others: and all for C's sake. "Love me, love my dog" even! McTaggart works out these implications of love in detail. We get then B! C, B loves C. C *determines* that part or perception of B. B! B! C = B perceives that he, B, perceives C; and so on infinitely if we desire to pursue the perceptions of perceptions.

But McTaggart says no one really does pursue it down and down. Enough that we have found reality as souls, and their perceptive love to other souls.

McTaggart shows us that if we do not love we are not really ourselves. We may be clever animals, or rich citizens, but we have not found (i.e. felt) our eternal nature. We doom ourselves to a terrible awakening some day. "*Determining correspondence*" is thus a relation between souls, i.e. between a soul C, and part of another soul B. B! C = B perceives (and so loves) C, in some degree or sense of the term perception. C determines a part of B thus. No two souls are alike: each is unique, and so had a unique description.

The King of England 1500 A. D. = Henry VII, and no one else. Each soul has an infinity of parts, for no soul is simple, or a single fact.

But reality is souls, parts of souls, and groups of souls, or selves. If we take groups of souls we get no true infinity of parts, for there is no sufficient description possible of a group of souls. The group presupposes males or females, young or old souls in its group, and we need to go to the souls themselves to get a sufficient description. Nor can the parts of souls give us sufficient descriptions. They again presuppose various powers in the souls. We need, then, to fix our attention on *the unique souls of the universe*. They alone give us an infinite divisibility that is not a vicious infinite by endless presuppositions. Our souls have implications, viz., our per-

ceptions of one another, and their parts within parts to infinity. It is impossible to reach reality—substances with sufficient descriptions—by a category or description such as “family,” for it does not decide what the parts of it are: they may be husband and wife and child, or brother and sister, and so forth. It *presupposes* so many possibilities. We must get to a category which tells of something that is unique and self-contained, and from which the parts are implied *ad infinitum*.

The only category is a self. When we reach selves we have substances, spiritual substances whose parts are perceptions, and their parts are perceptions of these perceptions, and so on *ad infinitum*.

Hence reality is selves or souls, all eternal and related, and perceiving other souls, and loving in some degree whom they perceive: for there can be no real perception without some degree of sympathy or love.

The universe is such souls, in one or more primary wholes or groups of souls, and perhaps all in one such whole or gathering of inter-related souls of all stages, degrees, kinds, in some attitude of love, and its joy. The argument of McTaggart is of this nature. To recapitulate—substances are souls of all degrees, and their parts, which are perceptions. But such exist in and by their relatedness. If I see a stone, I see lowly souls or selves. All is alive, in some degree: and all is related to some other souls, and to their parts or perceptions. Now no substance (i.e. self) is simple. It is divisible, and divisible therefore infinitely, for its parts are divisible.

But groups of souls give us no infinite divisibility, for they have no definite relatedness to souls. So with parts of souls. They give us no starting-point for an infinite divisibility of parts. These (groups or parts) presuppose various souls below or above them, and they (the groups or parts) have no sufficient and unique description. Only souls can give us infinite divisibility. From them proceed parts, viz. perceptions, and they have parts, viz. perception of a perception, and so on down *ad inf*. They imply their parts within parts. Groups and parts of souls only presuppose a variety of parts, giving us a vicious infinite.

In volume II McTaggart deals with the probable rather than the necessary facts. He declares that *souls are not in time, that matter does not exist, and that love really unites souls, each to one or a few*

other souls. Love is not pity merely, resulting in almsgiving, as in some religions. It is real emotional love to a person or persons.

Hence such persons are eternal, for love is inexhaustible in its nature. Their perceptions are really grades of love to other souls, or to what are dreaming souls, as forms of so-called "matter."

We thus come to the many themes with which our author deals. *As to "matter,"* McTaggart says it is really souls or selves of a low order. It seems to have primary qualities (as size, shape, position, mobility and impenetrability, excluding other forms of "matter"), and secondary qualities (as colour, hardness, smell, taste and sound). The latter are effects produced by something on an observing object. "Matter" cannot exist, as it has no parts within parts to infinity. Even space is now said to be made up of "indivisible points of matter," and so does not exist. There can, then, be no "determining correspondence" as to matter, and so it does not exist. It has no perceptions of souls, and perceptions of those perceptions. *As to the idea of God,* McTaggart discussed it in *Some Dogmas of Religion*, and concluded there could be no Omnipotent God, and no non-Omnipotent God either. In Volume II of *The Nature of Existence*, we have a chapter on the subject. "No self can be part of another self." "Every primary part is a self." So there can be no All-inclusive self, as God. If God be one self among many selves, He would not be creative of selves. All selves must have come into existence together, or else be eternal. So there is no God, either Creative or Unitive. *As to time,* there is no A-series of past, present or future: and no B-series of earlier and later events: though we believe these to exist. But there is a C-series of expressions to us of eternal events: as we read a book in stages, which yet exists all the time and all at once. So we count 1 2 3 . . . or A B C . . . , whereas numbers and the alphabet exist all at once, and all the time.

History is of events which really and eternally interpenetrate: in a timeless order of souls, of love and their relations to one another. "We have come to the conclusion that there is no real A series and no real B series (before and after), and no real time-series." (p. 30.) Yet there is a real series, but it is not a time series. This is the real C series, felt by us in misperceptions, not entirely erroneous. The terms in it are really connected by *permanent* relations, like A, B, C. . . . our experiences of time occur in a

“specious present”; in what seems to be a “present,” as opposed to past and future. There is no such thing really. We have experiences which really are aspects of our external experience.

We misperceive the C-series (a reality) as if it were a B series of earlier and later facts of experience. The C-series actually exist, in eternity. *In regard to immortality*: McTaggart believed all souls to be eternal in an eternal present. The “C-series” is misconceived as if it were the B series of events before or after any given event. The C-series is not a time-series. It moves from less inclusive to more inclusive reality: and such a process is outside time.

“All that exists is really timeless. What seems future is present in some sense now.” “The system of the determining correspondence parts is the universe, since it contains all existing content.” “If heaven is timeless, it cannot be really future.”

“Selves, though not in time, appear as in time” (.372).

“The same is true of all parts of selves which are determined by determining correspondence: viz. the perceptions which each self contains of selves and of parts of selves to infinity.” “Nothing is really past, for nothing is an event in time.”

Thus, our ordinary events, as having a breakfast and writing a letter, are related to other events in our self-manifestation. In that series we are but partly expressing ourselves. We exist as a whole eternally but we partly express ourselves, and call that our “life” here, or a series of such lives, by reincarnations. We are more than we think we are.

What is the heart of every soul, then, but love? McTaggart discusses this in great detail, and with a very great insight. It is an astonishing piece of work to find, in a philosophical book, the power and enthusiasm of a soul of love, freely given to us.

“The entire life of each self centres round and depends on his love for other selves, and, as I believe, *it is love which is the supreme value of life . . .* Love has no end but itself” (II p. 392).

“I shall never permanently lose my friend or his love.”

“A self will love every other self whom he perceives directly.” In the future, beyond death, after our reincarnations here, love will be stronger and more joyous than here and now. Barriers will be swept aside. “Unity will be unhampered.” Uncongenial qualities will be largely overcome, in “absolute reality.” All perceptions of

other selves will be states of love. They ever are such states really, but we misperceive them here on earth. "Absolute reality is timeless and . . . infinite." (p. 160). Love here cannot keep permanently in its intensity. We are drawn aside by life's toil. But in the full life to come love will be free, unfettered, ecstatic even. By determining correspondence ($B!C = C$ influences or determines B, and so B perceives or loves C) one soul differentiates another. A chain of causation runs through the universe then.

There is, then, no space (no fixed lengths of miles) and no time (no fixed experiences of years), but *only souls in love with souls*; and thus kindly to all who are associated with the beloved sou's; and complaisant to all parts of the beloved soul or sou's.

And if the beloved one has faults, even these are tolerated, if not a cause of enhancing the love felt to that soul. For shadow can relieve and make brighter tints more beautiful. McTaggart endeavoured to show and *explain the evils of life*. He has treated "Evil" as error, vice, pain and disharmony. But what of loneliness, ennui, disappointment, over-work, a nagging wife or husband, poverty, fear of death, disease, physical weakness without pain, being hated or hating another?

In the last section of *The Nature of Existence*, our author wrote "There may await each of us, and perhaps each of us in many different lives, delusions, cries, suffering, hatred, as great as or greater than any which we now know. All that we can say is that this evil, however great it may be, is *only passing*. The final stage is one in which the good infinitely exceeds all the evil in the series by which it is attained. Of the nature of the good we know something. We know that it is a time'ess and endless state of love,—love so direct, so intimate, and so powerful that even the deepest mystic rapture gives us but the slightest foretaste of its perfection. We know that we shall know nothing but our beloved, and those they love, and ourselves as loving them, and that only in this shall we seek and find satisfaction. Between the present and that fruition there stretches a future which may well need courage. For, while there will be in it much good and increasing good, there may await us evils which we can now measure only by their infinite insignificance as compared with the final reward."

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