God: She's Alive and Well

An anthropological study of mother goddess worship in eastern India shows how a traditional symbol can function in a modernizing society

BY ROBERT J. TROTTER

The history and universality of mother goddess worship is illustrated by such artifacts as the ancient Venus of Willendorf (above) and a pre-Columbian effigy vessel from Peru. The persistence of the mother goddess tradition is evidenced by the importance it still has in some cultures.

Mother's Day was every day for paleolithic people, said Aldous Huxley. And he may have been right. Archaeological evidence, consisting of numerous carvings, statues and cave paintings of women, suggests that mother goddess worship probably played an important part in the cultural lives of our Stone Age ancestors—as it still does in some parts of the world.

The first evidence of prehistoric mother worship turned up in the 19th century with the unearthing of a number of carvings depicting the feminine figure. These artifacts, which go back at least 30,000 years, were carved in stone, bone, antler and even mammoth tusk and tooth. They have been found at sites across Europe and into Russia, the most famous probably being the small (about four inches) Venus of Willendorf, found in Willendorf, Czechoslovakia.

Although most of the statues or figurines depict naked women, they are not usually considered erotic, pornographic or even art for art's sake. For several reasons, most anthropologists have concluded that these carvings, which outnumber similar works depicting men by about ten to one, were part of a religious or magical tradition. Most, like the Venus of Willendorf, are highly stylized or symbolic, with special emphasis placed on the breasts, buttocks and genitals. This suggests that they may have been related to reproduction rites. Women may have worn or carried such charms in the hope of becoming pregnant or of having a safe delivery. All members of a group interested in increasing their numbers may have paid special homage to a goddess or symbol of fertility.

Mother worship not only has a long history; it has been nearly universal, with almost all cultures employing some sort of feminine symbolism in their deities. And any cultural phenomenon so long-lasting and pervasive is presumably important to the study and understanding of human culture—anthropology. At the recent meeting of the American Anthropological Association (SN: 12/13/75, p. 375) a symposium was devoted to inquiries into mother worship. Particular attention was paid to mother worship in Indian, Mexican and African contexts. In these cultures, the mother symbol as nurturer and life giver is more than a remnant of ancient traditions. The recent history of mother goddess worship in India, for instance, suggests that the symbol not only survives but is a functional and important part of an evolving and modernizing society.

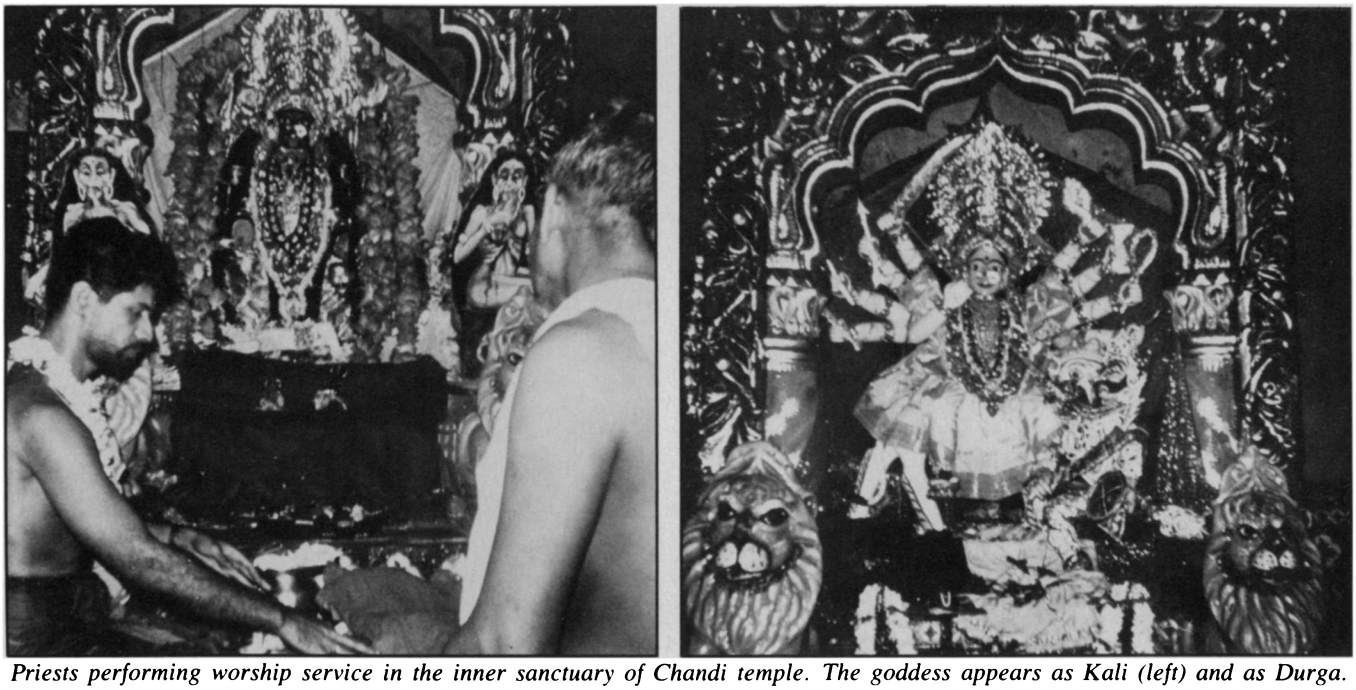
In India, mother worship has historical roots dating back to the Indus Valley Civilization (perhaps 5,000 years). Today, the mother goddess remains a key symbol of modern Hinduism. She has many aspects and is worshiped in a variety of ways. James J. Preston of the State University of New York College at Oneonta collected data on mother worship during a 12-month stay in the state of Orissa in eastern India.

Some studies have shown that religious institutions tend to reinforce conservative themes in Indian society and that religion is one of the "last bastions of traditionalism." But Preston found that under certain circumstances religion, and goddess worship in particular, can be an important force for social change and modernization. A case in point is the goddess Chandi as she is worshiped in her temple in Cuttack, the largest commercial center in Orissa.

During British rule, there were 26 feudal states in Orissa. To gain the allegiance of people in their territory, rajas or feudal rulers often adopted local deities as tutelary or guardian goddesses. In some cases, what were once tribal goddesses gradually became linked with the state deity and the Sanskritic form of the Hindu mother goddess Durga. The rajas would worship at a local temple, such as that of Chandi, and at an annual ceremony they would make a show of military strength. The royal sword, weapons and other regalia would all be dedicated to the goddess, and the authority and military strength of the rajas would be displayed with the sanction of the goddess. In return, the rajas helped support and maintain the local temples.

When India gained independence in 1948, the rajas lost political power, and local temples lost the traditional patronage of the rajas. Many Chandi festivals began to disappear and goddess temples faced a financial crisis. Mother worship, however, did not diminish, says Preston. It has taken other forms and continues to expand and grow with new patronage and through different media.

One of the most popular aspects of



Photos: James J. Preston

Priests performing worship service in the inner sanctuary of Chandi temple. The goddess appears as Kali (left) and as Durga.

mother worship seen in Cuttack (as well as in other parts of Orissa) is the recent growth of interest in the annual festival of the goddess Durga. The celebration, known as Durga Puja, lasts for 16 days in Cuttack. In recent years it has become the city's most widely celebrated festival, attracting thousands of people from surrounding districts.

For several weeks prior to the celebration, workers using special clays taken from the river Mahanadi construct more than a hundred scenes containing life-size statues of the goddess Durga and other deities. The elaborate scenes, which can be seen under construction along the main commercial arteries of the city and in small neighborhood enclaves, are beautiful, intricate and expensive. They are commissioned by caste associations, groups of merchants, groups of students and sometimes by a wealthy individual.

During the last three days of the festival, celebration builds to a peak with dancing in the streets, exchange of gifts (such as saris, sweetmeats and special curries) and finally a day-long procession. The religious scenes are carried through the streets to a central bazaar where they are judged for beauty and intricacy. The group whose statue wins gains considerable prestige. The procession then continues to the rivers that border the city where, one by one, the statues are thrown into the water. The crowds cheer as each scene sinks beneath the currents, and dancing continues throughout the city.

Although Durga Puja is mainly a street festival, people also attend several goddess temples, especially the temple of Chandi. Each evening of the festival, Chandi is dressed in one of her 16 different aspects, and thousands of people crowd into the small temple to pay their respects. On the final three nights, Chandi

In Cuttack, the Chandi temple is visited by more than 1,500 people each week.

appears as Saraswati, the goddess of learning, as Kali, the blood-thirsty goddess of death to whom 400 goats are sacrificed and finally as Durga, conqueror of the forces of evil and defender of the people—but no longer in the service of the raja.

Because thousands of rupees are spent on statues, gifts and religious ornaments, Durga Puja has had an important economic impact on the city. Many of the gifts are purchased at neighborhood shops and at licensed concessions on the temple grounds, and some commercial enterprises make most of their yearly income during the last three days of the festival. This activity has helped the Chandi temple to prosper. With increased patronage from the merchant classes it has become a self-sustaining religious institution. While Preston was there, plans were being made to spend the temple's profits by increasing land holdings, building a lodge for pilgrims and starting a religious school to train priests in the mother-worship tradition.

The economic consequences of mother worship have been important, but there is also a psychological component. Interviews conducted by Preston in Cuttack suggest that mother worship has been important in helping people resolve new problems arising from rapid urbanization. People who move to Cuttack, for instance, face new pressures resulting from less reliance on caste and kin and the need to fit in with unfamiliar occupational and neighborhood groups.

"An important modern function of the goddess in Cuttack," Preston has found, "is to help the devotee alleviate stress resulting from competition, alienation and dislocations associated with urban life." At the end of the day, people in the temple call out to mother Chandi with tears in their eyes as they unburden themselves. A typical utterance is: "This is our soul. When a man falls down he cries out *Ma* [mother]. We do not utter the name of the Father when in trouble. At that time we turn to the Mother." Another example: "When I fear trouble, I feel sorrow. I call the Goddess. And I know then that I am being helped." Many people simply repeat the word *Ma* over and over like a mantra to bring the Goddess into their consciousness.

Chandi is called upon not only as a comforter and healer but as someone to grant wishes. Money, jobs, promotions,

Continued on page 110

OFF THE BEAT

Physicists vs. Mathematicians: A Theory of Groups

To the casual leafer through the literature, mathematicians and physicists often look like similar breeds of cat. They use many of the same words. Their publications are full of similar arrays of arcane symbolism that often come in several layers and use up all the letters of the Latin and Greek alphabets and some of the Hebrew and Cyrillic as well. Mathematics is the language of physics, and every physicist must learn to speak it. Physical problems have often been the genesis of mathematical developments.

Yet the two species of feline are really basically different in attitude. Physicists are interested in material connections among phenomena and their physical description. Mathematicians are interested in the relations of numbers. Experiment is the physicist's ultimate judge; logic is the mathematician's only constraint. See what happens when one of them gets among the others.

The mathematician in this case is Irving E. Segal of the Massachusetts Institute of Technology, who came before a gathering of astrophysicists to attack dogma number one of their cosmology, the expanding-universe hypothesis. The expanding universe goes back to Edwin Hubble, and it arose from his observations of the redshifts of distant galaxies. One of its prime data supports is the so-called Hubble diagram, a graph of luminosity versus redshift. Hubble proposed that the farther a galaxy is from us, the greater should be its redshift. A law of optics says that the farther away a luminous object is, the dimmer it looks. So a diagram of apparent luminosity versus redshift should yield a straight linear relation between the two, the greater the redshift, the dimmer the galaxy.

In fact it does so only by arm twisting. The data points look very different from a straight line. The physicists say this is not because Hubble was wrong but because the galaxies so far recorded are not a truly representative sample. In other words, physicists will save their simple physical relationship even at the cost of manhandling the data somewhat.

The mathematician, Segal, says let's not do this finagling. He sees two sets of numbers that have a functional relationship to each other and asks himself what sort of function best fits the numbers. Statistical analysis leads him to a nonlinear, square relationship that makes hash out of the expanding universe.

The physicists jump all over him for this. Not that they hate statistics. They love statistics, use them all the time. But a physicist's statistics have ultimately to illustrate a physical connection, and the assembled astrophysicists find none behind Segal's square function. So they tell him he is using an unfair sample.

Sometimes the interdisciplinary tension is more fruitful. In a recent lecture, Raymond W. Hayward of the National Bureau of Standards, outlined some of the history of the unification of the theories of the weak interaction and the electromagnetic interaction, two classes of force that particle physicists have to deal with.

The theories of such interactions or parts of them are often written in terms of what mathematicians call group theory. A very important group in this instance is the intermediary particles that embody the forces of these interactions and carry them from place to place. In the older theories there were three such particles, one, the photon, for electromagnetism, and two, positively and negatively charged W particles for the weak interaction.

Mathematically these particles are members of a group that ought to have a fourth member. Mathematicians and mathematically minded physicists ached to complete the group. The characteristics of that fourth member made it to be a neutral intermediary for the weak interaction. Inclusion of this particle, usually designated B, was one of the things that made theoretical unification of the two interactions possible, but it demanded the existence of weak-interaction processes that had never been seen, the so-called neutral-current processes. Physicists thought the unified theory a beautiful accomplishment, but few of them would have staked their oath on it until experimenters, inspired by the mathematics, began to find the neutral-current processes.

Another example is so old it's in the textbooks. Maxwell's equations, which were published a hundred years ago, summarize classical electrodynamics. One of the things they predict is radio waves. Curiously, the equations for a transmitter radiating waves are symmetrical. In addition to waves radiating away from the transmitter, which are easy to understand physically, the equations predict infalling waves, arriving at the transmitter from an infinite distance. Physicists have no way to understand these infalling waves so they calmly throw them out as unphysical. When this is presented by a physics teacher to mathematics majors, they jump up and down and scream: "How can you throw away perfectly good solutions to perfectly good equations?" The physicist's reply is that you have to have some experience with your hands in the dirt to know what is physical and what is not.

Or do you?

The equations of special relativity yield solutions for particles that go faster than light. But the rest masses of such particles are represented by imaginary numbers. Nobody could see how an imaginary rest mass could be physical, so the solutions were ignored for a long time. Then some physicists began to point out that if these faster-than-light particles were always in motion and never at rest, it didn't matter what kind of number represented their rest mass since that quantity would never affect the actual physics. What mattered was that the energy and momentum of these particles (which were then dubbed "tachyons") were represented by real numbers and could therefore be physical. So now there are experimenters looking for tachyons.

You never know.

—Dietrick E. Thomsen

. . . Goddess

good health, good scores on school exams, a chance to visit distant relatives and just plain good luck are among the most common requests. Such petitions suggest the flexibility of mother worship, and show how thousands of years of tradition can remain valid in a modernizing society. For centuries people have prayed to the goddess for protection from disease, famine and flood. Now, with the stresses of modern life, they ask her for cash, material goods and opportunities for upward mobilility. Instead of a narrowing of the goddess's functions, as has happened with some religions, modernization may have widened them, says Preston.

He and others have also pointed out that profound changes are taking place within Hinduism all across India. The addition of a neon *Om* blinking above the gopuram (temple gateway) at one temple, the abandonment of blood sacrifices at others and the standardization of Hindu law through legislation are among the most obvious examples. Mother worship at the Chandi temple illustrates some of the more subtle changes that are taking place.

The goddess, Preston says, is part of a larger world view capable of integrating fragments of the past with new social relations between castes, classes and interest groups. She offers new forms of worship fitted to the urban climate, a sense of stability in the midst of change and a link to the past. The temple where the goddess is housed is no longer a quiet place for the pious, but a vibrant hub of city life where there is commercial activity. "Thus," concludes Preston, "as an agent of change the goddess emerges with a new dignity from her previous role as a tutelary deity of the raja. Chandi is tranformed into a goddess of the new India—commercialized, but still sacred—at once both modern and traditional." □