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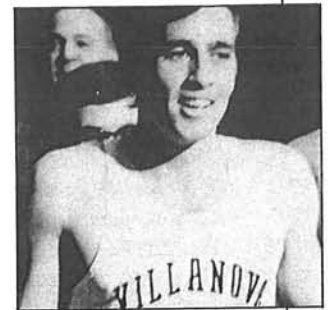
An alumnus seeks to determine the authenticity of this fascinating image on a cloth.

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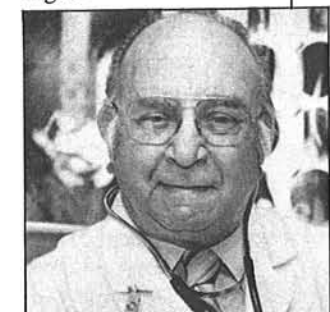
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Front cover: Olympics-bound Villanova senior Vicki Huber. Photograph courtesy of Sports Information. Back cover: Photograph of Father Driscoll by Kelly & Massa.

The Shroud of Turin: Unraveling the Mystery

In a small room in Philadelphia's St. Agnes Medical Center, its walls bare but for a tiny silver crucifix, a broad-shouldered man with probing eyes and thinning gray hair was giving a slide lecture the other morning to an audience of one.

Sharply contrasting images flashed on the screen. A coppery sunset over a still mountain lake. White-gloved men peering at a piece of faintly splotched, ivory-hued cloth on a long, narrow table. A baby's face, rosy with the delight of life.

Then, suddenly, the face of a man, strong and bearded, haunting and serene in the sleep of death.

The image on the fabled Shroud of Turin. Perchance, the face of Christ. Over the years, millions of all faiths had gazed upon it, with piety and perplexity. Few who saw it could forget it.

But no organ tones wafted into the room, no celestial chorus burst into Bach. This was no Cecil B. DeMille production of the greatest story ever told. There was only the friendly, matter-of-fact voice of Joseph M. Gambescia, M.D., a voice scarcely rising above the purr of the projector. "Whatever else we may think, you're looking at the anatomically correct image of a crucified

At the crossroads of faith and science, for three decades an alumnus has been analyzing this haunting image on a simple piece of cloth.

By Hans Knight

man. The man was scourged with whips tipped by small, sharp animal bones. A mat of thorns was pressed down on his head. He obviously suffered incredible pain. His side was pierced when he was already dead. . . . And what you see is not a painting."

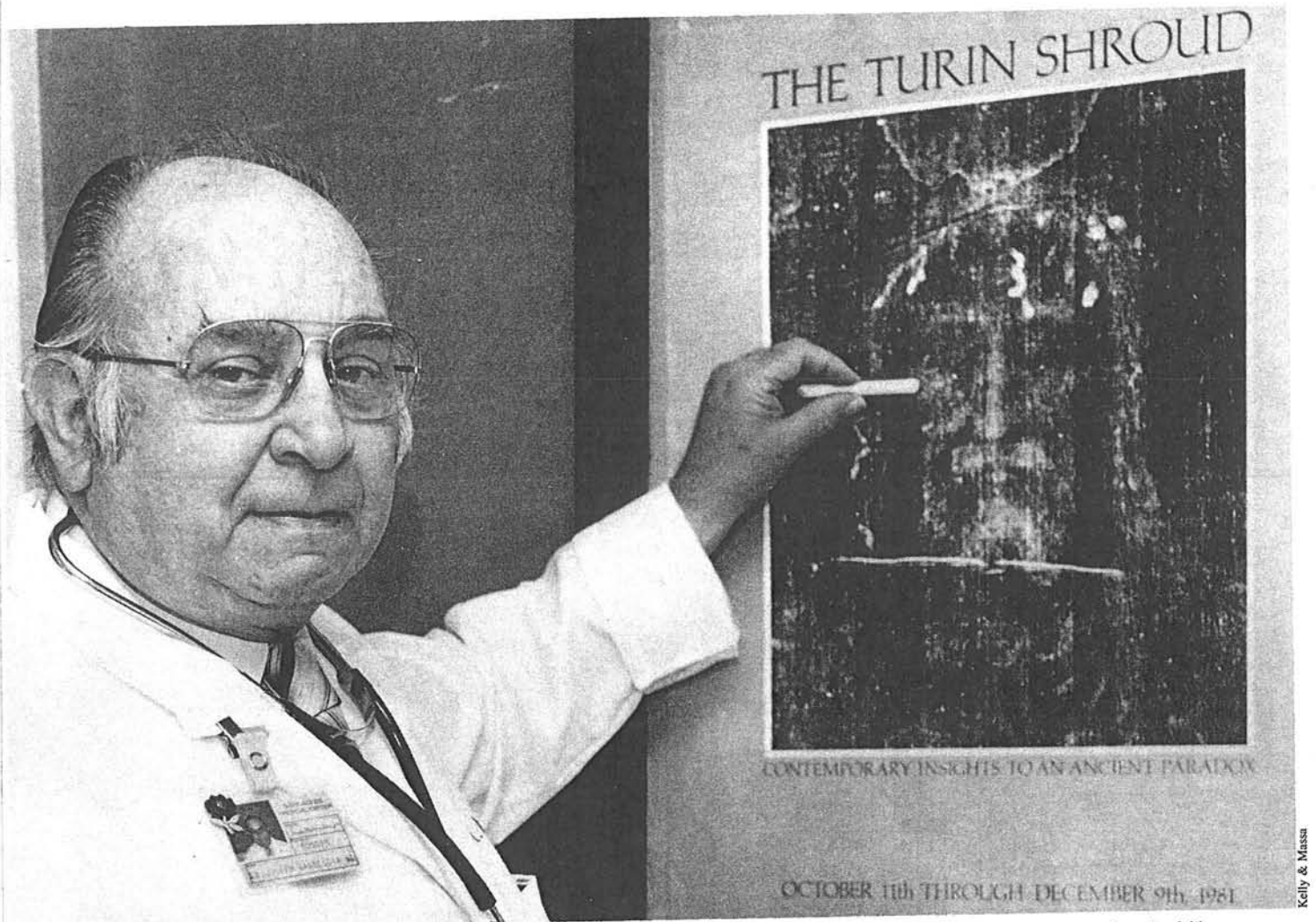
His opinion carries more weight than most. Around the medical world, Dr. Gambescia, a 1941 Villanova alumnus, is known as St. Agnes' chairman of the department of medicine and as professor

of medicine at Hahnemann University. He graduated in 1944 from there when it was called Hahnemann Medical College and Hospital.

Raised in South Philadelphia, he is the personal physician of Cardinal John Krol. He might also be called the "Man from STURP." The acronym stands for the Shroud of Turin Research Project, composed of some 40 eminent scientists and clergymen from the United States and Europe. Like so many Sherlock Holmeses in white coats, they have long strived to solve the mystery of the legendary cloth. Many believe it to be the final earthly garment of Jesus—and others disdain it as a consummate fake.

The church, after centuries of protective hesitancy, is now a prime mover for intensive objective research. Just recently, it has permitted postage-sized samples of the cloth to be sent to scientific institutes in Britain, Switzerland and the United States. Researchers will test the samples by tracing the radioactive isotope carbon 14, which is present in all carbon-containing material, to determine the near-exact age of the shroud. The results will be published at the end of this year.

The church never has stated categori-



Pointing to a photo of the source of his 30-year fascination—the Shroud of Turin—Dr. Joseph M. Gambescia '41 ponders this striking image. From the first century, stories have circulated about a shroud imprinted with the body of Jesus. Many people believe this cloth to be his final earthly garment. Others disdain it as a consummate fake. “Whatever else we may think, you’re looking at the anatomically correct image of a crucified man,” the physician said.

cally that the shroud is that of Jesus. “I doubt,” said Dr. Gambescia, “that it ever will. Too many questions probably cannot be answered. But does it really matter all that much? Our faith does not depend on a piece of cloth. Faith depends on a person.”

In prosaic terms, what is the shroud? Dr. John H. Heller, a biophysicist and a charter member of STURP, put it succinctly in *Report on the Shroud of Turin*, his excellent book on the subject. “The Shroud of Turin is a linen cloth, 14 feet long and 3½ feet wide. The threads were hand-spun and the fabric hand-woven in a three-to-one herringbone twill. On the long fabric are two faint straw-colored images, one of the front and the other of the back, of a nude man who was apparently scourged and crucified. . . . The images appear head to head, as though a body has been laid on its back at one

end of the fabric, which was then drawn over to cover the front of the body. The cloth has many burn holes and scorches; the holes have been patched. There are also large water stains. . . .”

The shadowy history of the shroud rivals the odyssey of the fictional Maltese Falcon. From the first century on, there had been rumors of a shroud bearing the image of Christ. The cloth’s wanderings remained obscure until a chronicler of the Fourth Crusade reported seeing in Constantinople, in 1203, “a shroud that bore the figure of our Lord.” The following year, it disappeared when the Crusaders ransacked the Byzantine capital. Then, in the mid-14th century, the cloth emerged again in the town of Lirey, France. It was, at that point, the property of an illustrious knight, Geoffrey de Charny. No one is sure how he got it, but since the crusaders’ sense of reli-

gious mission was not unmixed with secular greed, perhaps the good warrior took it as a spoil of battle. Almost certainly, the cloth was once part of the Byzantine treasury of sacred relics in Turkey and likely was brought to Europe by a looting crusader. De Charny, in 1354, gave it to the Church of Lirey. Soon after, he was slain defending his French king, Jean le Bon, against the English in the Hundred Years’ War. He took the secret of the shroud to his grave.

In 1389 the cloth went on public exhibition and was promptly denounced by the bishop of Troyes as a fraud. The bishop charged that the cloth was “cunningly painted, the truth being attested to by the artist who had painted it.” So vehement was the bishop’s attack that Pope Clement VII silenced him. The shroud, the pope ordained, could be an object of pilgrimage so long as it was

defined as "a representation" of the true shroud.

In 1453 the controversial cloth passed to Louis, Duke of Savoy. The duke built a special church—the Sainte Chapelle at Chambéry—where the shroud was enshrined with papal honors. In 1532 it survived a fire that charred portions of the cloth but did not damage the image. In 1578 the House of Savoy moved the shroud across the Alps to Turin, where it has remained ever since.

Dr. Gambescia's slide lecture continued. In 1978 the age of high technology confronted the mystery of the shroud. To mark the 400th anniversary of its arrival in Turin, the shroud was displayed under bullet-proof glass, high above the altar of the Cathedral of San Giovanni Battista.

More than 3 million pilgrims and interested tourists filed past the relic during the six-week exhibit. And, waiting in the wings, the STURP people, equipped with seven tons of electronic and photographic instruments, were counting the hours for the showing to end.

The last pilgrim had hardly left the church when the shroud was taken out of its helium-filled casing and carefully spread out on a long, narrow table in the adjoining Royal Palace. For five days, working frantically around the clock, STURP's people, representing the gamut of scientific disciplines, photographed, X-rayed and snipped microscopic fibers from the shroud. Never had an artifact of any kind been subjected to closer scrutiny. When it was over, the scientists dispersed to their own institutes and laboratories to analyze their findings.

Virtually all agreed that the image could not have been painted. Paint would have penetrated deep into the fibers, and the imprint on the cloth is merely superficial. They also established that some of the pollen found in the cloth had come from plants that grew in Palestine about the time of the crucifixion.

Further evidence that the image had been formed by means other than paint emerged from a unique device called a VP-8 image analyzer, used by NASA to transmit three-dimensional pictures from the surface of Saturn. Astonishingly, the VP-8 showed that the image on the shroud had a 3-D character impossible to reproduce from a painting.

STURP's hundreds of discoveries about the shroud have filled volumes—many of them readily understood only

by other scientists. But the group's summary of its 1978 investigation is clear. "We can conclude for now that the shroud image is that of a human form of a crucified, scourged man. The blood stains (on the cloth) are composed of hemoglobin. . . . The image is an ongoing mystery and . . . the problem remains unsolved."

In the small room at St. Agnes, Dr. Gambescia, who has been studying the secrets of the shroud on and off for more than three decades, put the slide projector to rest.

Gone, except in memory, were the kaleidoscopic flashes of fibrils under microscopes, of the brutal imprints of Roman scourges on a martyred body, of

"Maybe this is one of
God's jokes. I always felt
he had a sense of humor,"
said Dr. Joseph M.
Gambescia '41.

the startling similarities between what the shroud showed and what the Scriptures said.

In the mind of Dr. Gambescia, faith and science exist in evident harmony. So it is easy for him to switch from hard, provable fact to artful imagination.

"After all this research and probing," he said, "we don't know how the image was imprinted on the shroud. But let's talk about the nature, the function of image. What is it? It captures a moment, it freezes it, so you can live it over and over again. You saw the picture of that baby on the screen. That's my son, Gregory. He was saying 'Daddy' for the first time. And you saw that sunset. You couldn't possibly capture such moments in words; you'd be constricted. That's why it's important to have images. Man needs symbols, they tell the whole story. We need something solid, not just abstractions.

"When you want to show somebody how much you love them, you give them something of yourself, right? Now—think of man. The pearl of God's creation, his favorite. God's delighted with man, he's madly in love with us—so he sends his son down to get everything organized. And then, when his sacrifice

comes, he decides to give us his picture. It is his best picture—of the moment he shows us his greatest love, giving his life for a friend.

"Should he give us a photograph? Of course not. The people at the time wouldn't have known what a photograph was."

He smiled. "He could have given us his picture in the imprint on the shroud—and let us find it accidentally. Oh boy, he might have thought, 'are they gonna be excited.' Maybe this was one of God's jokes. I always felt he had a sense of humor."

It makes a fine story, and Dr. Gambescia knows it won't convince the skeptics. That is partly why, over the years, he has accumulated tangible evidence tending to support the thesis that the shroud just could be the cloth that Joseph of Arimathea draped over the body of Christ in the tomb at Golgotha nearly 2,000 years ago.

"Here's a piece of soft evidence," the alumnus said. "In the Scriptures, St. John tells us about this magnificent figure of a man, obviously referring to Jesus. Now throughout Christian history, artists have painted their conceptions of Jesus. But—and that's interesting—the earliest paintings portray a beardless Christ. Right up to the third century—no beard. Then, around the sixth century, there's a change. The Byzantine artists all painted Jesus with a beard, a forked beard. The Byzantine artists were very careful when they copied something. There are certain characteristics that suggest the paintings could have been copied from the shroud."

To him, the anatomical findings—the blood and water marks on the shroud, the position of the arms as the crucified man tried to raise himself up on the cross so he could draw breath, the lance wound in his side—do not contradict the biblical accounts of the crucifixion.

"Now, we know that our Lord was crowned with thorns. It was not a corona—more likely a mat of thorns that was pushed down on the head, with a stick. This is a very vascular area, the top of the head. You'd get a heavy blood flow—and that is exactly what is indicated on the cloth. There are over 120 scourge marks visible. No wonder Pontius Pilate almost fainted when he said, 'Behold a man.'"

Another piece of "soft evidence," he believes, is that the man in the shroud is nude. "I just don't think many artists

would have dared to depict Christ as nude.”

Shortly after examining as a STURP member the shroud in Turin, Dr. Gambescia told a reporter, “I can’t think of anyone else (but Jesus) who was crucified, crowned with thorns, pierced with a lance, scourged and then placed in a rich, beautiful cloth. Not only is he in that cloth,” the physician pointed out,

“but he doesn’t stay there very long. . . .”

Today, some 10 years later, he has discovered nothing about the shroud to change his mind. “I began the research with an open, unbiased attitude. That was in 1955, when Father (Adam J.) Otterbein, the director of the Holy Shroud Guild, asked me to use my medical training to help investigate the shroud. As a physician, I must remain

unbiased.” But, obviously, he cannot crowd out his faith.

Whoever the man in the shroud was, the imprint is no fraud, Dr. Gambescia believes. “In 1898,” he explained, “Secundo Pia, a photographer, took a picture of the shroud. The image on the cloth was very faint, hardly recognizable as a face or body. But when Pia saw the negative coming out on his glass plate, he nearly fainted. Everything, of course, was reversed—black came out white, white came out black. And a clear picture of a man’s face appeared. Then Pia realized the image on the cloth was a negative. Now, do you think a forger would paint a negative on a fabric—500 years before the invention of photography—in the hope we would stumble upon it?”

It was Secundo Pia’s negative that first showed a distinct image of the man who might be Jesus Christ. “His best picture,” Dr. Gambescia has said. Found at the very time people could understand it.

Meanwhile, the sophisticated scientists, with Dr. Gambescia among the most meticulous, keep on looking, probing, weighing—and hoping, perhaps against hope, to find the missing clue. The one key that might unlock the enigma of the simple piece of cloth.

Science, said Dr. Gambescia with a chuckle, “doesn’t prove much of anything. Rather, science disproves. We’re mostly convinced now that the image was caused by some kind of scorch. How it was made, we do not know. . . . There is circumstantial evidence that the image could be the image of Jesus, enough evidence to make you scratch your head. Certainly I don’t know that this thesis has been disproved by all we’ve examined so far.”

The STURP report offers no convincing rebuttal: “There are no chemical or physical methods known that can account for the totality of the image (on the cloth), nor can any combination of physical, chemical, biological or medical circumstances explain the image adequately. . . .”

Who, then, was the man in the shroud? And what strange phenomenon imprinted the magnificent face on it?

We may never know for sure, Dr. Gambescia said. And he may be right.

Hans Knight is a former staff writer for the Philadelphia Bulletin Magazine. This is his first article for this magazine.

A man of spirit and science

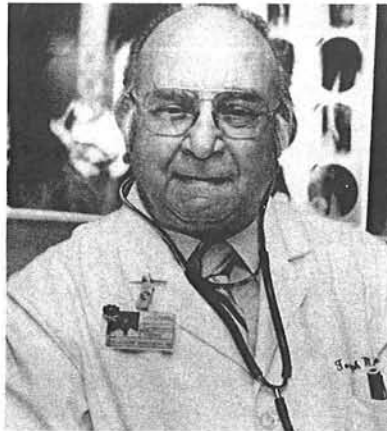
Joseph M. Gambescia’s 10-page curriculum vitae covers more than 50 years. He is a physician, educator, World War II veteran, lecturer and author. A member of many medical and scientific societies, he has received numerous honors and awards, including an appointment by Pope Paul VI as a Knight of St. Gregory the Great.

In 1965 at St. Peter’s Church in Philadelphia, Dr. Gambescia was one of two physicians named by the Vatican to identify the remains of John Neumann, the first step in the canonization of the fourth bishop of Philadelphia.

Both as a physician and a family man, he has touched many lives. The alumnus is the personal physician of Cardinal John Krol. He resides with his wife, Mary, in Bala Cynwyd, Pa. They are the parents of 16 children and have 27 grandchildren.

Prior to coming to Villanova, the Philadelphia native received a bachelor of science degree in 1939 from the Philadelphia College of Pharmacy. From 1939 to 1941, he continued his pre-medical education at Villanova as a biology major. In 1944 he earned a medical degree from Hahnemann University in Philadelphia, where he met his wife, a former nurse.

In 1946 a military assignment in Germany interrupted his residency in pathology at Hahnemann. While in Germany, he was chief of laboratories of the Army Hepatitis Research Center. After his discharge in 1948, he returned to Hahnemann as a resident in internal medicine. The following year he trained in gastroenterology at the Hospital of the



Dr. Gambescia has touched many lives in his career.

University of Pennsylvania.

Dr. Gambescia in 1950 began teaching and practicing medicine at Hahnemann, where he now is a professor of medicine. He is also chairman of the department of medicine at Philadelphia’s St. Agnes Medical Center, as well as president of the medical staff, programs director of the Community Outreach Program/Neighborhood Medi-Call, and chief of gastroenterology.

Dr. Gambescia holds a certificate of proficiency in religious education from St. Charles Seminary in Wynnewood, Pa., and a diploma of religious studies from the congregation of the clergy in Rome. Cardinal Krol ordained him a permanent deacon in 1986.

An active, busy man who makes the most of each day, he is also kind and patient, closing each conversation with “God Bless.” This truly remarkable man acts on his commitments—to his faith, his family and his profession. —DMH

At Church of the Holy Child

Christ's wounds left their mark

By MARIELENA ZUNIGA

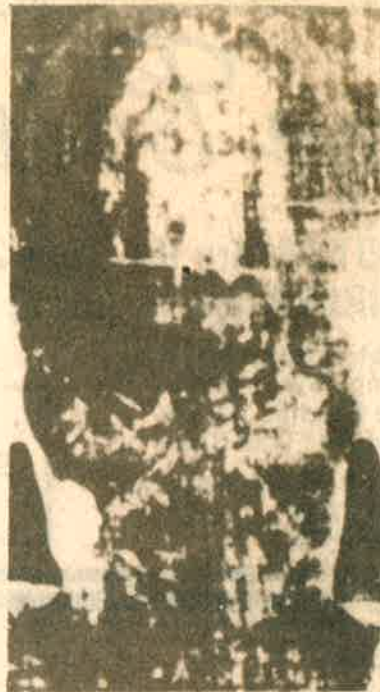
Who is the man on the Shroud of Turin, what has caused the image of a man scourged, beaten, crowned with thorns and crucified, and could that man be Jesus Christ?

The answer is "yes," according to Dr. Joseph Gambescia, a member of the Shroud of Turin Research Project, who recently offered a slide presentation on the shroud at the Church of the Holy Child, Wilmington.

Purported to be the actual burial cloth of Christ, the shroud was scrutinized by a team of scientists in 1978, who used advanced instruments in a 120-hour study. Dr. Gambescia, chairman of the Department of Medicine at St. Agnes Hospital, Philadelphia, was one of 33 Americans examining the shroud.

Reviewing those studies, he also presented a short history of the cloth and provided an in-depth explanation of the markings on the cloth.

Affecting only the most superficial part of the fabric, the stains and images on the cloth show a man who has been



The image of Christ on the Shroud of Turin.

severely beaten on the face, he said. The right cheekbone and bridge of the nose are swollen.

The body is covered with 120 lashes which spared only the face and extremities, he explained. The Roman method of scourging utilized metal balls or animal bones attached to the ends of leather thongs which lacerated and tore away skin.

"Look at the dorsal image on the cloth," he said, "it has the impression of the beating itself. There were two scourgers and deep injury was occurring."

Studying the scalp, he pointed out that the traditional crown of thorns was in reality a mat or cap, pressed into the scalp with a cane. On the cloth image, there are puncture marks on the brow and numerous marks extending almost to the base of the skull.

"It seems to me it must have been then that Pilate paled looking at Jesus and said, 'Behold the man,' " he explained.

Since the Roman custom of crucifixion was to leave the vertical beam of the cross in place, the victim was forced to carry

the crossbeam tied to outstretched arms, he said.

"The heavy weight of carrying the crossbeam compelled the person to fall on his face and knees," he explained, "and also caused abrasions and deep ulcerations across the back and shoulder blades."

On the shroud, he pointed out a concentration of blood on the knees and shins, evidence that the individual had fallen numerous times.

"Don't you think when our Blessed Mother saw Christ she must have cried to the Father for help and that's when he sent Simon to aid Jesus," he asked.

Even though we have been accustomed to seeing the nails through the hands, he added, Dr. Barbet in 1935 demonstrated the sheer weight of the body would cause the nails to rip through the palms.

Instead, when a nail goes through the wrist, it drives apart many tiny bones without breaking them, he said, and supports the hanging body.

"We noticed on the cloth a large flow of blood," he said, "a result from the nail wound on the wrist area, not the palm, increasing the authenticity of the cloth, an anatomical fact that no artist would be likely to know if it was painted in the 1300s."

Then the crossbeam would be raised to position the person on the cross and Dr. Gambescia said at that moment, the pain was so overwhelming and prostrating that some died at that moment.

"Some went stark raving mad, while others had such curses that even the crude executioners couldn't tolerate it," he said. "For the most part, they would cry for mercy. So that's what the crowd waited for as they gathered at the cross and looked up to Jesus - waited for him to cry for mercy."

The secret of prolonging the agony of crucifixion, he explained, was to secure the lower body and this was done by driving a nail through the ankle. On the

Wilmington

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The Dialog
April 25, 1986

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Shroud of Turin...

(Continued from page 1)

cloth, there is a flow of blood in the ankle area.

On the cloth, the image also shows an expanded chest area, showing the individual's desperate attempt to exhale. The person on the cross, then, in order to breathe, would raise himself up with a cry for air, tolerate intense pain as he did so, and also irritate the nails in the wrists which would create fresh bleeding.

By breaking a man's legs, the Romans hastened death he said, because the person would be unable to raise himself up to breathe. Finding Jesus already dead, a centurion thrust a lance into Jesus' side. On the shroud are the markings of a wound between the fifth and sixth rib, which caused a flow of blood and another kind of liquid.

What caused the image on the cloth? As a result of the 1978 in-

vestigations, no pigments, paints, dyes or stains were found on the fibres, he said. Microchemical evaluation also indicated no evidence of any spices, oils or any biochemicals known to be produced by the body.

"Could it be," the doctor questioned, "that there did occur this outburst of energy as Christ resurrected and that this is the cause of the image?"

The scientists in 1978, he said, did feel the cloth is the authentic shroud of Jesus Christ, a historical figure, but, he added,

that does not mean they claimed he was the son of God.

The doctor himself believes it is the image of Jesus Christ, the son of God who has taken the most important moment in history and made it "an eternal moment so we can live it over and over again."

"It's a picture that shows us how much he loves us," he said. "Calvary is not 2,000 years ago, but now, every moment. At every Mass, you're at the foot of the cross. Jesus asks us if we will die to ourselves so he can live in us."

Doctor Uses Medical Science To Probe Shroud Of Turin

By William George Shuster
Associated Press

An ornate silver casket behind an iron grill in a church in Turin, Italy, contains an ancient mystery that Joseph M. Gambescia has spent 30 years trying to crack.

The mystery is the Shroud of Turin, one of the world's most controversial religious relics. On this ivory-colored linen cloth is the image of a man who had been brutally whipped, tortured and crucified.

Is it, as many contend, the burial cloth of Jesus Christ? Or is it merely a bogus relic, as others have maintained since the 14th century?

Not easy questions. Gambescia, professor of medicine at Hahnemann University and chairman of the Department of Medicine at Philadelphia's St. Agnes Medical Center, has spent most of his adult life using medical science to try to answer them. In the process, he has become a leading medical expert on crucifixion as well as an authority on the shroud.

Gambescia began studying aspects of the shroud in 1955 at the request of the Rev. Adam J. Otterbein, director of the Holy Shroud Guild and a key figure in promoting scientific and public interest in the shroud in the United States.

Otterbein, a proponent of scientific analysis of the ancient cloth, sought new ways to study it, approaching such varied groups as photographic experts at the Eastman Kodak Co., chemists in a New York City police crime lab and the FBI.

On the recommendation of Joseph Imbriglia, former chairman of Hahnemann's department of pathology, Otterbein approached Gambescia, then a young doctor directing a Hahnemann gastrointestinal-research unit.

To Gambescia, the request was unusual.

"He asked me to study the patho-physiology of crucifixion — the mechanics of death in a person who is crucified," Gambescia said.

Intrigued, Gambescia agreed. He was experienced in pathology, and although a devout Catholic, he knew virtually nothing about the Shroud of Turin "other than there was such a thing. So, I came without any opinion of it, which was ideal," said Gambescia.

"In research, you try to be as objective and uninvolved as

possible. You want to avoid bias."

But he found he could not avoid problems.

The biggest was — and is — finding time. Gambescia's efforts are donated.



Dr. Joseph M. Gambescia

"Everytime I had some free time, I worked on it," he said.

Over three decades, that became difficult. He had to squeeze his studies on the mechanics of death by crucifixion around his duties as a father, doctor, professor, lecturer and administrator. Yet his deepening fascination with the subject drove him to make time.

By combining his knowledge of crucifixion, history, medicine and anatomy, he reached conclusions that greatly contributed to research into the shroud.

An unconventional conclusion was that two nails, not one, had been hammered into the crucified man's feet — contradicting artistic renditions of the crucifixion and accounts of biblical scholars.

Spurring his discovery was a painting in his home by German Renaissance artist Matthias Grunewald depicting Christ's death with a traditional, single spike through his feet. As he passed it daily, Gambescia began viewing it differently.

"That visual image of one nail concerned me," he said. "Knowing the anatomy of the ankle, it wasn't possible for legs and feet to react as traditionally depicted."

"One day, as I looked at the feet and ankles (in the picture), it dawned on me: There had to be two nails. One nail couldn't have held up a body," said Gambescia.

And if there were two nails, "there had to be two bleeding points" pictured on the shroud, he said.

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SONS OF ITALY
LARGEST FRATERNAL ORGANIZATION OF ITS KIND IN THE UNITED STATES

THE
TIMES

LARGEST ITALO AMERICAN FRATERNAL BI-WEEKLY IN PENNSYLVANIA

PHILADELPHIA, PA. OCTOBER 7, 1985

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Dr. Gambescia

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Close inspection of the blood spots near the footprints by photography and color enhancement has confirmed his theory: A nail apparently was driven through the ankle and heel of the right foot and into the cross, and another nail was driven through the center of the left foot and into the right one beneath. The latter traditionally is assumed to be the only nail.

Knowledge of anatomy solved another problem: the mystery of the bent arm.

Careful study by other researchers of the angle of bloodstains along the arms indicated that the man had repeatedly pulled himself up to breathe before slipping down into the "hanging" position. But they were puzzled that in the up position, his left arm was stretched out on the crossbeam, as pictured traditionally, while his right arm was bent at the elbow at a 45-degree angle.

"That was peculiar," said Gambescia. "No one could figure it out. Why was his arm bent?"

Studying blood flow, photos of the image and facts of the nailed feet, Gambescia decided the arm was bent because of the way the man had been impaled on the cross.

"When you put one foot on top of the other, the body twists (in the direction of the top foot), and that is exactly what happened," he said.

Nailing his left foot over the right pivoted the man slightly to the right. With the ankle, knee and pelvic femur acting as a unit, the crucified man favored his right side and arm when pushing up to breathe. That finding was strong evidence that the cloth image was not a fraud, said Gambescia.

"The bent arm is a fact no artist would realize," he said. "They have everything symmetrical. We didn't even think of it ourselves. It was just serendipitously realized."

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"It wasn't a sophisticated experiment — and I wonder now what the neighbors thought — but the aim was to get an anatomical portrait of a person hanging from a cross," said Gambescia.

One thing both noticed immediately was the effect on breathing.

"I quickly found I had an intense desire to push (my body) up with my feet," said Gambescia's son. "I felt pressure on the upper torso and kept digging in my heels to push up and relieve it."

It was "a good visualization, up to a point, of what it was like to be on a cross," said Gambescia. "And it substantiated the reconstruction and the angle of the blood flow."

By the mid-1970s, years of such research had convinced him that the shroud's image "was neither a hoax nor a fraud. Anatomically, everything comes together so easily."

In March 1977, at a Ramada Inn in Albuquerque, N.M., about 40 scientists and clergymen met for a two-day conference and formed the Shroud of Turin Research Project (STURP). It was the first convention of shroud experts in the United States. Together, they wanted to develop scientific tests appropriate for studying the cloth when it would be publicly displayed in Turin, Italy in 1978 — the first public display in 50 years.

Gambescia was particularly eager for the result of photographic and chemical studies. After some delay, STURP received approval from Umberto II of the House of Savoy — former king of Italy and legal owner of the shroud — and Turin's Archbishop Anastasio Ballestreo to conduct its research.

Sympathetic to the study, both men gave carte blanche to do any experiments necessary — as long as they didn't damage the cloth and were completed within a specific time after the exposition.

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On the evening of Oct. 8, 1978 — 20 months after the Albuquerque

conference — STURP members waited eagerly for the last pilgrim to leave the Turin cathedral. For six weeks, since August, 3.3 million pilgrims and tourists had viewed the shroud. Now it was STURP's turn, and Gambescia was "thrilled with the chance to finally see what I had been studying since 1955."

The long, narrow burial cloth (14 feet, 6 inches long by 3 feet, 7 inches wide) was removed from its nitrogen-filled exposition case in the church, taken to a small hall in the adjoining royal palace and placed on a long table equipped with clamps and magnets. STURP members and participating European researchers, with their instruments and equipment, watched.

The cloth varied in color from "ivory to sepia," said Gambescia. Evident were "reddish magenta bloodstains and scorch marks (from a 16th-century fire in the church), covered with triangular patches" sewed on by nuns. "That's all you can really see because the closer you get to the cloth, the more difficult it is to see the image. You have to stand about 10 feet away to really appreciate it."

The door was closed. The cloth was theirs to test for a week.

"We gathered data for 120 hours straight," said Gambescia. "We worked in shifts, different task forces with their own schedules."

Seven years of detailed analysis since Turin seems to confirm that the image is not a painting and that it accurately shows a crucified man. More specifically, it coincides medically in virtually every detail with historical accounts of Jesus' death.

"STURP didn't go in assuming it was the burial cloth of Christ," said Gambescia, who said he looked for "anything to disprove that. But we found no evidence that it is a fraud."

Medically, the data confirmed that "the various markings are physiologically and anatomically correct, supporting its authenticity," he said. Further photographic studies of the feet, especially, "made a big difference. You can see the second nail hole."

Turin did not end Gambescia's research. He hopes to publish a paper on his findings next year.

"There's no question the shroud is the burial cloth of a man who was crucified," he said. "Science can't prove that man was Jesus. But based on circumstantial probability, I would say, yes, the shroud is the burial cloth of Jesus Christ."

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Sons of Italy TIMES, Philadelphia, October 7, 1985



The PCPS Bulletin

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On the Cover:

Each year, 5–10 million poisoning incidents, resulting in 5,000 deaths, occur in the United States. In the Delaware Valley alone, about 100,000 area residents become poison victims, enough to fill JFK stadium.

Know what you can do to prevent accidental poisonings. Keep the phone number of the poison control center attached to your telephone. Don't hesitate to call if you have a problem or question. It could save your life.

Correction: The medical technology program was started at the College in 1965.

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Dr. Joseph M. Gambescia views a slide photograph of the Shroud of Turin.

Photograph by Londa Salamon; reprinted with permission of Hahnemann University magazine.

Three Decades of Research on the Shroud of Turin

by Ann Jarmusch

It is both romantic and somber, a holy symbol to some and colossal hoax to others. The Shroud of Turin has fascinated both believers and detractors for centuries—and one PCPS alumnus for more than 30 years.

Joseph M. Gambescia, M.D. '39P is one of the scientists who has been systematically attempting to unravel the mystery woven into the Shroud of Turin by time and circumstance. Is this long linen shroud, now wrapped in red silk and stored in a silver reliquary in Turin's cathedral, really the burial cloth of Jesus Christ?

The Roman Catholic Church, which safeguards this possibly blood-stained shroud behind glass and a grille above a chapel altar, takes no official position on its authenticity. A papal pronouncement long ago advised pilgrims to consider it a "representation" of the real shroud. But the pilgrims keep coming by the millions because not only do the shroud's stains reflect biblical descriptions of the physical torment

Christ suffered during his crucifixion, but the ghostly image of a bearded man's face visible on the cloth fits Gospel descriptions of Christ.

Armed with his two degrees in pharmacy and medicine (from Hahnemann University School of Medicine) and experienced in pathology, Gambescia was invited to join other experts in studying the Shroud of Turin beginning in 1955. Father Adam J. Otterbein, leader of the Holy Shroud Guild, assembled specialists as diverse as chemists, linguists, art historians, physicists, and photographic specialists from NASA to consider how the shroud might have acquired its markings and what they might mean.

"I was asked to study the cause of death when a person is crucified. What happens when a person is suspended?" recalls Gambescia of his introduction to the Shroud of Turin Research Project (STURP). "This raised medical and moral problems. I had to figure out a method to simulate crucifixion as closely as possible."

"I like to think of the shroud as the Rosetta Stone Cloth."

How did he do it?

"Today there are instruments for extrapolating this information," Gambescia explains, "but initially I had somebody hanging a few inches from the floor [by gripping a bar]."

That "somebody" was sometimes his son, Joseph, Jr., who in the name of science "hung" from straps on a wooden cross he and Gambescia senior built and erected in the backyard. The father photographed the son in different positions to study, among other grim truths, muscle action in the struggle against asphyxiation.

Like a detective, Gambescia pieced together information on anatomy, physics, and geometry in assessing the shroud's appearance that suggests the man it draped was crucified, scourged, and lanced, as Christ is reported to have been. Along with fulfilling his other professional responsibilities (Gambescia is now chief of staff and chairman of the Department of Medicine at St. Agnes Medical Center in Philadelphia), he traveled to distant STURP meetings and corresponded with his fellow researchers. And when he and some 30 other STURP specialists got their chance to examine the shroud in Turin in round-the-clock shifts for five days in 1978, Gambescia looked at the cloth unrolled for the first time in 50 years and shook his head in sympathy for all the bishops who have been confounded by this relic.

What He Saw

"My kid could paint better than that," Gambescia recalls thinking when he first saw the ivory-colored shroud's face and body imagery, which resemble a photographic negative.

Doubters have tried to prove that the image was, in fact, created by a clever medieval painter or by scorching, but Gambescia describes results of STURP examination by photomicroscope, X-ray, fiber optical photography, and chemical tests as "incontrovertible evidence" that some of the marks are centuries-old bloodstains. (The Vatican has not yet permitted the shroud to be subjected to carbon-14 dating, so its exact age remains unknown.)

One of Gambescia's own conclusions, borne out by "blood" traces on the cloth, is that, contrary to written descriptions and artists' depictions of Christ on the cross, not one, but two nails were necessary to hold the feet and ankles in place. Gambescia also showed that blood separating into red cells and plasma after the victim's death could account for "watery bloodstains" found on the cloth in the vicinity of the right side, where the body of Jesus was to have suffered a lance wound.

Quick to reach for a pad to diagram the way the hip, knee, and ankle joints work normally and when suspended, Gambescia shows the side of him that helped earn him the position of professor of medicine at Hahnemann, which he currently holds. When teaching, he recalls his own experience as a student.

Volunteering that "being a pharmacist gave me tremendous advantage in medical school," Gambescia remembers the PCPS faculty as "superb teachers who were also good educators. I like to make the distinction," continues this professor, who considers teaching "a great privilege. An educator looks at you, sees your potential and brings it out. *Educare* [the Latin root] means 'to lead out.'"

A frequent lecturer to the public on the Shroud of Turin, Gambescia can be as poetic as he can analytic in communicating its complexities.

"I like to think of the shroud as the Rosetta Stone Cloth," says Gambescia, whose office contains a framed poster of the shroud's facial image. "The Rosetta Stone, if you recall, was the stone that had three languages on it: the Greek, the Coptic, and Egyptian hieroglyphics. The three languages of the cloth are the scientific, the historical with biblical overtones, and the spiritual. If I can translate the scientific and historical parts, that gives me a clue how to interpret the spiritual part."

Studying a Saint

Gambescia was tapped by the Vatican again for his medical expertise during the canonization process of John Neumann, the first bishop of Philadelphia. He and William Zintl, M.D. examined the enshrined remains at St. Peter's Church in Philadelphia to vouch, Gambescia says, for their authenticity and to report on their condition. Finding only bones, "dust," and some tendons was a sobering experience for Gambescia.

"It makes you appreciate that that's the end result, from a material

standpoint," he says. "But the dignity of man is such that there's got to be something else . . . It gave me a better appreciation of what life is all about."

Actually, Gambescia already knew a lot about life. He is the natural parent of 16 children, including one set of twins, with his wife, Mary Elizabeth. The oldest offspring is 41 years old, the youngest 21, and, at one point, all 16 were living at home along with their parents and grandmother, for a total of 19 around the dinner table.

Gambescia, 1986 recipient of the Family of the Year Award from the Pennsylvania Knights of Columbus, credits the wife he describes as "fabulous" for being the cohesive force on the homefront. His philosophy of marriage is based on "giving 100 percent and expecting zero."

His "Retrospectroscope"

A devout Catholic, Gambescia was ordained to the permanent diaconate earlier this year in Philadelphia by Archbishop John Cardinal Kroll. Five years of training in church ministry now culminates in the new deacon's assignment to serve his own parish, St. Matthias Church in Bala Cynwyd, where he also resides.

"I don't know if I know why I joined the diaconate," he muses. "If I use what I like to call a 'retrospectroscope' to look back and gain insight, I think God was setting me up. I was studying for a number of years, anyway—my wife, too—and had earned a certificate of proficiency in religious education."

This achievement follows Gambescia's appointment as a Knight of St. Gregory the Great by Pope Paul VI for establishing a community health outreach program in South Philadelphia, where he grew up and now works. He also received the Sourin Medal from the Catholic Philopatrian Literary Institute in 1981 for distinguished Catholic leadership.

Did Gambescia's faith ever cloud his scientific inquiry when investigating the Shroud of Turin or the remains of John Neumann?

"I know scientific method, its protocol and its pitfalls; I know what's required," Gambescia replies. "If there was any problem, it would have been the other way around. It would have made my faith less strong. I don't think there's any contradiction—both [science and theology] are looking for truth."

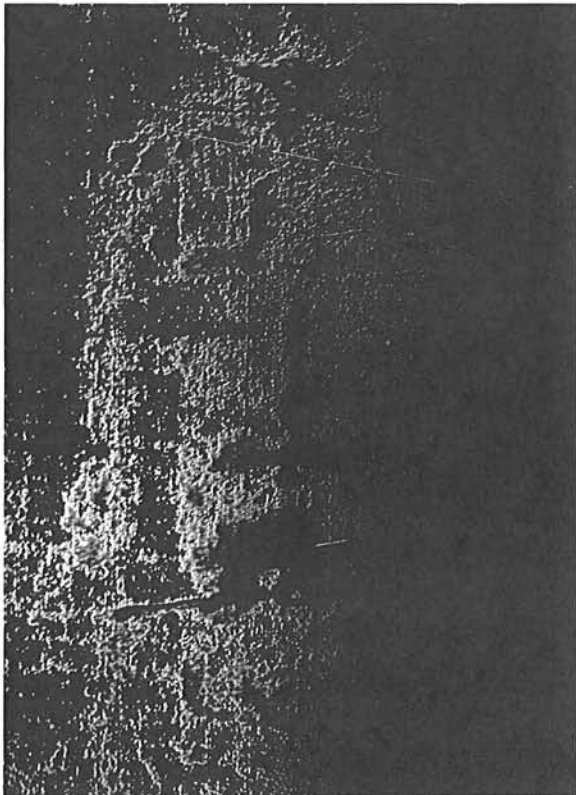


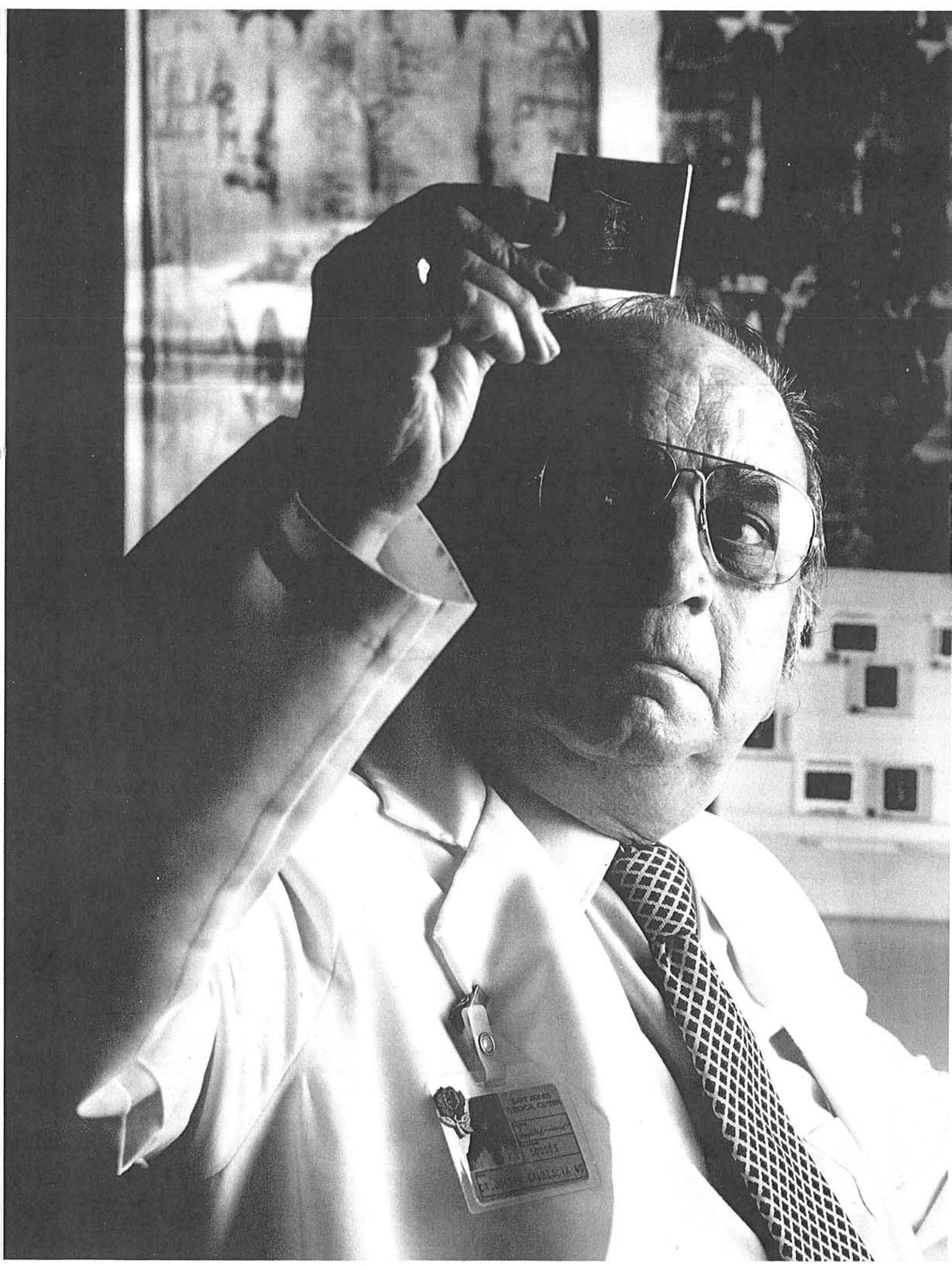
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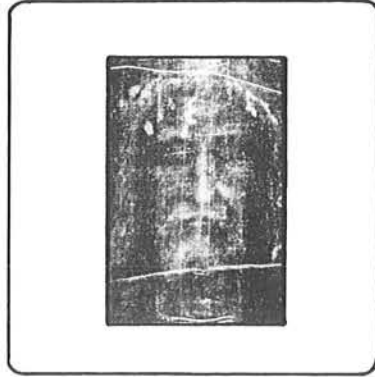
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Color enhancement of the "bloodstains"
that appear on the Shroud of Turin, the
reputed burial cloth of Jesus Christ.
Alumnus Joseph M. Gambescia has been
studying medical aspects of the Shroud
for more than 30 years. Page 20.







UNRAVELING THE SECRETS OF THE SHROUD

by William George Shuster

Joseph M. Gambescia, M.D. '44, has spent 30 years researching medical aspects of the Shroud of Turin, the reputed burial cloth of Jesus Christ. Along the way he's become an expert on the pathophysiology of crucifixion as well as the Shroud itself.

In an ornate silver casket, behind an iron grill in a church altar in Turin, Italy, there lies an ancient mystery which Joseph M. Gambescia, M.D. '44, has spent a third of a century helping to crack.

The mystery is the "Shroud of Turin," one of the world's most controversial religious relics. On this ivory-colored linen cloth is the image of a man who had been brutally whipped, tortured and crucified.

Is it, as many claim, the burial cloth of Jesus Christ? Or is it merely a bogus relic, as others have contended since the 14th century?

Not easy questions. But Gambescia, professor of medicine at HU and chairman of the Department of Medicine at Philadelphia's St. Agnes Medical Center, has spent most of his adult life using medical science to answer them. In the process, he has become a leading medical expert on crucifixion as well as an authority on the Shroud itself.

Turin's relic, traced historically back to the 1300s,

◀ *Joseph M. Gambescia and the mystery of the Shroud of Turin.*

has bewildered modern science since 1898 when the glass negative of the first-ever photo of the cloth unexpectedly produced a positive, lifelike picture of a man in death. In many ways that image corresponds exactly with Gospel accounts of Jesus' death.

In effect, the cloth's image, faintly seen by the naked eye, was itself similar to a photographic negative.

A heated scientific debate ensued, and continues today. What produced the image? More important, how *accurate* are the cloth's myriad physical details, revealed by photography for the first time, when analyzed by science and medicine?

Gambescia is a sindonologist, as Shroud researchers are called (from the Greek *sindon* for "shroud").

He first began studying aspects of the Shroud in 1955 at the request of Father Adam J. Otterbein, director of the Holy Shroud Guild and a key figure in promoting scientific and public interest in the Shroud in the U.S.

Otterbein, a proponent of scientific analysis of the ancient cloth, actively sought new ways to study it, approaching such varied groups as photographic experts at the Eastman Kodak Co., chemists in a New York City police crime lab, even the FBI. So, it wasn't unusual for him—on the recommendation of Joseph Imbriglia, M.D., Hahnemann's former chairman of the Department of Pathology—to seek out Gambescia, then a young doctor directing a Hahnemann GI Research unit.

But to Gambescia, the request *was* unusual. "He asked me to study the pathophysiology of crucifixion—the mechanics of death in a person who is crucified," he recalled. Such data would be tremendously useful in the scientific study of the Shroud of Turin, explained the priest.

Intrigued, Gambescia agreed. It was a fortuitous union of man and project: Gambescia already was experienced in pathology and was building what has become a solid reputation as a thorough and objective clinician. Indeed, the quiet-spoken Gambescia's exactitude is such that Peter S. Amenta, Ph.D., professor and chairman, Department of Anatomy and a longtime colleague, said, "If the man told me the earth was going to revolve backwards, I'd believe him. He's very professional and practices sound medicine. As a scientist and a clinician, he doesn't mix in his personal belief. He's dedicated to truth."

Just as important, though a devout Catholic, he knew virtually nothing about the Shroud of Turin "other than there was such a thing. So, I came without any opinion of it, which was ideal," said Gambescia.

"In research, you try to be as objective and uninvolved as possible. You want to avoid bias."

But he found he couldn't avoid problems.

The biggest was—and is—finding time. Gambescia's efforts—like most sindonologists—are donated. "No one is paid for this," he said. "Everytime I had some free time, I worked on it." Over three decades that became difficult: He had to squeeze his studies on the "mechanics of death by crucifixion" around his duties as father (of 16 children), doctor, professor, lecturer, and administrator. Yet, his deepening fascination with the subject drove him to make time. The project, said his son Joseph Jr., became "a pervasive aspect of dad's life." Indeed, by the end of the 1960s, he had become such an expert on the Shroud—and his research had

become so well-known locally—that he began giving frequent lectures on its scientific, historical and religious aspects.

The method of research itself posed some unusual demands on his ingenuity:

- First, he had to research the effects of a form of execution which hadn't been used for 15 centuries.
- Second, he had to compare his findings with evidence on a cloth neither he nor other scientists—until recently—were allowed to analyze or even see in person.
- Third, he couldn't rely on medical literature. Aside from a few studies and reports of torture in Nazi concentration camps—where some victims were hung by their thumbs, producing effects similar to crucifixion—there was virtually nothing concerning crucifixion.
- Fourth, he had to create his own data, which raised "an ethical and moral problem. To be accurate, you would have to crucify someone," he explained. "Obviously, we couldn't do that."

Thus the problem: How do you autopsy the image of a dead body on an ancient cloth you can't personally inspect?

The answer: Study how the body reacts in conditions similar to those in crucifixion. "Get a trend and extrapolate, [trying to mimic] what went on without creating a problem," said Gambescia. "Then, compare that data with photographs of the cloth's image."

By combining his knowledge of crucifixion, history, medicine and anatomy, he reached some shrewd—but informed—conclusions that added to international Shroud research.

An unconventional conclusion was that two nails, not one, had been hammered into the crucified man's feet—in contradiction to artistic renditions of the crucifixion and accounts of Biblical scholars. Even modern sindonologists refer to the nail "hole" in the feet.

Spurring his discovery was a painting in his home by German Renaissance artist Mathias Grunewald realistically depicting Christ's death, with a traditional, single spike through his feet. As he passed it daily, Gambescia began to view it differently.

"That visual image of one nail concerned me," he said. "Knowing the anatomy of the ankle, it wasn't possible for legs and feet to react as traditionally depicted." His research showed nails in the feet were used to support the weight of a victim. Could only one nail do that?



Gambescia's research showed that two nails, not one, had been used to support the weight of a person crucified.

“It wasn’t a sophisticated experiment—and I wonder now what the neighbors thought—but the aim was to get an anatomical portrait of a person hanging from a cross,” said Joe Jr.

“One day, as I looked at the feet and ankles [in the picture], it dawned on me: There had to be *two* nails. One nail couldn’t have held up a body,” said Gambescia. And, if there were two, “there had to be two bleeding points” pictured on the Shroud (the cloth has several purported bloodstained areas).

Close inspection of the blood spots near the footprints by photography and color enhancement has confirmed his theory: A nail was apparently driven through the ankle and heel of the right foot and into the cross, and another nail was driven through the center of the left foot and into the right one beneath. The latter is traditionally assumed to be the only nail.

How had others missed that?

“The problem wasn’t in the marks left on the cloth,” said Gambescia, but in the lack of modern technology and medical expertise. Above all, “it was a misinterpretation of the crucifixion by early commentators that other people simply picked up and continued.”

Knowledge of anatomy solved another problem: the mystery of the bent arm.

Careful study by other researchers of the angle of bloodstains along the arms indicated that the man had repeatedly pulled himself up to breathe before slipping down into the “hanging” position. But they were puzzled that in the “up” position, his left arm was stretched out on the crossbeam, as pictured traditionally, while his right arm was bent at the elbow at a 45-degree angle.

“That was peculiar,” said Gambescia. “No one could figure it out. Why was his arm bent?”

Studying blood flow, photos of the image and facts of the nailed feet, Gambescia came up with this conclusion: The arm was bent because of the way the man had been impaled on the cross.

“When you put one foot on top of the other, the body twists [in the direction of the top foot], and that is exactly what happened,” he explained.

Nailing his left foot over the right pivoted the man slightly to the right. With the ankle, knee and pelvic femur acting together as a unit, the crucified man favored his right side and arm when pushing up to breathe. This finding was strong evidence that the cloth image was not a fraud, said Gambescia.

“The bent arm is a fact no artist would realize,” he said. “They have everything symmetrical. We didn’t even think of it ourselves. It was just serendipitously realized [as an unexpected result of bloodstains and anatomical studies].”

In another important contribution, Gambescia demonstrated that a post-mortem separation of red blood cells from plasma could have caused the “watery bloodstains” found on the cloth—on the right side of the chest and girdling the small of the back. This finding corresponds with St. John’s description of the



Joe Jr. on the cross: He was a good choice, resembling the image of the man on the cloth in age, weight and height.

“blood and water” he witnessed seeping from a lance wound Jesus received in his right side.

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Gambescia’s most unusual project came in the mid-1970s: With help from Joseph Jr., he simulated a crucifixion. The purpose was simply to see what happens to the body anatomically when someone hangs in different positions from a crossbeam.

Joe Jr.—a former college philosophy professor and now a supervisor in Philadelphia’s probation department—was fascinated by his father’s research and volunteered to do it. He was a good choice, resembling the image of the man on the cloth in age (early 30s), weight (165 pounds) and height (5 ft. 10 in.).

They made a cross from two beams of wood—and implanted it in the backyard of the family summer home at the New Jersey shore. Using straps at either end of the crossbeam or simply wrapping his hands around the crossbar, Joe hung from it several minutes at a time, with body and legs in various positions as his father took photos.

“It wasn’t a sophisticated experiment—and I wonder now what the neighbors thought—but the aim was to get an anatomical portrait of a person hanging from a cross,” said Joe.

One thing both noticed immediately was the effect on breathing. “I quickly found I had an intense desire to push [my body] up with my feet. I felt pressure on the upper torso, and kept digging in my heels to push up and relieve it.”

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it substantiated the reconstruction [he and others had made of the crucified man's positions] and the angle of the blood flow."

By the mid-1970s, years of such research had convinced him the Shroud's image "was neither a hoax nor a fraud. Anatomically, everything comes together so easily."

Meanwhile, two events occurred which stunned scientists and provided Gambescia the chance to finally analyze the Shroud itself.

- Microscopic study of old pollen grains lifted by sticky tape from the cloth in 1973 revealed several were from plants common to ancient Palestine and areas where the relic was suspected to have been taken.

- More astonishing were density-scan photos of the Shroud's image. Using a space-age device called the VP-8 Image Analyzer, a three-dimensional image was produced of the man, right down to a "pigtail" tuft of hair in the back worn by Jewish men 2,000 years ago. Such data is impossible from normal photos. The finding meant that the cloth had almost certainly covered the image of the body.

"The pollen studies and three-D images excited everyone," recalled Gambescia. "More tests were obviously needed."

In March 1977, at a Ramada Inn in Albuquerque, N. Mex., some 40 scientists and clergymen met for a two-day conference and formed the Shroud of Turin Research Project (STURP). It was the first convention of America's sindonologists, most of them newcomers except the tiny band of veteran researchers like Gambescia, Otterbein and John Bucklin, M.D., a California pathologist. But together they wanted to develop scientific tests appropriate to study the cloth when it would be publicly displayed in Turin, Italy, in 1978—the first public display in 50 years.

Gambescia was particularly anxious for the result of photographic and chemical studies. After some delay, STURP received approval from Umberto II of the House of Savoy—former king of Italy, legal owner of the Shroud—and Turin's new Archbishop Anastasio Ballestreo to conduct its research. Sympathetic to the study, both men gave carte blanche to do any experiments necessary—as long as they didn't damage the cloth and were completed within a specific time period after the exposition.

Gambescia, meanwhile, convened his own mini-conference of medical doctors, many of whom were Hahnemann alumni and faculty. They were chosen for medical and scientific expertise, regardless of religious affiliation.

"STURP's major thrust was chemistry, physics and related sciences. With only two medical doctors at Turin [himself and Dr. Bucklin], I wanted to be sure we covered all the important medical aspects," said Gambescia.

After reviewing the medical data concerning the Shroud, he "began asking us very pointed, very specific questions covering as wide a range as possible," recalled Anatomy chairman Amenta, one of the participants. "It was one of the most stimulating experiences I've ever had."

On the evening of October 8, 1978—20 months after the Albuquerque conference—STURP members waited anxiously for the last pilgrim to leave the Turin cathedral. For six weeks, since August, some 3.3 million pilgrims and tourists had come to view the Shroud. Now it was STURP's turn—and Gambescia was "thrilled with the chance to finally see what I had been studying since 1955."

The long, narrow burial cloth (14 ft. 6 in. by 3 ft. 7 in.) was removed from its nitrogen-filled exposition case in the church, taken to a small hall in the adjoining royal palace, and placed on a long table equipped with clamps and magnets. STURP members and participating European researchers, with their instruments and equipment, watched.

The cloth varied in color from "ivory to sepia," recalled Gambescia. Evident were "reddish magenta bloodstains and scorch marks [from a 16th century fire in the church], covered with triangular patches" sewed on by nuns. "That's all you can really see because the closer you get to the cloth, the more difficult it is to see the image. You have to stand about 10 feet away to really appreciate it."

His first reactions at viewing the cloth? He remained remarkably detached.

"Objectively, it didn't look like much. I could see why bishops in the 14th century thought it was a hoax. I might have been inclined to wonder myself back in those times," he said with a gentle, sympathetic smile.

The door closed. The cloth was theirs to test for a week.

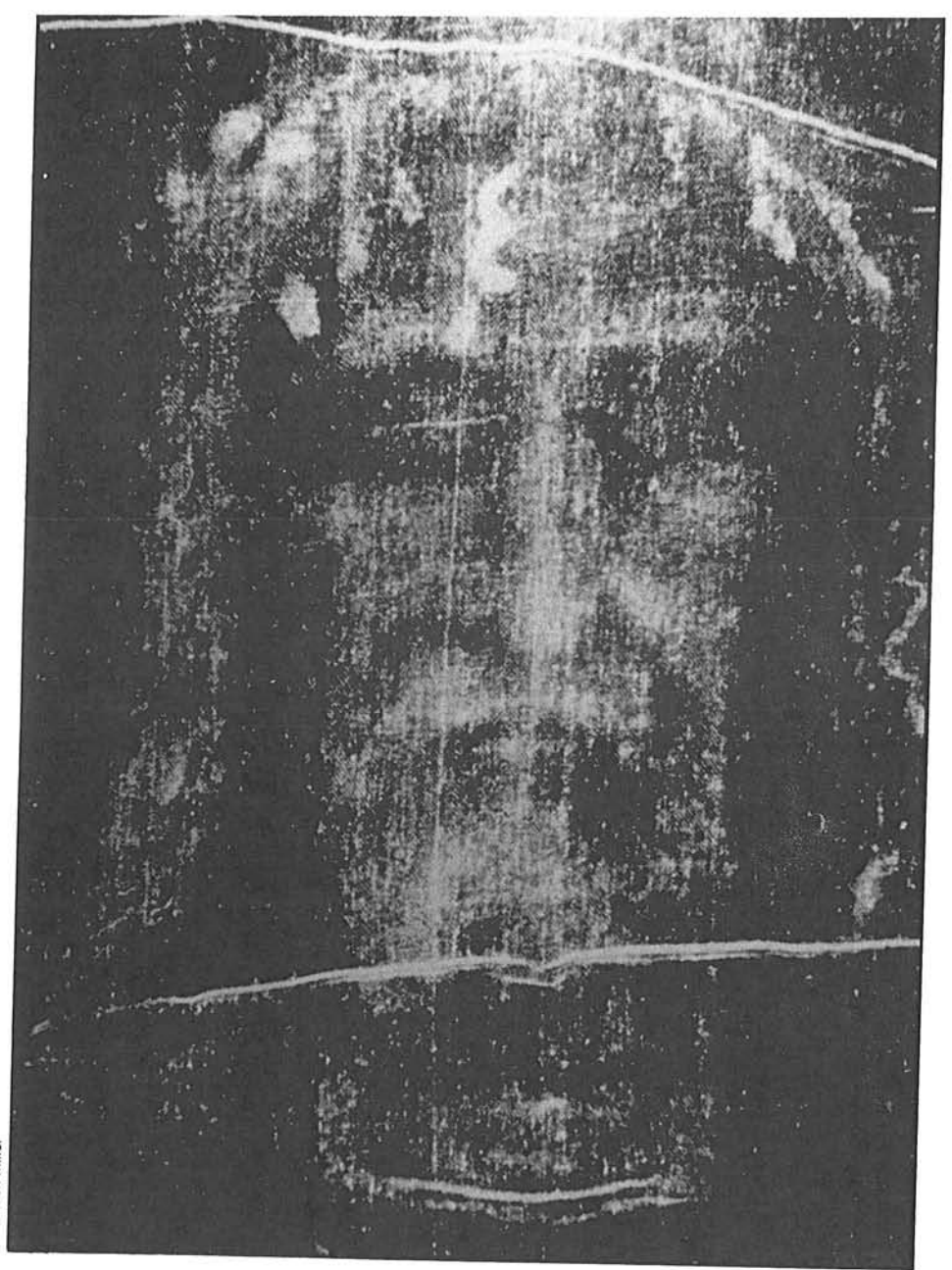
It was a nonstop marathon race, scientific style. "We gathered data for 120 hours straight, from midnight Sunday [Oct. 8, 1978] to midnight Friday [Oct. 13, 1978]," recalled Gambescia. "We worked in shifts, different task forces with their own schedules."

He concentrated particularly on the bloodstains, "peering closely at them, studying them, feeling the cloth, comparing them with the photos." Meanwhile, the entire cloth was X-rayed (primarily for elements found in blood or paint, but also for minute details in the image) and photographed. Tests were done on the bloodstains, even the scorch marks. There was little chance to compare notes. "The idea was, 'Let's get as much as we can to take home and analyze there,'" he said.

Seven years of detailed analysis since Turin seems to confirm—despite a couple of dissident STURP

A close up of the facial image that appears on the Shroud. It is a positive, lifelike picture of a man in death. In many ways the Shroud corresponds exactly with historical accounts of Jesus' death.

Vernon Miller



members—that the image isn't a painting and that it accurately shows a crucified man. More specifically, it coincides medically in virtually every detail with historical accounts of Jesus' death. "STURP didn't go in assuming it was the burial cloth of Christ," said Gambescia, who himself looked for "anything to disprove that. But we found no evidence that it is a fraud."

Medically, the data confirmed his and others' findings that, in Gambescia's words, "the various markings are physiologically and anatomically correct, supporting its authenticity." Further photographic studies of the feet, especially, "made a big difference. You can see the second nail hole."

Turin didn't end Gambescia's research. He has been "polishing evidence with more research to be sure of the anatomical findings." He hopes to publish a paper on his findings in 1986—"if I can find the free time."

That paper may include data from studies of blood gases—something he has long wanted to do—which he planned for this year. "Machines today can give blood content and measure various blood gases with-

out major invasive procedures. We're trying to get one to measure the flow of oxygen [as the subject] inhales and exhales, see how the concentration of the gases change as a person's ability to breathe decreases, and extrapolate from those findings how long a person can stay on the cross." There's one obstacle: money. Renting the equipment costs \$10,000 to \$50,000; he hopes for a grant.

And Gambescia continues to take his frequent slide lecture on the Shroud of Turin to any group who invites him, assisted by his wife Mary who, after all these years, is now a "mini-expert herself," said son Joe Jr.

What, you may wonder, are Gambescia's personal conclusions?

"There's no question the Shroud is the burial cloth of a man who was crucified. Science can't prove that man was Jesus. But based on circumstantial probability [i.e., repeated correlations between the Shroud's image and the Gospels], I would say yes, the Shroud is the burial cloth of Jesus Christ."

Professor spends 30 years studying Shroud of Turin

PHILADELPHIA (AP) — In an ornate silver casket, behind an iron grill in a church altar in Turin, Italy, lies an ancient mystery that Dr. Joseph M. Gambescia has spent a third of a century helping to crack.

The mystery is the Shroud of Turin, one of the world's most controversial religious relics. On this ivory-colored linen cloth is the image of a man who had been brutally whipped, tortured and crucified.

Is it, as many claim, the burial cloth of Jesus Christ? Or is it merely a bogus relic, as others have contended since the 14th century?

Not easy questions. Gambescia, professor of medicine at Hahnemann University and chairman of the Department of Medicine at Philadelphia's St. Agnes Medical Center, has spent most of his adult life using medical science to answer them. In the process, he has become a leading medical expert on crucifixion as well as an authority on the shroud.

Gambescia first began studying aspects of the shroud in 1955 at the request of the Rev. Adam J. Otterbein, director of the Holy Shroud Guild and a key figure in promoting scientific and public interest in the shroud in the United States.

Otterbein, a proponent of scientific analysis of the ancient cloth, actively sought new ways to study it, approaching such varied groups as photographic experts at the Eastman Kodak Co., chemists in a New York City police crime lab and the FBI.

On the recommendation of Dr. Joseph Imbriglia, Hahnemann's former chairman of the Department of Pathology, Otterbein sought out Gambescia, then a young doctor directing a Hahnemann GI Research unit.

To Gambescia, the request

was unusual.

"He asked me to study the pathophysiology of crucifixion — the mechanics of death in a person who is crucified," he Gambescia said.

Intrigued, Gambescia agreed. He already was experienced in pathology, and although a devout Catholic, he knew virtually nothing about the Shroud of Turin "other than there was such a thing. So, I came without any opinion of it, which was ideal," said Gambescia.

"In research, you try to be as objective and uninvolved as possible. You want to avoid bias."

But he found he couldn't avoid problems.

The biggest was — and is — finding time. Gambescia's efforts are donated.

"Everytime I had some free time, I worked on it," he said.

Over three decades, that became difficult. He had to squeeze his studies on the "mechanics of death by crucifixion" around his duties as a father to 16 children, doctor, professor, lecturer and administrator. Yet, his deepening fascination with the subject drove him to make time.

"He was apparently already dead when a lance was thrust into his die," Gambescia said. "Pleural fluid would have accumulated in the chest cavity, along with blood. When breathing ceased, the red cells would settle to the lower part of the pleural cavity, separating from the plasma."

Gambescia's most unusual project came in the mid-1970s. With help from his son Joseph, he simulated a crucifixion. The purpose was simply to see what happens to the body anatomically when someone hangs in different positions from a crossbeam.

They made a cross from two beams of wood and implanted it

in the back yard of the family summer home at the New Jersey shore. Using straps at each end of the crossbeam or simply wrapping his hands around the crossbar, Joe hung from it several minutes at a time, with body and legs in various positions as his father took photos.

"It wasn't a sophisticated experiment — and I wonder now what the neighbors thought — but the aim was to get an anatomical portrait of a person hanging from a cross," said Joe.

One thing both noticed immediately was the effect on breathing. "I quickly found I had an intense desire to push (my body) up with my feet. I felt pressure on the upper torso, and kept digging in my heels to push up and relieve it."

It was "a good visualization, up to a point, of what it was like to be on cross," said Gambescia. "And it substantiated the reconstruction and the angle of the blood flow."

By the mid-1970s, years of such research had convinced him the shroud's image "was neither a hoax nor a fraud. Anatomically, everything comes together so easily."

In March 1977, at a Ramada Inn in Albuquerque, N.M., about 40 scientists and clergymen met for a two-day conference and formed the Shroud of Turin Research Project. It was the first convention of shroud experts in the United States. Together they wanted to develop scientific tests appropriate to study the cloth when it would be publicly displayed in Turin, Italy, in 1978 — the first public display in 50 years.

By combining his knowledge of crucifixion, history, medicine and anatomy, he reached conclusions that added to the international shroud research.

An unconventional conclusion was that two nails, not one, had

been hammered in the crucified man's feet — in contradiction to artistic renditions of the crucifixion and accounts of biblical scholars.

Spurring his discovery was a painting in his home by German Renaissance artist Mathias Grunewald depicting Christ's death, with a traditional, single spike through his feet. As he passed it daily, Gambescia began viewing it differently.

"That visual image of one nail concerned me," he said. "Knowing the anatomy of the ankle, it wasn't possible for legs and feet to react as traditionally depicted."

"One day, as I looked at the feet and ankles (in the picture), it dawned on me: There had to be two nails. One nail couldn't have held up a body," said Gambescia.

And, if there were two nails, "there had to be two bleeding points" pictured on the shroud, he said.

Close inspection of the blood spots near the footprints by photography and color enhancement has confirmed his theory: A nail was apparently driven through the ankle and heel of the right foot and in the cross, and another nail was driven through the center of the left foot and into the right one beneath. The latter is traditionally assumed to be the only nail.

Knowledge of anatomy solved another problem: the mystery of the bent arm.

Careful study by other researchers of the angle of bloodstains along the arms indicated that the man had repeatedly pulled himself up to breathe before slipping down into the "hanging" position. But they were puzzled that in the "up" position, his left arm was stretched out on the crossbeam, as pictured traditionally, while his right arm was bent at the elbow at a 45-degree angle.

Doctor uses medical science to probe Shroud of Turin

By William George Shuster
Associated Press

An ornate silver casket behind an iron grill in a church in Turin, Italy, contains an ancient mystery that Joseph M. Gambescia has spent 30 years trying to crack.

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Gambescia was particularly eager for the result of photographic and chemical studies. After some delay, STURP received approval from Umberto II of the House of Savoy — former king of Italy and legal owner of the shroud — and Turin's Archbishop Anastasio Ballestrero to conduct its research.

Sympathetic to the study, both men gave carte blanche to do any experiments necessary — as long as they didn't damage the cloth and were completed within a specific time after the exposition.

Gambescia, meanwhile, convened his own mini-conference of doctors, chosen for medical and scientific expertise regardless of religious affiliation.

"STURP's major thrust was chemistry, physics and related sciences. With only two medical doctors at Turin, I wanted to be sure we covered all the important medical aspects," said Gambescia.

On the evening of Oct. 8, 1978 — 20 months after the Albuquerque conference — STURP members waited eagerly for the last pilgrim to leave the Turin cathedral. For six weeks, since August, 3.3 million pilgrims and tourists had viewed the shroud. Now it was STURP's turn, and Gambescia was "thrilled with the chance to finally see what I had been studying since 1955."

The long, narrow burial cloth (14 feet, 6 inches long by 3 feet, 7 inches wide) was removed from its nitrogen-filled exposition case in the church, taken to a small hall in the adjoining royal palace and placed on

The Philadelphia Inquirer 27 Aug. 1985 P. 20 BP

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separation of red blood cells from
plasma could have caused the "wa-
tery bloodstains" found on the cloth
on the right side of the chest and
girdling the small of the back. This
finding corresponds with St. John's
description of the "blood and water".
he witnessed seeping from a lance
wound that Jesus received in his
right side.

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relieve it."

The cloth varied in color from
"ivory to sepia," said Gambescia. Evi-
dent were "reddish magenta blood-
stains and scorch marks [from a 16th-
century fire in the church], covered
with triangular patches" sewed on
by nuns. "That's all you can really
see because the closer you get to the
cloth, the more difficult it is to see
the image. You have to stand about
10 feet away to really appreciate it."
The door was closed. The cloth was
theirs to test for a week.

It was a nonstop scientific mara-
thon.

"We gathered data for 120 hours
straight," said Gambescia. "We
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prove that man was Jesus. But based
on circumstantial probability, I
would say, yes, the shroud is the
burial cloth of Jesus Christ."

ns to publishing

to form Historical Times Inc.
pping into a new market, circula-
n grew steadily, from 3,600 in 1960
130,000 today.

Fowler launched American His-
y Illustrated in 1966 because "I
in't want to be a Civil War-buff-
blisher the rest of my life," he
id.

But after years of steady growth,
istorical Times ran into rough
nes. Its acquisition of Pennsylva-
a Illustrated drained the company.
sweepstakes contest was another
ser. The company was "hemorrhag-
g," an official said.

"I had done enough reading to
now that I was following a classic
attern," Fowler said. "Hardly ever
o you find a big company where its
under remained its chief manager.
takes two different people to make
company successful."

Wanting to own "a very successful
company instead of owning and oper-
ing a mediocre" one, Fowler

and hired Warren B. Syer, who had
retired as head of ABC's publishing
division. Fowler remains board
chairman and is involved in long-
range planning.

"The problem was that the com-
pany had grown too fast," said Syer,
62, who tried to buy Historical Times
for ABC in 1975.

Syer fired employees at all levels,
increased salaries and reorganized
departments. The privately held
company began growing again,
bought several magazines and now
expects 1985 to be its most profitable
year. It has more than 100 employees.

All but two of the magazines oper-
ate out of the company's headquar-
ters, and all share production and
business facilities.

Running a publishing company in
Harrisburg does pose problems, Syer
said. Staff members do not get much
exposure to others in the business,
and hiring employees with special-
ized skills is difficult, he said.



Syer (left) and Fowler with magazines of Historical Times Inc.

Doctor Believes Shroud of Turin Authentic

By CLARENCE WALDRON
Press Staff Writer

PLEASANTVILLE — A Philadelphia doctor who took part in a 1978 study of the Shroud of Turin with 32 other scientists says most of them are convinced the shroud bears the image of Jesus Christ.

"Science disproves. Science has not disproved that it is not Christ," said Dr. Joseph Gambescia, chief of medicine at St. Agnes Medical Center in Philadelphia, in an address Sunday at St. Peter's School here. The Shroud of Turin, a 14-foot-

long cloth believed by some to be the burial garment in which Christ was wrapped after the crucifixion, bears a faint, life-sized image of a male body.

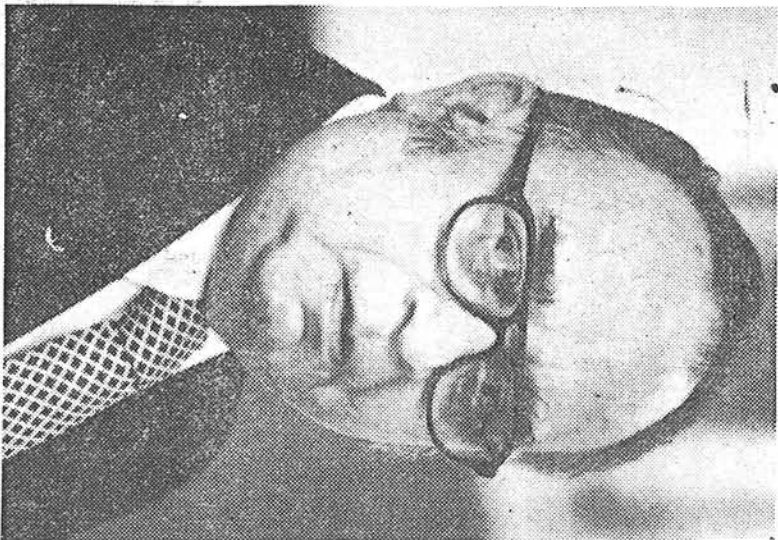
The shroud hangs in St. John the Baptist Cathedral in Turin, Italy. Although first discovered in France in 1352, it has been in Turin since 1578.

Gambescia said scientists are still not able to determine what produced the image on the shroud. However, he said the chances of it being of someone other than Christ are "minute."

He said after the lecture that the image the shroud bears, if Christ's, would preserve "the most important moment in all history, where we are redeemed and reconciled with God."

The doctor said he is conducting more studies on the physiology of death in a person suspended from a cross, which may shed more light on the shroud.

Gambescia's lecture, entitled "Science and the Shroud," was delivered in recognition of Lent, said Philip Cunningham, director of the office of religious education at St. Peter's.



Dr. Joseph Gambescia, above, believes the Shroud of Turin — shown at right with smaller artist's impressions of Christ — represents the 'most important moment in all history.'



The Press, Atlantic City—Monday, March 15, 1982

Staff Photos by Drake

THE PHILADELPHIA DAILY NEWS

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Christ's Burial Garment? It's Shrouded in Mystery

Joseph Gambescia hadn't given the Shroud of Turin much thought back in 1955. "It was interesting, period," he says now. He was a doctor. He was a Roman Catholic. But that was it.

For centuries, the 14-foot-long, 3½-foot-wide piece of linen was purported to be the burial garment of Jesus Christ. No scientist had tried to prove that it was — or wasn't — at that point. Ever since it turned up in 1357 at the Collegiate Church in Lirey, France, the shroud had stirred passionate debate on whether it was the actual "burial clothes" mentioned in the Gospels.

Even skeptics had to concede that the faint sepia image of a face and the deep burgundy marks referred to as "bloodstains" resembled that of a crucified man. But the question was, how did the image — a perfect photographic negative — get there 500 years before the discovery of photography? Was it the forgery of a 14th-century artist, or was it a miracle? Was it *really* the face of Christ?

Gambescia, then a 36-year-old staff doctor at Hahnemann Hospital, says those questions never crossed his mind. He had been in practice since 1950, after graduating from medical school in 1944 and serving in the armed forces. At Hahnemann, he was also associate professor of medicine and director of research of gastroenterology.

Then, the doctor received a phone call from the Rev. Adam Otterbein, who was stationed at St. Boniface Parish here.

Would Gambescia be interested in testing the shroud scientifically?

Father Otterbein was president of the Holy Shroud Guild, and he believed the shroud was authentic. So did the Rev. Peter Rinaldi. He had seen the shroud first hand at an exposition when he served as a 13-year-old altar boy in 1933 at St. John the Baptist Church in Turin, Italy, where the shroud had been enshrined since 1578. But both priests wanted proof.

The proposal piqued Gambescia's curiosity. It was, after all, a scientific puzzle.

So he joined the Guild's executive committee and brainstormed for the next two decades about how to conduct experiments.

"We could hang somebody from a cross and see what happens, but that wasn't a very ethical thing to do," said Gambescia, now 62, a father of 16 and director of medicine at St. Agnes Hospital in South Philadelphia.

They repeatedly appealed to the Vatican for permission to set up scientific experiments. The church replied cryptically: "The hour of the Shroud has not yet arrived." Although its custodian for six centuries, the Catholic Church had never officially declared its authenticity.

During the 1930s, Dr. Pierre Barbet had theorized that nails had not been placed in the fleshy palms of the victim — as artists had represented the Crucifixion for

centuries — but in the wrist bones, which would have supported the victim's weight. That was confirmed in 1968 when the skeleton of another first-century crucifixion victim was discovered with its wrist bones grazed by a nail.

Barbet thought one nail was driven into the feet, but Gambescia pointed out, "One nail wouldn't do the trick." The way the ankle is structured, the leg would have buckled at the knee joint.

Researchers checked shroud photographs and found two areas where blood was believed to be — and the possible entry of two nails.

Then, two breakthroughs occurred:

- Swiss criminologist Max Frei, a consultant to Interpol, found that among the debris he collected from the shroud



**Kitty
Caparella**

in 1973 were 48 pollen samples identical to pollens found in the 2,000-year-old sediment in Lake Genesareth.

- Los Alamos scientists reported that the image had three-dimensional information which could be encoded.

That aroused scientific interest and prompted the church to allow 30 researchers, including Gambescia, to study the linen for five days in 1978. In mid-October, the group reported its findings: The blood on the shroud was blood and its imprint corresponded with the angle of a crucifixion.

The image, the scientists agreed, was degraded cellulose in the flax of the fabric. Nothing was "on" the linen. No one could say how the cellulose had been altered. Yet the 3-D experiments showed the cloth-body distance and intensity correctly matched the anatomical curvature of a face and body.

They have yet to conduct carbon-14 dating of an eight-inch thread of the shroud to determine its age. That could quiet skeptics who believe the shroud to be the handiwork of a 14th-century artist.

And with new machines now available, Gambescia wants to study blood gases. "You could suspend somebody and put a mask on him and see what happens to his blood gases," he says. All he needs is a 5-foot-10, 160-pound volunteer.

For someone who once had no thoughts on the subject, Gambescia is now just riddled with questions.

Kitty Caparella's column appears Tuesdays.

By Michael Cray
Day Staff Writer

NEW LONDON — The wounds were many and the blood flowed heavily from the crucified person whose body was wrapped in the famous linen funeral shroud, according to experts in forensic science and pathology.

At the Saturday afternoon session of a symposium detailing individual portions of the work of the 40-person Shroud of Turin Research Project, Dr. Robert Bucklin swept through diagrams and photographs of the image appearing on the simple cloth, pointing to puncture wounds on the foot, a large lance wound on the left side of the chest, head wounds just below the scalp and numerous lacerations which tattooed the victim's back.

Without commenting on who the victim might have been or when he met his fate, Bucklin, a member of the Los Angeles County Medical Examiner's Office, said he is certain the image on the holy cloth is that of a crucifixion victim.

"I think without question we have a crucified person here with the cause of death congestive cardiac failure," Bucklin said.

Throughout history many have believed the image appearing on the shroud is that of Jesus Christ. The project has made no definitive statement on whose image is on the cloth.

Bucklin was one of nine members of the team to speak during the three-hour afternoon session at Palmer Auditorium on the Connecticut College campus. A receptive and attentive crowd of more than 300 persons attended the session. The symposium, which is open to the public and is free, continues today with morning and afternoon sessions.

Bucklin, pointing to dark spots which appear on the image of the body and talking in the graphic language of a medical examiner, briefly described the flow of blood from the wounds, but left the bulk of that discussion up to Dr. Joseph Gambescia, a physician at St. Agnes Medical Center in Philadelphia.

Like the others who spoke during the session, Gambescia attempted to describe his research in simple terms, despite the complexity of the project.

He described how a body which had been crucified would appear, and said the appearance of the image on the cloth conforms with crucifixion victims.

The Day, New London, Conn., Sunday, October 11, 1981

He also said that the left foot was actually nailed twice to a piece of wood, not once as is shown in most depictions of crucifixions, including that of Christ. The first nail was driven through the right ankle, and then the left foot was placed over the right and a second nail was driven through both, attaching the feet to the wood.

Using anatomy charts and slides to illustrate his points, Gambesci said the ankle and the pelvic area are the only spots in which the lower body could be secured in the position of a crucifixion victim. He also demonstrated that one arm of the victim was bent at the elbow, which he said also conforms with what happens in a crucifixion, despite the fact that most paintings of Christ's crucifixion show the arms in a symmetrical position.

Later in the afternoon, Vernon Miller, a photographer with the Brooks Institute in California, described the methods used to obtain some startling close-up photographs of the cloth. Prints of these photographs — some of which are magnified to show incredible detail — are on display as part of the Shroud exhibit at Branford House at the University of Connecticut's Avery Point campus in Groton.

Samuel Pellicori, an expert in spectroscopy — the study of light and colors — with the Santa Barbara Research Center, used sophisticated devices to measure the reflective qualities of the image and the charred portions of the cloth. He said he has determined that the image itself is no more than one 5,000th of an inch thick.

In one of the more complex talks of the session, spectroscopists Roger and Marty Gilbert of the Oriel Corporation of Stamford described their efforts to determine what substance makes up the image on the cloth and whether the apparent 'blood' stains are, in fact, blood or some other substance.

To the first question, they concluded the image does not appear to be paint or some form of pigment or dye. But they said they were unable to determine whether the stains were blood. They did find, however, that the composition of the stains is similar to iron oxide.

Dr. Joseph S. Accetta, a spectroscopist and researcher with the Lockheed Corp. said his studies indicate the stains are blood. But he added that more research must be done.

Experts relate crucifixion details

By Linda Loyd
Inquirer Staff Writer

NEW LONDON, Conn. — Three years ago, a group of moonlighting scientists set out to determine whether the Shroud of Turin was the real thing.

For centuries, the shroud, believed by some to be the actual burial garment of Jesus, had tantalized scientists and the religious alike. The high-powered group of scholars, representing various fields and coming from such places as the Los Alamos (N.M.) Scientific Laboratory, the Jet Propulsion Laboratory in California and private universities, was going to find out once and for all.

They were given permission by church officials in Italy to make sophisticated tests with space-age instruments on the 14-foot strip of linen that has been enshrined at the Cathedral of St. John of Turin, Italy, since 1578. They worked around the clock for five days to collect data that, they hoped, would eventually unlock the secrets of the shroud, Christendom's most famous relic — and religion's most teasing challenge to modern science.

Finally this weekend, after processing thousands of clues and bits of information, the 40-member team reconvened to present its conclusions at a symposium at Connecticut College.

The answer: a resounding maybe.

The tantalizing prospect that the long-awaited findings might lead to a final judgment on the relic's authenticity has attracted throngs of journalists, religious pilgrims and the merely curious to this quiet New England seaport. The weekend also marked the opening of a two-month public exhibit of 200 color photographs of the testing and a life-size replica of the shroud, bearing the shadowy image of an apparently crucified man.

Between now and Dec. 9, when the exhibit closes, the Southeastern Connecticut Chamber of Commerce hopes to attract thousands to the display.

But the trouble is — as the scientists made clear here Friday and yesterday — there is no assurance that there is all that much to believe in.

Yes, the blurry image on the shroud of Turin is that of a "scourged and crucified man," some of the researchers said during a news conference held Friday to discuss their findings. But whether the image is that of Jesus is still not known

Report on the Shroud of Turin

and may never be.

The final reports of the team members, who performed an array of nondestructive tests on the cloth using computers, electron microscopes and image analyzers, yielded little solid agreement on the key questions of authenticity.

Scientists said they can be fairly certain that the shroud is not a fake — that no dyes, stains or paints were applied to fool the faithful. But they still don't have conclusive answers to the big questions: How old is it? Where did it come from? And how was the faint, straw-yellow image of a bloodied, bearded man formed?

"We can conclude for now that the shroud image is that of a real human form of a scourged, crucified man," said Joan Janney, a member of the nonprofit Shroud of Turin Research Project Inc. "It is not the product of an artist. The blood stains are composed of hemoglobin."

Janney, who on Friday read a brief report that represented a brief summary of the team's findings, added, however, that the origin of the image on the cloth remains unexplained.

"The image is an ongoing mystery, and until further chemical studies are made, perhaps by this group of scientists, or perhaps by some scientists in the future, the problem remains unsolved," she said.

Janney, a chemist at Los Alamos Scientific Laboratory, first got together in 1977 with colleagues from Los Alamos and across the country who had taken up shroud research as a sort of professional hobby. They decided to consider what they really knew about the shroud and what more they could do.

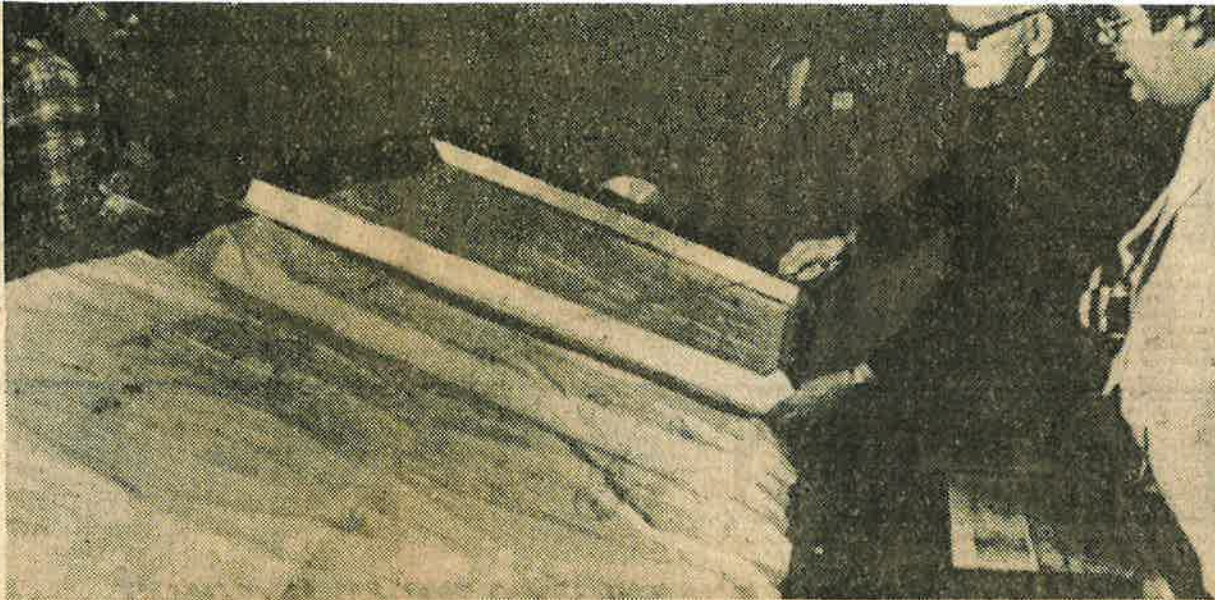
The scientists, in such diverse fields as physics, chemistry, aerodynamics and medicine, thought once they could undertake a chemical analysis of the cloth they might come up with something conclusive.

Before the current study, researchers in the United States had been working from low-quality, often aged photographs, rather than from first-hand examination of the shroud.

But for all their sophisticated gadgetry, the shroud team's scrutiny of the relic neither verified nor dismissed its authenticity. Still, their findings promised to create a stir

And the verdict
on the shroud is:

2-A
Sunday, Oct. 11, 1981
Philadelphia Inquirer



Associated Press

This replica of the Shroud of Turin is part of an exhibit in New London that lasts through Dec. 9

within religious and scientific circles.

"We have a better idea of what we think is on the shroud," said John Jackson, a physicist at Colorado University. "We think we know the chemistry."

But on the question of how the image on the shroud was formed — a scorch or an intense burst of light or intervention of the supernatural — scientists disagree.

"The basic problem from a scientific point of view is that some explanations which might be tenable from a chemical point of view are precluded by physics," said Janney, reading the scientists' report.

"There are no chemical or physical methods known which can account for the totality of the image, nor can any combination of physical, chemical, biological or medical circumstances explain the image completely." At present, she said, a solution "does not appear to be obtainable by the best efforts of the members of the shroud team."

The question of whether the testing can offer any scientific evidence in support of a risen Christ is something most members of the shroud team are carefully avoiding. Privately, a few of the scientists have openly expressed their opinions that the shroud may be the real thing. But scientifically, they say, proof is still lacking.

"There is nothing in some of the work that would preclude the Resurrection," said pathologist Robert Bucklin, a deputy medical examiner of Los Angeles County. Nor, he added, "is there any way the work done by this team prove the Resurrection."

One member of the Shroud of Turin Research Project who said he went to Turin a skeptic and who has become a believer is Dr. Joseph M. Gambescia of Bala Cynwyd, director of medicine at St. Agnes Medical Center, who has been "exploring the death of the crucified person" on the shroud since 1955.

"Now I feel it's the authentic cloth," said the physician, a devout Roman Catholic and father of 16 children. "From a circumstantial viewpoint, the odds are this is the cloth that the historic Jesus was entombed on."

But not all scientists in the project agree, and most carefully steered clear of religious debate and their scientific conclusions.

"We're simply scientists trying to come together to investigate something we find very interesting," said Jackson, the physicist from Colorado. He said the team members "are human and we can have religious points of view. But we are not trying to promote a religious point of view." He said the scientists run the gamut of religious beliefs from fundamentalist Christian to Protestants, Catholics, Jews and agnostics. "We have them all."

"The majority of perfectly legitimate researchers in their respected fields who came to be, in one way or another, interested in this project," said Barbara Culliton, news editor of Science Magazine who has written about the shroud research.

In a telephone interview a few days before the symposium, Culliton said she would not be surprised if some of the scientists went "a little off the deep end" in their conclusions. She added, however, "Except for the Jesus Christ element, this is essentially analogous to dating King Tut's tomb and looking at the Dead Sea Scrolls and various other archaeological artifacts. But this just has such a hugely melodramatic element to it."

The shroud has been the subject of speculation ever since it was denounced as a "clever forgery" by a French archbishop, its owner in the 14th century, who said he had obtained a confession from the artist who had painted it.

It first surfaced in France about 1350, survived two fires and the ravages of early crude scientific tests — such as boiling it in oil and lye — before being moved to Turin in 1578.

There it has remained in the protection of the Catholic archbishop, usually locked in a silver casket kept beneath the ornate, skylit dome of the cathedral.

It was a photograph taken during an 1898 exhibit that sparked scientific investigation into the authenticity of the shroud. An amateur photographer, Secondo Pia, took a startling picture of the image and discovered it was a photographic negative; when a positive was made the features of the longhaired, bearded man became sharp and quite distinct.

More recently, a Swiss criminologist, Max Frei, discovered traces of pollen on the threads of the cloth from numerous different plants, some of which were known in Palestine at the time of the death of Jesus.

The Roman Catholic Church has taken no position on the shroud's authenticity but has encouraged its veneration.

The only sure method of determining the precise age of the shroud is through a carbon-14 dating process, which church officials have so far ruled out because it might damage a portion of the fabric.

When the shroud researchers were asked Friday what they had really learned about the shroud, Janney of Los Alamos replied, "We can prove much more easily what it was not than what it was. I don't think science can ever answer who it was on the shroud," she said.

Scientists, however, are now perfecting a form of carbon-14 dating that would require only the tiniest piece of cloth, and officials of the Turin archdiocese have indicated they will give the OK when the test is reliable and safe.

"Frustrated?" repeated one of the team members when asked about the inconclusive findings of the many tests. "Yes, I'm frustrated."

But in the spirit of science, Jackson said, the scientists will not give up "until we come up with the test" that might unravel enigma of the holy shroud.

Science can't say

Local Men Investigate the Shroud

Doctor Studies the 'Rosetta Stone Cloth'

By Anthony J. Petracca, Jr.

For a Philadelphia physician, the famed Shroud of Turin is almost certainly the burial shroud of Christ.

Dr. Joseph Gambescia, who has had a professional interest in the Shroud of Turin since 1965 and was one of a team of scientists to study the Shroud in 1978, told the South Philadelphia Clergy Conference at St. Agnes Hospital last Thursday (April 9) that the Shroud could be called the "rosetta stone cloth" — a cloth which, like the famed discovery in Egyptology, brings a message in three languages.

For Dr. Gambescia, the three languages of the Shroud of Turin are scientific, biblical and spiritual. The scientific study of the Shroud, he said, will only strengthen, not contradict, the Shroud's other languages.

The first part of Dr. Gambescia's presentation at St. Agnes concerned an examination of the cloth itself. He explained, "The image itself is a negative of the body of Christ; when a

picture is taken of it and the negative developed, a positive picture of a body is produced."

These marks are different from the marks left by blood which penetrated the back of the cloth. He said that these findings, coupled with the observation that the image itself is unlike a portrait in that it is not two — but three-dimensional, have led some scientists to conclude that the image is not the work of an artist.



DR. JOSEPH GAMBESCIA



FATHER ADAM OTTERBEIN, C.S.S.R.

Scholar Combines Faith, Science

By PAUL CULLEN

EPHRATA (NC) — Redemptorist Father Adam Otterbein of Our Mother of Perpetual Help parish in Ephrata, Pa., is a man of faith and a man of science.

For decades he has studied about the shroud of Turin, but if the shroud were proven to be a forgery tomorrow, his faith would not be affected.

"If it is actually the cloth of the body of Christ, we have another record of the suffering of Christ," said Father Otterbein, president of the Holy Shroud Guild. "It gives us the actual human features of Christ. It can help to make him much more real."

But if the shroud is disproved, "it doesn't af-

fect the faith. This is very important. Science will never be able to prove this is the shroud of Christ. It can only prove that this is not a fraud."

Father Otterbein, who was asst. pastor at St. Peter's Church in Philadelphia, for a time has studied in detail the shroud, a 14-foot long piece of cloth believed to be the burial cloth of Christ. He knows about the types of microscopic grains of pollen that point to where the shroud has been, and the herringbone, three-to-one twill of the cloth itself.

The authenticity of the shroud brings up another question, he says. "Who is the man of the shroud? For that we have to go to the Gospels." The result is a "case of perfect circumstantial evidence."

A physician looks at the Shroud

Joseph M. Gambescia

It is not the purpose of this article to prove that the Shroud of Turin is the burial cloth of Jesus Christ. That is a task for science and history. Nor will I speak of the Shroud from a scientific viewpoint.

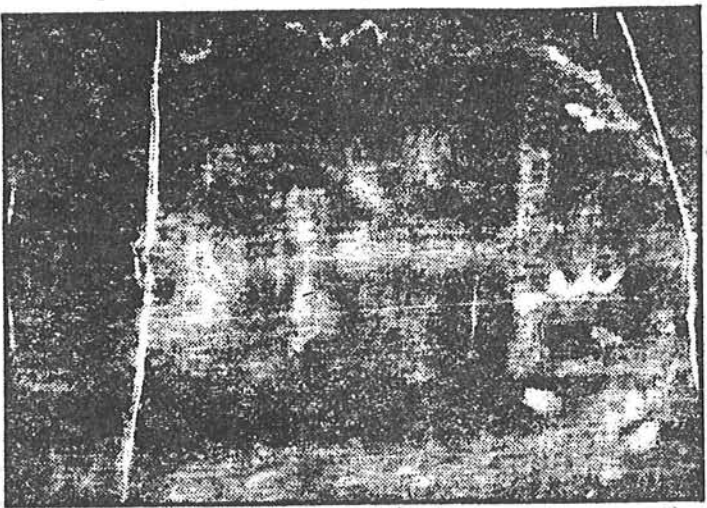
Further, while the Shroud may seem to be an argument for Jesus as Son of God, such a position is a matter of faith and is beyond the scope of this piece. Faith is a gift from God — not something achieved. Faith rests in a person, not a cloth. My purpose is to discuss from the vantage of having studied the Shroud since 1955 as a physician, and having participated in recent scientific investigations, what the Shroud of Turin, with its photographic-like image, means to me.

The Shroud of Turin has upon it an image. The image has characteristics of a photographic negative. This negativity is remarkably demonstrated when a photograph is taken of the cloth: on the negative plate the peculiar image noted on the cloth is seen to be the positive image of a man who was scourged, crucified, crowned with thorns and pierced in the side with a lance.

Some allege the Shroud to be the actual burial cloth of Jesus Christ. Some allege it to be a fraud. At present, one is unable to say with certitude that the image on the cloth is, in fact, that of Jesus Christ, although circumstantial probability invites such a conclusion. Moreover, it is not a fraud, since it is quite unlikely that anyone deliberately setting out to confuse, confound or mislead fabricated so marvelous an artifact.

Rather, it is either a cloth that enveloped a crucified man some 2,000 years ago in the Mideast, or it is a remarkable unique piece of 13th or 14th Century art. Maintaining this attitude is crucial since it permits both scientific and religious study to proceed without serious challenge by either discipline and the posture of neutrality leaves one free of conflicts of interest.

The Shroud of Turin is best appreciated when perceived as a kind of "Rosetta-Stone."



The Rosetta-Stone has three languages on it — Greek, Demotic (Coptic) and ancient Egyptian hieroglyphics. Translating the Greek and then the Demotic was the key that opened the mystery of the ancient Egyptian hieroglyphic language. The Turin Shroud has upon it three languages — a scientific language, a biblical language and a language of the spirit, which tells the story of a Tremendous Lover. Understanding the scientific and biblical language is the key that permits one to explore this language of the spirit. It can only be translated by one who lives with God.

The true worth of the Turin cloth then does not depend on its authenticity as the burial cloth of Christ containing thereon an image of the crucified Christ (although if such would seem to be true it would be a most sacred relic). Should scientific findings raise certain questions, as was done early in the Shroud's history, its value would not be diminished one iota.

Contemplating the image on the cloth, one is

able to comprehend the need for the preparation that was necessary for Christ to make his "fiat," from the Incarnation and his hidden life, to the temptation in the desert and his ministry, to the Garden of Gethsemane and the final offering on the cross.

Contemplating the Shroud one can begin to penetrate the mystery of suffering undergone by the Tremendous Lover. On Calvary, Christ engulfed all the sufferings of the world for all time. Our pain and suffering of whatever mode can become, through Christ, meaningful, redemptive acts, as we perceive the meaning of St. Paul's amazing statement that "we must make up what is lacking in the suffering of Christ."

Contemplating the image on the cloth, one meets the almost unbearable reality of love. It is at Calvary that, lifted high on the cross, Christ died for us, so much did he love us. It is at Calvary that we are saved, we are healed, we are reconciled. At Calvary we are pursued and captivated by the living God.

If the image on the cloth is Christ's autograph, we can appreciate how Christ looked when he bowed his head on Good Friday. At first the image may look strange, but if you study it you will see a dignity and majesty that you would not expect from a man other than God's Son who had undergone all the agony that is indicated by the imprints.

And if Christ chose to leave an image of himself, he chose that most propitious moment in which the blood stains and bruises of his Passion so eloquently speak of his unconditional love for us. He chose his best "picture" to give to mankind. He chose a moment that will, in truth, leave us speechless and exhaust our vocabulary and our thoughts as we try to reciprocate his love: "Greater love than this no man has that he lay down his life for a friend."

"If Christ is not risen, our faith is in vain," St. Paul says. And all of this for me:

(Joseph M. Gambescia, M.D., is chairman of the Department of Medicine at St. Agnes Hospital in Philadelphia and professor of medicine at Hahnemann Medical College. He was a member of the inter-faith scientific team that examined the Shroud for two weeks in October 1978.)

The Philadelphia Inquirer

Bala Cynwyd Doctor

In 1898 an Italian photographer named Secondo Pia took a photograph for documentary purposes of an ancient piece of cloth. On the surface, it appeared to be nothing more than a stained and scorched remnant of an earlier century.

When he developed the film he was astonished to see the likeness of a man appear. The man had been scourged and crucified. There was suffering on his face.

The extraordinary piece of linen, 14 feet, six inches long and three feet, seven inches wide, is known today as the Holy Shroud of Turin. Dr. Joseph Gambescia of Bala Cynwyd, a 1944 graduate of the Hahnemann Medical College, is a siddonologist — an expert in the study of the Holy Shroud. He has studied it since 1955, when Father Adam Otterbein, president of the Holy Shroud Guild, asked him to conduct experiments on the pathophysiology of crucifixion.

Since 1968, Dr. Gambescia has been a member of the Shroud of Turin Research

Project, a national group established to study the shroud scientifically. Dr. Gambescia spent two weeks with the group in Turin, Italy, last October to examine the shroud firsthand.

"As there were three languages on the Rosetta-Stone," as he refers to the cloth, "so are there three 'languages' on the cloth. There is an archaeological language, meaning that the cloth can be studied from a purely scientific standpoint. It can also be viewed from a historical perspective, as a physical representation of Biblical accounts. Finally, there is a spiritual language. This is what the cloth means to each individual on a personal level."

Historically, the Shroud of Turin's authenticity has been established since 1353. References in certain writings suggest its existence from the first century A.D. It is presently kept in a chapel in Turin in the care of the Archbishop of Turin.

The image on the shroud is very faint when viewed with the naked eye. Only through photographs does one get a real perception of the intensity and reality of the image. Swellings on different parts of the face indicate a broken nose, abrasions and bruises. According to Gambescia, there is scientific evidence that the image on the shroud was not the work of a painter.

"Through the application to the shroud of techniques used in astrophysics to study pictures of the planets, it is clear that whatever caused the image was something related to cloth-body distance. It is not an artistic rendering in the generally recognized use of the term."

Gambescia said it has been theorized that blood and sweat from the body wrapped in the shroud interacted with myrrh and aloes used as burial preservatives. Vapors from this chemical reaction may have caused the image on the cloth. Most scientists do not accept this explanation for a variety of reasons. Another postulate is that the image was branded on the cloth by a burst of radiant energy.

That the shroud at one time was in Palestine was suggested by forensic pathologist Max Frei when he microscopically examined pollen from the cloth and found it to be from plants indigenous to that part of the world. Gambescia said the linen is of a herringbone twill pattern

similar to the type of material found in Palestine some 2,000 years ago. Errors noted in the weave of the cloth could have resulted from the looms used in that time.

Stains and marks on the shroud indicate that the buried man had been harshly treated. Gambescia said there is an obvious ulcerated area across the back where the man of the shroud would have carried the crossbeam of the cross on his way to crucifixion.

"Wounds on the back show that this man carried a heavy object. It was the practice of the Romans to force the victim to carry only the crossbeam. After the victim was impaled on the crossbeam, it was lifted onto the upright beam of the cross and the legs pinioned to the upright beam."

From an anatomical standpoint, blood stains on the cloth are precisely where nails would have been driven through the crucified man's wrists. Gambescia said that nails driven through the palms, as depicted in conventional renderings of the crucifixion, could not have supported the weight of a man. He also noted that the imprint on the shroud shows only four fingers. "This is a positive anatomical explanation, because a nail passing through the wrist bone would injure the median nerve and partially paralyze the thumb, drawing it close to the palm," he said. "A 14th-century artist painting on the cloth could not have known this."

Studies Holy Shroud

Nails in the feet were also appropriately placed to support the weight of a human body. "Nails are shown to have been driven through the Shopart's joint on the right foot, where there is a blood flow over the joint. Another blood flow a little below the joint is where the other foot was crossed over the first and nailed to the cross," Gambescia explained.

More than 120 scourge marks occurring at two different axes indicate that the man was lashed from two sides with thongs of the type used by Roman lictors. Dumbbell-shaped marks on the shroud are from small pieces of bone or metal attached to the leather whips, which tore flesh and contributed to the torment of scourging.

Rivulets of blood from the scalp correspond to the placement on the head of a crown of thorns. Gambescia pointed out, however, that it is unlikely the thorns were actually woven into a crown. He believes the crown was a mat, beat into the head so that it pierced the forehead and scalp.

Roman law dictated that even if the crucified man was dead, a positive lethal act was to be performed at the end of a crucifixion. Usually the condemned man was pierced in the chest with a lance. Gambescia said this practice is confirmed by study of the shroud.

"Markings on the cloth suggest several types of blood flow. If pleural fluid accumulated in the chest cavity along with blood and cessation of breathing occurred, the red cells could have gravitated to the lower portion of the pleural cavity. A lance thrust, opening the chest, might then have been followed by a flow of red cells and plasma. This would have been interpreted by St. John as blood and water."

Gambescia explained that crucifixion is a slow death by asphyxiation. To breathe, the hanging man needed some support from below or the position of the chest muscles would prevent him from

taking a breath. Because the crucified man's feet were nailed to the cross, he was able to push himself up for enough elevation to relax the chest muscles and breathe. If his feet had not been nailed, he would have died quickly.

"The Romans wanted to prolong the crucified man's agony. They learned that by nailing the feet as well as the hands to the cross, death would be postponed. The entire process is a horrifying insight of man's inhumanity to man," Gambescia said.

Considering the shroud from a biblical viewpoint, Gambescia has speculated that it may well be the cloth donated by the wealthy Pharisee Joseph of Arimathea for the burial of Christ some 2,000 years ago.

"It would be highly paradoxical for a criminal to have been buried in an expensive quality cloth, as the shroud was," he said.

He went on to say it has been postulated that two rounded impressions noted over the eyelids on a 3-D representation of the cloth may have been caused by coins placed on the eyes of the deceased man. It was the custom of the Jews to place heavy objects on the eyelids to prevent them from opening.

Gambescia added that there are no signs of body deterioration on the shroud, suggesting that whoever was buried in the cloth did not remain in it very long. This conjecture is in agreement with the biblical account of Christ's resurrection from the dead three days after his burial.

From a strictly personal perspective, Gambescia has his own theory about the Holy Shroud of Turin.

"The doctrine of the Catholic Church teaches that Jesus Christ was both divine and human," he said. "As a man, Christ had the same emotions and feelings that you and I have. I think that Christ wanted to leave a picture of Himself as a symbol of His love for mankind. I think that some 2,000 years ago He said, 'I'm going to leave my picture and someday, when they're rummaging around, they'll find it.'"

"This is a skeptical world today. All of our technology screams that God is dead. Well, now we're using technology to prove that God isn't dead. I think He had it planned this way."

S. Phila. Doctor's An Expert On The Shroud Of Turin

BY PAULA SAPIENZA

More than 80 years ago, an Italian photographer named Secondo Pia took a picture of what is known today as the Holy Shroud of Turin, the cloth that is believed to have been the burial sheet of Jesus Christ after he was crucified.

When Pia developed the film, he unsuspectingly found a portrait of a man who bore the markings of a severe beating and the holes identified with a crucifixion.

It was the first time in history the cloth revealed a definite image of what religious historians had documented as the face and body of Christ. Since then, modern technology has developed more scientific methods for studying the Holy Shroud, and a South Philadelphia physi-



Dr. Joseph M. Gambescia

cian has become involved.

DR. JOSEPH M. GAMBESCIA, of South Philadelphia, has for the past 11 years been a member of the Shroud of Turin Research Project, a national group of doctors and scientists elected to study

the Shroud in a scientific manner. Dr. Gambescia last year went to the Cathedral of Turin, Italy, where the Shroud has been kept since 1578, to examine it first-hand.

Dr. Gambescia was one of the 33 doctors and scientists from across the world who studied the cloth, which measures 7½-feet-long and 3 feet, 7 inches-wide.

Dr. Gambescia describes the herring bone twill patterned-Shroud as being similar to the type of material found in Palestine some 2,000 years ago. Errors noted in the weave of the cloth could have resulted from the looms used in that time, Dr. Gambescia said.

When viewed with the naked eye, the image on the Shroud is very faint, ex-

plained Gambescia, 60, a graduate of Hahnemann Medical College. Only through photography does one get a perception of the image, which shows swelling on the face, a broken nose, and abrasions and bruises on the body, he added.

Dr. Gambescia said scientists have theorized the image became imprinted on the cloth through a chemical reaction among the blood, sweat and myrrh and aloe, used then as burial preservatives.

He added that other scientists believe the image was created by a burst of radiant energy — and that still other scientists don't agree with either theory.

DR. GAMBESCIA, who was asked by the Rev. Adam Otterbein, president

(Continued on page 2)

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A close-up of the face revealed on the Shroud of Turin through photography.

Shroud

(Continued from page 1).

of the Holy Shroud Guild, to conduct experiments on the pathophysiology of crucifixion, said his work with Holy Shroud concentrated around the image of nail wounds, especially in the feet and sides.

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the joint, is where the other foot was crossed over the first and nailed to the cross," Dr. Gambescia explained.

Roman law dictated that even if the crucified man was dead, a positive lethal act was to be performed at the end of the crucifixion. Dr. Gambescia said that the Roman practice of piercing the condemned man's chest with a lance was confirmed by the Shroud.

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man's feet were nailed to the cross, he was able to push himself up far enough to relax the chest muscles and breathe. If his feet had not been nailed, he would have died quickly.

Dr. Gambescia also noted that the imprint of the Shroud shows only 4 fingers. This, he said, is positive anatomical evidence that the Shroud is not just a painted image of Christ.

"A nail passing through the wrist bone would injure the median nerve and partially paralyze the thumb, drawing it close to the palm. A 14th-century artist painting on the cloth could not have known this," Dr. Gambescia said.

Dr. Gambescia added there are no signs of body deterioration on the Holy Shroud, which is now

yellow in color and ragged. He suggests that whoever was buried in the cloth was not in it very long. According to The Bible, Christ was resurrected from the dead 3 days after his burial.

Dr. Gambescia also has his own perspective about the Holy Shroud of Turin, with which he has been involved since 1955.

"I think that Christ wanted to leave a picture of Himself as a symbol of his love for mankind. I think that some 2,000 years ago He said, 'I'm going to leave my picture and some day, when they're rummaging around, they'll find it,'" Dr. Gambescia said.



Dr. Gambescia and the Holy Shroud of Turin

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The extraordinary piece of linen, 14 feet, six inches long and three feet, seven inches wide, is known today as the Holy Shroud of Turin. Hahnemann alumnus **Joseph M. Gambescia, M.D., '44**, is a sindonologist, or expert in the study of the Holy Shroud. He has studied it since 1955, when **Father Adam Otterbein**, president of the Holy Shroud Guild, asked him to conduct experiments on the pathophysiology of crucifixion. Since 1968, Dr. Gambescia has been a member of the Shroud of Turin Research Project, a national group established to study the shroud scientifically. Dr. Gambescia spent two weeks with the group in Turin, Italy, last October to examine the

shroud firsthand.

He refers to the shroud as the Rosetta-Stone Cloth. "As there were three languages on the Rosetta-Stone, so are there three 'languages' on the cloth," he said. "There is an archaeological language, meaning that the cloth can be studied from a purely scientific standpoint. It can also be viewed from a historical perspective, as a physical representation of biblical accounts. Finally, there is a spiritual language. This is what the cloth means to each individual on a personal level."

Historically, the Shroud of Turin's authenticity has been established since 1353. References in certain writings suggest its existence from the first century A.D. It is presently kept in a chapel in Turin in the care of the Archbishop of Turin.

The image on the shroud is very faint when viewed with the naked eye. Only through photographs does one get a real perception of the intensity and reality of the image. Swellings on different parts of the face indicate a broken nose, abrasions and bruises.

City Edition

Holy cloth?

Philadelphia doctor believes Turin shroud may be Christ's

By JOSEPH P. BARRETT
Of The Bulletin Staff

Suddenly He was there. Jesus. The Christ.

His image flashed on the screen.

The picture was similar to thousands of such images seen in churches, parsonages, school rooms and on the walls of the homes of believers.

It was similar but not quite the same. For the picture, taken from the Holy Shroud of Turin and shown in a slide lecture last week at St. Denis auditorium on Eagle road in Havertown, was of a man grown old overnight.

The lecturer was Dr. Joseph M. Gambescia, chairman of the department of Medicine at St. Agnes Hospital and professor of medicine at Hahnemann Medical College and Hospital, Philadelphia. He lives in Bala-Cynwyd.

Dr. Gambescia is also a sindonologist, an expert in the study of the so-called Holy Shroud of Turin. A Roman Catholic, he is a member of the Shroud of Turin Research Project, which spent two weeks in Italy last October studying it and conducting tests. The group also included Protestants and Jews.

The Shroud of Turin is said to be the cloth in which Christ's body was wrapped when it was removed from the cross and buried. It is said to bear

the image of a man, which many Christians believe is Christ.

Scientists who have examined the shroud say the image was not painted on. Some believe it was transferred to the cloth by a burst of radiant energy.

The shroud, kept under guard at a chapel in Turin, Italy, is in the care of the Roman Catholic Church but is legally owned by a deposed Italian king whose family acquired it in 1452. Its existence has been documented since 1353, but there are references to it in church writings dating from the first century A.D.

The shroud is 14 feet, six inches long and three feet, seven inches wide. It is of a herringbone twill pattern similar to the type of material found in Palestine some 2,000 years ago. It is the burial cloth of a man who was beaten, scourged and crucified.

The man was 5 foot 10, weighed 150 pounds and wore his hair braided back into a pony tail — the custom in the time of Christ, Dr. Gambescia said.

The man was badly beaten.

"We see swelling in different parts of the face," Dr. Gambescia said, "perhaps a broken nose along with abrasions and bruises. We can visualize a stick or branch of a tree slashed across the face."

Showing a picture of the body, Dr.

Please Turn to Page 10



Dr. Joseph M. Gambescia
... a sindonologist

Rain for Bowser

By RONALD GOLDWYN
Of The Bulletin Staff

With four days left until Monday voter registration deadline, supporters of Charles W. Bowser for mayor yesterday launched what they will be a weekend blitz to sign up voters.

But it rained on their parade yesterday at 52d and Pine sts. and nobody registered.

About 25 persons huddled under a doorway at Samuel B. Huey School, across from Blackstone where Bowser backers had called a "Celebrity Motorcade-Rally." Politicians and celebrities, including Bowser, radio personality G. Woods and music man Kenny G weren't around.

"This is short notice; it's not perfect," announced Brother Miles of the Black United Front who had organized the event for Bowser's campaign. "We're the people in the street and we have to do the work in the street."

"Let folks know Monday is the day and they have to register now. Don't let them get away."

The rain may have washed away yesterday's outing, but even on Monday days this spring, voter registration has barely rippled the sea of Philadelphia politics. Bowser is the only mayoral candidate even making an effort.

Phila. couple is charged

By ELMER SMITH
Of The Bulletin Staff

Rendell and Peter F. Vaira, U.S. attorney for Eastern Pennsylvania. Rendell and Vaira said the charges

der on the state charges and were turned over to federal authorities. Vaira said a federal indict



Doctor believes Christ may have

Continued From Page 9
Gambescia pointed out marks on the shroud.

"We find two different axes of scourging, indicating that two men performed the scourging," he said. "The dumbbell-shaped marks were caused by whips used by Roman soldiers which had two or three metal balls on the end. If we look carefully we'll see more than 200 scourge marks."

In his talk Dr. Gambescia explained several theories which are at variance with the traditional concepts of the Crucifixion of Jesus Christ. For

instance, he believes the crown of thorns was more of a mat than a circular branch with thorns on it.

"I can't think of anyone who would weave a crown of thorns," he said. "His hands would be injured by the nettles which would stick. The crown was a mat which was put upon his head and then banged down with a stick so that it pierced the forehead and scalp and caused excruciating pain."

Another theory developed through study of the shroud was that the crucified man did not carry the entire cross, as artists have depicted with

both a horizontal and vertical beam.

"We know that it was the practice for the crucified to carry the crossbeam, and this is what the wounds across the back indicate," he said. "Then the crossbar was lifted into the upright beam, which was all ways in place."

Studies have shown that the crucified man was impaled on nails driven through the wrists, instead of the palms of the hands as popularly believed.

"If the nails were driven through the palms," Dr. Gambescia said, "they would not support the weight of

the body. It would fall off the cross."

He also pointed out that the figure on the shroud has only four fingers. The thumb is not shown. He cites this as a proof that the shroud is not a forgery.

"This is a positive anatomical explanation, because the nail through the wrist injured the median nerve which partially paralyzed the thumb which would be drawn close to the palm," he said. "It would be unlikely for an artist to leave out the thumb."

The nails were eight to 10 inches long.

Dr. Gambescia also postulates that two nails were used to hold the feet on the cross. "The nailing onto the cross was accomplished with two nails," he said. "One through the right foot and then the left foot was nailed over the right foot. There should be two nails and that is exactly what we found."

Crucifixion was a slow death by asphyxiation. The condemned had to thrust himself upward on his nailed feet to breathe. If the nails failed to hold, he died quickly and this the Romans did not want. They wanted to prolong the death. This is why they broke the legs of the two thieves crucified with Christ.

left his mark

As the Bible tells us, it wasn't necessary to break Christ's legs, as he was already dead. But Dr. Gambescia points out that according to Roman law one last act had to be performed. A centurion had to pierce the side with a lance, and blood and water flowed.

Dr. Gambescia believes the study of the shroud confirms this.

"There is a plausible explanation for this," he said. "Since he was already dead and there was no motion, the red cells settled to the bottom of the chest cavity. The plasma which is above this is clear, so if a body was pierced with a lance, first the red cells would appear and as this level diminishes, the clear fluid would come out and this would be interpreted as blood and water."

Dr. Gambescia said that the image is very faint when viewed with the naked eye. It is only through photographs that one gets a real perception of what is on the shroud.

This is what happened in 1898 when the first pictures were taken of the figure on the shroud. An amateur photographer, Secondo Pia, returned to his laboratory and when he developed his film, was startled to see the likeness of a man appear.

"There is a theory how this took place," said Dr. Gambescia, "the blood and sweat interacted with myrrh and aloes, and this chemical reaction set up vapors which caused the stain on the cloth."

Dr. Gambescia was asked if he thought a medieval fraud had been perpetrated on present-day scientists.

"I do not think that anybody set out to fool anybody else," he said. "I think that it is an authentic piece of art of the 12th or 13th Century of which we had no previous knowledge, or it is a burial cloth which goes back 2,000 years."

"My opinion is that there is a lot of strong circumstantial evidence that supports the theory that this is an authentic burial cloth that dates back to the time of Christ."

"One of the most amazing or telling things is, what artist of the 12th or 13th century would have had the audacity to draw Jesus Christ naked? The man in the cloth is naked."

"Photography gives you a chance to do something for someone else. To give a picture of yourself to someone else, then years later rummaging through a drawer you find a picture of someone you love."

"I think that Christ did that. I think Christ 2,000 years ago said 'I'm going to leave my picture and when they are rummaging around they'll find it!'"

"Christ left us his best picture because it shows how much He loves us by the bruises and scourges he suffered for us. When we look at a picture of the shroud we can comprehend to a small extent the ignominious brutality of crucifixion and gain some insight to man's inhumanity to man."

Alumnus Takes Part in Unusual Research

The Spires

A journal of information about Villanova University
for alumni, family and friends. February, 1979



Dr. Joseph M. Gambescia

"Sindonologist" is the latest title Dr. Joseph M. Gambescia of Philadelphia has added to his name.

The Villanova alumnus serves as director of medicine at St. Agnes Hospital, professor of medicine at Hahnemann Medical School, and personal physician to Cardinal Krol, Archbishop of Philadelphia. He is also a Knight of St. Gregory the Great, appointed by Pope Paul VI, and a husband and father of 16 children.

It has been a combination of faith and medical expertise that has lead him into research of a special nature.

In 1965, he assisted with medical tests on the body of St. John Neumann. But more recently, he served as a medical expert on the team of scientists examining the Holy Shroud of Turin, believed by some to be the burial cloth of Jesus. Here he became a sindonologist, one who studies shrouds.

For nearly a week this past October, he and the other scientists volunteered their time and services to travel to Turin and actually work with the sacred relic. It was the first time the Church had authorized such a complete examination of the shroud.

"I was examining it from a medical point of view. I guess you could say that 99.9 percent of the investigation was of a non-medical nature," says Dr. Gambescia.

While prohibited from commenting on certain conclusions of the team until a full report is issued, Dr. Gambescia did comment on some aspects of the shroud.

"I don't think there's any doubt in my mind that it's a genuine archaeological finding," he says.

"I like to call it the 'rosetta stone-cloth.' Just as the Greek linked the two languages on the stone, there are links in the cloth. As you understand the archaeological language, and the biblical language, you can see the spiritual language," he says.

"I don't think, in my own personal opinion, that the Church will ever come out and say that this is, in fact, the actual burial cloth of Jesus. But it's not important. You've got to appreciate that our faith does not depend on any cloth. Faith depends on a person," Dr. Gambescia clarifies.

Even though he finds a compelling story in the shroud, Dr. Gambescia had an unexpected reaction to the sight of the cloth.

"Well, it may sound peculiar to you, but I didn't feel much when I saw it. There certainly wasn't anything striking about it," he says.

Indeed, when viewed as it was for nearly 20 centuries, the shroud reveals nothing more than a faint reddish-brown stain on a tattered piece of ancient linen.

It wasn't until 1898, when the first photograph of the shroud was developed, that the world first realized it is much like a photographic negative, revealing a startling amount of detail.

gallery

The back of the crucified man shows scars where he had been scourged. So much detail can be observed, says Dr. Gambescia, that it is possible to determine that two soldiers administered the whipping, judging from the angle of the marks.

He also pointed out that the crucified man was nailed through the wrists instead of the palms. According to contemporary medical knowledge, says Dr. Gambescia, we know that a man's weight would not be held on a cross if the nails went through the palms.

He also said there is a collection of blood on the side of the man to indicate that he was stabbed, as was the historical Christ.

But what is most surprising about the burial shroud is that it lacks signs of decomposition.

"I can't think of anyone else who was crucified, crowned with thorns, pierced with a lance, scourged and then placed in a rich beautiful cloth. Not only is he in this cloth, but he doesn't stay there very long," Dr. Gambescia says.

Dr. Gambescia believes it is a strange twist of fate that the very sciences that say there is no God are called upon to verify this cloth's testimony to His existence.

"I personally think that God has a sense of humor and this is one of His jokes. He revealed the cloth to us at a time when we are prepared to deal with it."

It was perhaps another of God's plans that sent Dr. Gambescia on a two-year detour through Villanova. That detour brought him into closer contact with religion.

Born in St. Rita's parish, Dr. Gambescia attended South Philadelphia High School. After graduating from the Philadelphia College of Pharmacy and Science, he applied to medical schools. Even with a B.S. degree and a high academic average, he was denied admission because he lacked liberal arts credits.

It was thus that Dr. Gambescia arrived at Villanova and found himself attending religion classes.

"Let me say I wasn't thrilled to be in them," he laughs. "I had never been to Catholic schools, but I had a basic knowledge from Sunday school. I had been Zachaeus climbing the tree of Catholic doctrine.

"Classes at Villanova changed my way of thinking."

Dr. Gambescia credits Father Edward Grimes, and Father Francis X. McGuire
(continued on page 6)

The Spirés

Austin Hall
Villanova University
Villanova, Pa. 19085

Dr. Gambescia

cont. from pg. 1

as having a vital role in his religious experience. But of the two, the most influential was Father McGuire, past president of the university. "I love him like my father. He doesn't know me, he doesn't remember me, but that's not important."

Completing his credits in two calendar years, Dr. Gambescia went to Hahnemann Medical School where he received his degree. Along with his private practice, he began teaching there, and eventually he rose to the rank of full professor of medicine.

While at Hahnemann, Dr. Gambescia met "a fabulous girl from Conshohocken," his wife Mary Elizabeth. Together, they have raised a large and active family.

Dr. Gambescia's educational commitment ties in to his work at St. Agnes Hospital. Along with his administrative duties, he is in charge of the educational programs at the hospital for interns, residents, and student nurses.

He was also responsible for instituting a program of "principal medicine" at St. Agnes. This act led to his Papal knighthood.

"Principal medicine" is aimed at helping a patient at the onset of a disease. A Neighborhood Medi-Call van travels from St. Agnes into the community enabling professionals to help people deal with their health problems.

Long hours are part of Dr. Gambescia's life. In what spare time he can find, the doctor plans to lecture on the shroud and complete his report on shroud findings. After his scientific work is completed, he would also like to write a book on his reflections on the shroud.

With so many projects, patients and responsibilities to deal, Dr. Gambescia remains calm and smiling.

"After all," he says, "I need something to keep me off the streets."

A Mystery-Shrouded Image

An ancient piece of herringbone linen, resting in the Cathedral of Turin, Italy — for centuries an enigma — is now the subject of intense scientific scrutiny.

The cloth, the Holy Shroud of Turin, measuring 171 by 41-1/2 inches, displays the reddish-brown image of a bearded man with his hands folded. Marks on his hands and feet indicate crucifixion, and in his side, a gaping hole.

The image appears only on the surface of the cloth, but stains from blood visible on the cloth penetrate it.

Some believe this is the burial cloth of Jesus Christ.

It has been suggested that the cloth was once part of the Byzantine treasury of sacred relics in Turkey. It was perhaps brought to Europe by a plundering crusader.

The shroud was venerated in 1354, when Geoffrey of Charney gave it to the Church of Lirey in Troyes, France. Moved through Europe during the middle ages, the

cloth finally came to Turin in 1578, after surviving a fire in Sainte-Chapelle at Chambrey, France.

Although similar burial shrouds have been uncovered, all are smudged from decomposition. The Turin shroud is free from such marks, and is the only one on which appears a body imprint.

Many anatomical details were not clearly evident until the shroud was photographed and the negative viewed as a print.

Recent tests by Max Frei, a Swiss criminologist, reveal pollen fossils in the cloth which could have only come from plants grown in Palestine during the time of Christ.

Most of the curiosity about the shroud centers around the question of how the image was formed. Over the centuries, the shroud has been denounced as a painted forgery, but close examination reveals no traces of paint.

Four other theories, the contact stain theory, the vapograph theory, scorch or flash theory and the radiation theory are commonly discussed.

In the contact stain theory, it is believed that the embalming oils and spices smeared on the body came in contact with the cloth, forming an image. Experiments have produced stains this way, but there is much less detail and more distortion than in the image on the Turin shroud.

Ammonia gases or vapors leaving the body may have acted chemically with the cloth, according to the second theory. Images have been produced in this manner, but vapors don't move through space in a straight line, and do not leave a true image.

Those who have faith in the resurrection have suggested that at the moment of the event, there was an extraordinary burst of heat and light which burned an impression on the cloth.

Finally, it has been suggested that Jesus, because of his highly developed conscience and the stress of agony before his death, emitted an extraordinary amount of radiation which acted on the cloth in the manner of light on a photographic plate.

THE BEAUTY OF FAITH IN AN IMAGE

By Thomas J. DiSabatina

In a silver case, a linen cloth with a red-silk backing, lies over an altar in a specially constructed 17th Century baroque chapel. The cloth, described by one writer as "the proof for a demanding era," is the shroud of Turin.

The shroud is said to be the cloth garment in which Jesus Christ was buried after his crucifixion. The veneration of the relic is, by historians, to have been started in 1354, when Geoffrey I of Charney gave it to the church of Lirey in Troyes, France. In 1452, it was purchased by the Savoy dukes and is now the joint property of exiled King Umberto II of Italy and the Italian state. When matters concerning the shroud, as the recent examination of the cloth arise, the pope, the king, and the archbishop of Turin meet to decide what will be done, with the archbishop of Turin having the power of final decision.

The shroud is a piece of ancient, water-stained linen exactly 171 inches in length and 43½ inches in width. On the shroud could be seen the faint, reddish-brown imprint of a bearded man whose hands are folded across his naked loins. Ever since startling photos taken in 1898 by Secondo Pia, revealed that the cloth was really a negative yielding a highly-detailed positive portrait, science has entered the controversy surrounding the authenticity of the cloth. As the hypotheses mount to confirm or disaffirm the authenticity of

team of 33 scientists, who on October 9-12 investigated the shroud, first became involved with the mystery of the shroud in 1955.

"Fr. Otterbein (Adam J.) approached me to do some experiments to define the mode of death by crucifixion," Gambescia said.

On October 6, 1951, Francis Cardinal Spellman, then archbishop of New York officially decreed the creation of the Holy Shroud Guild at Esopus, New York with Father Otterbein as its director. The guild, which is now the official representative in the United States has the responsibility of promoting interest in the relic throughout the country. An example of the interest created by the shroud begins in 1952, when a Chicago TV station aired a shroud story on Good Friday. In 1974, that same show is estimated to have been viewed by 46 million viewers.

"It is more the curiosity of faith than anything else," one priest said. "It is an attraction to the Lord, rather than history."

The meaning of the shroud.

Although no miracles have been credited to the shroud, the pure fact that the cloth has withstood the elements of time

expressed confidence in the authenticity of the shroud. The First International Shroud Congress was held in Rome, in 1950. Pius XII "wished that the participants at the Congress contribute zealously to spreading the knowledge and veneration of so great and sacred a relic."

"The true impact of the shroud is how much Christ cares for us," Gambescia said. "It might be the impetus to convert those of wavering faith."

The real meaning of the shroud has been divided into two groups: religious and scientific. Through the entire periods of questioning the authenticity of the shroud, the faith by those who believe in the shroud has not been devalued, regardless of any scientific verdict.

"The real meaning of the shroud is to give us some insight to the meaning of crucifixion," Gambescia said. "Crucifixion reveals man's inhumanity to man."

How incredible crucifixion was is evident by the process of crucifixion. Eight-to-ten inch Roman nails were said to have been hammered through the hands and feet of the figure in the shroud.

The Second International

"The real meaning of the shroud is to give us some insight to the meaning of crucifixion. Crucifixion reveals man's inhumanity to man."

Dr. Gambescia

the shroud, the faith on its meaning remains unaffected.

"Faith doesn't depend on words or cloth," Dr. Joseph M. Gambescia.

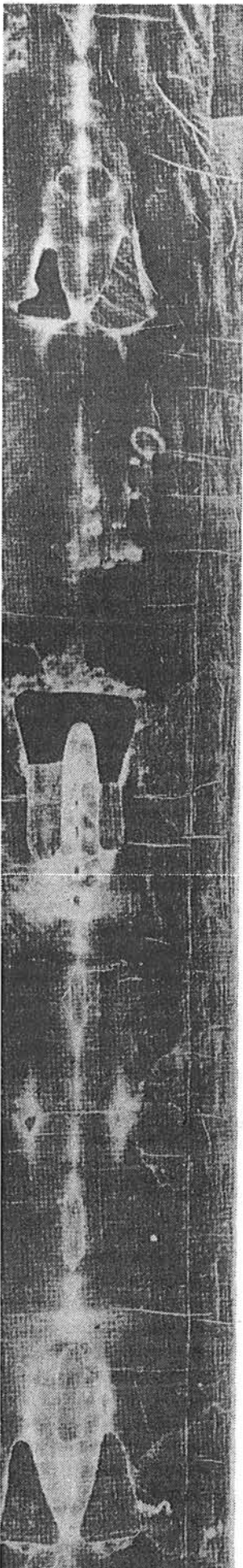
Gambescia, a sindonologist (Sindon is Greek for *shroud*), and Chairman of the Department of Medicine at St. Agnes Medical Center in Philadelphia, believes that the proof of the

is, for many, proof enough to substantiate their faith in the shroud.

The shroud was first displayed in 1898. Other viewings were held in 1931, 1933, and 1978. This past viewing marked the 40th anniversary of the shroud's arrival in Turin. An estimated 3 million persons are said to have seen the shroud during this last

Congress of Sindonology

Scientist of different religions conducted experiments of the shroud, this past year. On October 7-8 the Second International Congress of Sindonology, gathered to combine the results of their experiments. Gambescia estimates that the results of the tests "should take about one year."



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"Faith doesn't depend on words or cloth," Dr. Joseph M. Gambescia.

Gambescia, a sindonologist (Sindon is Greek for *shroud*), and Chairman of the Department of Medicine at St. Agnes Medical Center in Philadelphia, believes that the proof of the shroud authenticity will not mean a "blanket conversion" for the world.

"I don't think once you proved the shroud was the burial cloth of Christ that it will cause a sudden conversion of the entire world," Gambescia explained.

The shroud of Turin is said to have been brought to Europe by the Crusaders in the Middle Ages. According to the Gospel's of Mark and John, there was mention of a linen sheet in the crucifixion and resurrection. The Confraternity of the Holy Shroud in Turin says that earlier records the shroud's existence can be traced to Constantinople, as well as the accounts of John and Mark.

Became Involved

Dr. Gambescia, a member of the international investigating

is, for many, proof enough to substantiate their faith in the shroud.

The shroud was first displayed in 1898. Other viewings were held in 1931, 1933, and 1978. This past viewing marked the 40th anniversary of the shroud's arrival in Turin. An estimated 3 million persons are said to have seen the shroud during this last viewing.

"The reason that the shroud is not displayed more is because constant exposure might destroy the cloth," Gambescia said.

The shroud has been proclaimed by Pope Paul VI "as the most important relic in the history of Christianity". Many theologians see the shroud as physical proof of Christ's existence.

"Faith is not in the shroud," Gambescia said. "You have faith in God. Your faith is in a person."

Between Gregory XIII and Paul VI, 19 other popes have

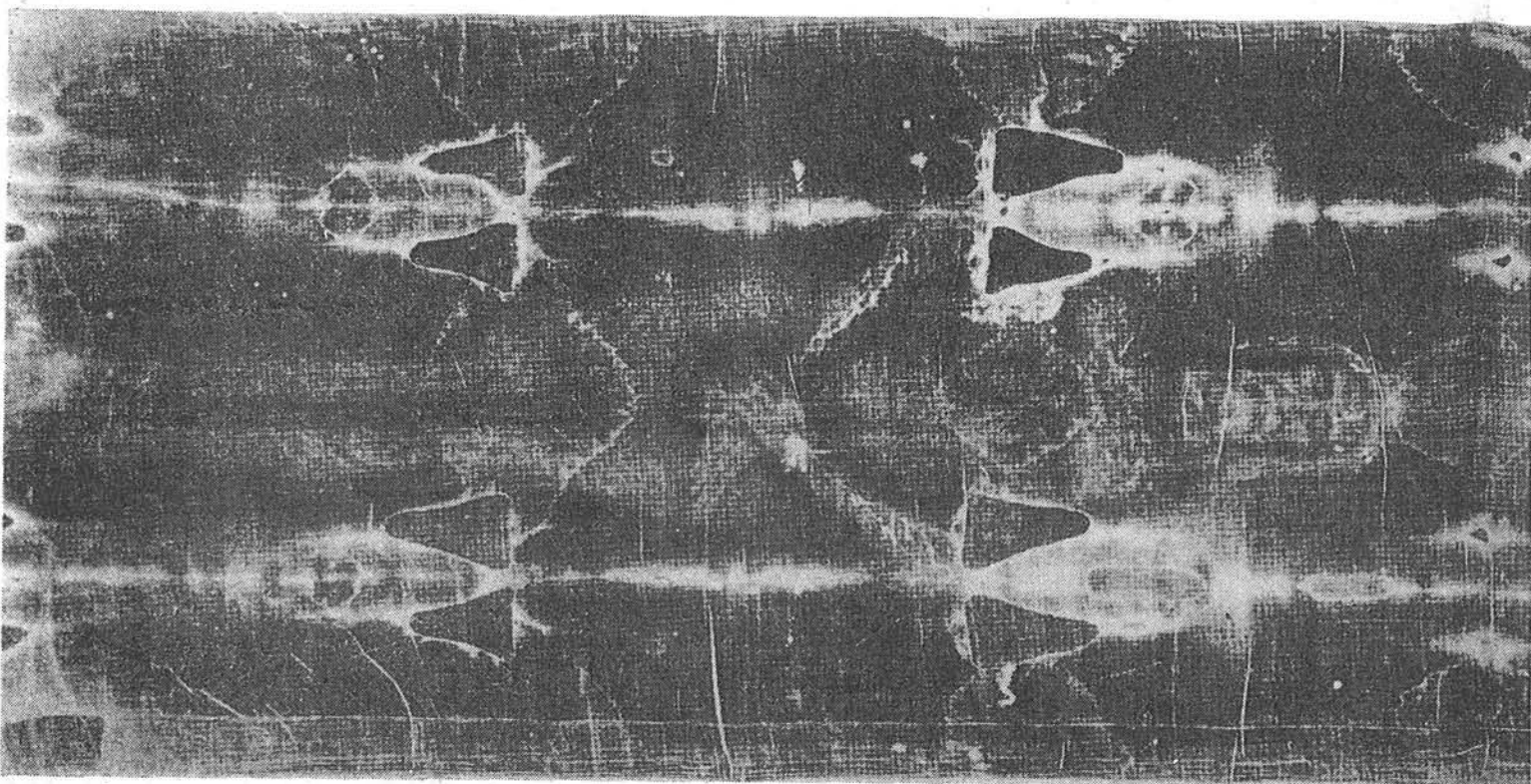
Congress of Sindonology
Scientist of different religions conducted experiments of the shroud, this past year. On October 7-8 the Second International Congress of Sindonology, gathered to combine the results of their experiments. Gambescia estimates that the results of the tests "should take about one year."

"The thrust of the conference was to focus on what was pertinent and the new methods of experiments."

The problem in examining the cloth is its delicate nature. Although the shroud has withstood two fires, conditions and accuracy must be precise. **"One method that was ruled out was the Carbon 14 method," Gambescia said.**

He explained that the Carbon 14 method would use too much of the cloth.

"We have several new methods that require a minimal amount
(Continued on page 6)



Picture to the left—The image of the figure as it appears on the negative of the shroud.



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Grand Chaplain's Corner

By Msgr. Arthur P. Di Giacomo



"CHRIST" AND THE "MASS" IN "CHRISTMAS"

Once again we celebrate the beautiful feast of Christmas—the coming of Christ the Saviour, to save the world.

The word "Christmas" is beautiful and nostalgic, a reminder of the days when this glorious feast was celebrated primarily by celebrating and hearing the Mass of Christ. For the word "Christmas" means Christ's Mass.

A cynical, embittered, faithless group attempted over the years to take the "Mass" out of "Christmas". And they brought upon the world logical and horrible consequences—atheism, hatred, greed, materialism, and pagan totalitarian ideologies. Now they are attempting to take Christ Himself out of Christmas; to make that day a completely materialistic one.

We Catholics who have kept the "Mass" in "Christmas" are strongly determined to keep "Christ" in "Christmas". We still remember the crowded inn, the poverty of Mary and Joseph, the birth of the Redeemer in a manger in the stable. We still remember the angels that swarmed in the heavens in a riot of joy and praise. And on Christmas Day when the Mass of Christ is celebrated we know that the same Christ in the Manger is on the altar and swarms of angels are joining the voices of our earthly choirs. Rich and poor; white, black, brown or yellow folks; learned and illiterate throughout the world kneel before the same Christ Child. And all of them have a deeper understanding of their brotherhood and the love of Christ that enfolds them. And they are all beautifully and spiritually rich in the eyes of the Babe of Bethlehem.

As for those who hate God, who scorn religion, those who celebrate the day without the Mass or without Christ we wonder if the tinsel on their trees has not lost its glitter if their gifts have not lost their love. And at the close of Christmas day, heavy with the stupor of food and drink, we wonder if perhaps a small creeping voice whispers in their ears; "You have thrown 'Christ' out of 'Christmas' and the 'Mass' out of 'Christmas'." You have

THE BEAUTY OF FAITH IN AN IMAGE

(Continued from page 3)

of material, but we must first see if they are reliable," Gambescia added.

The amount of material to be used in Carbon 14 testing is not the only barrier for implementing this approach. According to one sindonologist

"the tests can only give you a date that is accurate plus or minus."

Then what is carbon 14 good for?

"The method is good for objects that have been protected in the earth or in caves."

One of the greatest accomplishments of Carbon 14 method in recent years happened to Yale University. Yale University purchase a map, called the Vinland Map, which was said to be the map that gave proof that the Vikings and Leif Erikson discovered America before Columbus. The cost of the map for Yale was tens of thousands of dollars and considerable "egg on the face". The map proved to be a fake. The map was etched with a pigment that was not invented until the 20th century. The case for the shroud has scientific evidence on the side of its authenticity.

"Purely for scientific evidence there is no problem," Gambescia said. "But we have to rely also on circumstantial evidence."

Gambescia believes that "the evidence is overwhelming, that the only personality in history that we know to have been

theory concludes that "images of a sort can be produced with this method, but vapors don't move through space in a straight line and do not leave a true image."

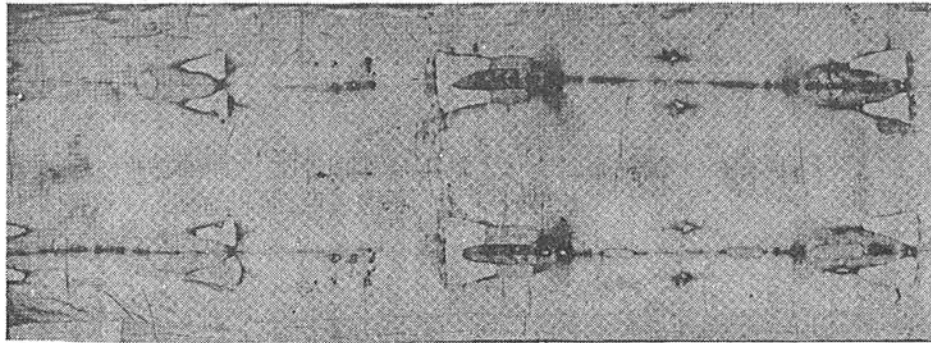
* Scorch or Flash-of-Heat-and-Light Theory-Contents that at the moment of the miraculous event, an extraordinary burst of heat or light was generated which burned an impression on the cloth.

* Radiation Theory-Was Jesus's consciousness so highly developed that the stress of his agony before death, emitted an extraordinary amount of radiation? If one subscribes to this theory, then the radiation acted on the cloth in a manner similar to the way light acts on a photographic plate.

A different approach to the authenticity of shroud was used by Max Frei, a Swiss criminologist. Frei announced in 1976, that the shroud seems to be the type that appeared in Palestine, which would make the shroud 2,000 years old. Frei came to his conclusions by a series of pollen tests. By taking pollen and dust from the threads of the shroud, Frei determined the period of history for the cloth.

"Pollen is like fingerprints," Gambescia said. "There are different configurations to each one."

The Impact of the Shroud. The Catholic Church has been criticized for its secrecy surrounding the mystery of the



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And they are all beautifully and
be of Bethlehem.

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you mut stand before your God
pe and pray they will harken to

Christmas is a spiritual feast to
rist, you, who on this great day
e Christ in the Mass and receive
I say, rejoice, for Christ is born
then shall have meaning, your
day, surrounded by your loved
appiness and peace which this

the side of its authenticity.

"Purely for scientific evidence
there is no problem," Gam-
bescia said. "But we have to rely
also. on circumstantial
evidence."

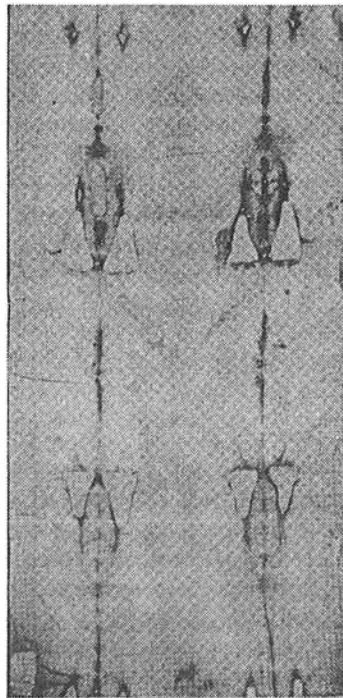
Gambescia believes that "the
evidence is overwhelming, that
the only personality in history
that we know to have been
crucified with thorns and a
lance."

With the uncertainty on the
Carbon 14 method, other tests
have been conducted ranging
from X-ray fluorescence in-
spection to "celluloid tape tests"
in which a strip of tape that is
magnetized was pressed on the
surface of the shroud and lifted
off for examination.

The wait.

Believers in the shroud talk in
astronomical figures of its
authenticity. Figures as "a
billion to one" on its realness are
a calling card of certainty.
Those who challenge the shroud
ask the question, "that if the
shroud is authentic, then why
was it not discovered until 13
centuries or later, after the death
of Christ?"

"The early Christians knew
what it meant to be crucified,"
Gambescia said. "It was a very
ignominious way to die. They
tried to downplay crucifixion.



The Positive image of the
Shroud's frontal and rear.

Lynn's opinion stems from
being part of scientific team
named to investigate the relic.
The team includes several U.S.
scientists from the Jet
Propulsion Laboratory at
Pasadena, Calif. The team has
already visited Turin, taking
photos of various parts of the
shroud. The photos were then
subjected to a computer en-
hancement along with color-
spectrum experiments.

Robert K. Wilcox, in his book
SHROUD, that from the
examination of the shroud, the
following theories have been by
developed. How accurate these
theories are, have yet to be
determined.

* **Contact Stain Theory-**
Embalming oils and spices
smeared on the body came in
contact with the cloth, leaving
an image.

* **Vapograph Theory-**
Ammonia gases or other vapors
leaving the body acted
chemically on the cloth. This

the period of history for the
cloth.

"Pollen is like fingerprints,"
Gambescia said. "There ar dif-
ferent configuration to each
one."

The Impact of the Shroud.

The Catholic Church has been
criticized for its secrecy
surrounding the mystery of the
shroud, in fact, some persons say
that the Catholic Church is
making the shroud more of a
mystery by not directly coming
forth with an answer on the
shroud's authenticity.

"The shroud will be a con-
troversial object regardless, of
what the outcome is," Father
Alvin Manni, pastor of Corpus
Christi parish, in Port Chester
New York, said.

The parish of Corpus Christi
has the distinction of being the
first church to create a shrine to
the devotion of the shroud. A
reproduction of the shroud
along with the other material
pertaining to the shroud, are
in the church. The shrine is
located on the side of the
church.

"The catholic faith is not
based in the shroud but in the
resurrection of Christ," Manni
said. "The tremendous interest
in the shroud will help those who
are weak in faith."

And science?

"The overwhelming weight of
scientific evidence are for the
authenticity of the shroud,"
Manni said. "Few arguments
can stand up against the
authenticity of the shroud."

"Science will help you to
identify the cloth, but science
will never bridge the gap that
will lead us into the realm of
faith."

What are the answers?

As the evidence is prepared
for and against the shroud's
authenticity, it still remains the
most revered relic by those who
are spiritually strengthened by its
presence.

However, as each theory of the

(Continued on page 7)

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THE BEAUTY OF FAITH IN AN IMAGE

(Continued from page 6)

shroud is presented, the chances on its authenticity increases. Consider the following questions:

* Could there have been a crucifixion identical to that of Jesus Christ, as explained in the New Testament.

* Why has there not been a shroud, that in all of history, has left a body imprint, so distinct as

the shroud of Turin?

* Why is it that the shroud of Turin shows no signs of a decomposed body?

* Why did a positive image appear on a negative image?

Are the above questions for only religion and our faith to

answer?

"Science is in a field where it does not belong," said one man

as he departed Sunday mass. "Faith is not arbitrary. The shroud of Turin is not a trade-off between science and religion.

What we believe, is what we will always believe, and no scientific evidence will prove different."

This is the beauty of faith in an image.

Season's Greetings

FROM

THE MEMBERS AND

ADMINISTRATIVE COUNCIL

OF THE

Columbus Forum Lodge No. 1492

ROCCO GIGANTE, JR.
Venerable



*A Joyous Christmas
and a
Happy New Year
to all*

from
the Editor
and
Staff of the
Sons of Italy
TIMES

ORDER SONS OF ITALY IN AMERICA GRAND LODGE OF PENNSYLVANIA NECROLOGY FOR NOVEMBER

LODGE NO.	NAME	LODGE NO.	NAME
164	CAPUTO, EUGENE A.	875	INFANTE, DOMENIC
205	PREZIO, JOSEPH	941	BRONZO, JOSEPHINE
229	GRECO, CARMINE	1049	SANDONATO, MICHAEL
251	D'ALESSANDRO,	1171	PEZZONE, MARIA
NICHOLAS		1171	CERIMELE, SUNDRINA
265	LONGO, ROSE B.	1415	KIMMEL, VIRGINIA
286	D'AMORE, NICOLA	1496	MINGOIA, MICHELA
369	FUSCO, GAETANO	1516	VINZANI, CONCETTA
412	AMATUCCI, LAZZARO	(JENNIE)	
486	FORLINO, FRANCESCO	1528	FALBO, MARGARET
608	CANCELLIERI, JOHN O.	1528	MERLINO, OLIMPIO
612	CAPPELLI, NUNZIATA	1578	MARIANI, GIUSEPPINA
620	GATTI, MARIA	1578	PETRINO, MARIANNA
620	D'EMILIO, ISRAELE	1614	NOVELLO, SAM
652	LANDOLFI, STEFANO	1699	BOSETTI, MARIA
664	TARALLI, LUCCO (ROCCO)	1806	FILARDI, JOSEPHINE
664	STRENGARI, LUIGI	1876	CIANFRANI, HENRY
687	LONDRILLO, MARIA	1883	COSENTINO, ROSE
GRAZIA		1892	MATARESE, PAULINE
730	VIDALE, WILLIAM B.	2047	KYLE, IDA CUOIO
807	CONTI, MARYBELL	2078	BERARDI, AMEDEO
815	COCCIA, SILVESTRO	2078	IEZZI, ERCOLINO
850	CHIANESE, LOUISE	2085	MARINO, ANTHONY

Aftermath

(Continued from page 4)

The little ones find cardboard boxes more pleasant. But as we pick-up the papers, And take down the lights, We know we'll remember those holiday nights. For the joys and the laughter we always hold dear.

Shroud 'is the real thing'

PHILADELPHIA (NC)

"I'm convinced it's the actual shroud," said Dr. Joseph Gambesca, director of medicine at

Pope looks for justice

VATICAN CITY (NC)

Man is not at the service of social, economic, political and cultural systems, rather the systems "must be for man," Pope John Paul II said at his general audience Wednesday.

"It is necessary to defend against the rigidity of the system," the Pope said. "I am thinking of social, economic, political and cultural systems which must be sensitive to man" and capable of reforming themselves to serve man, he added.

"It is from this viewpoint that we must evaluate the great effort of our times to define and consolidate the rights of man."

Papal encyclicals and the teachings of Vatican II were evidence of the continual dialogue of the church with the world on this subject, the Pope said.

Justice is a fundamental principle of the existence of human society and is a fundamental principle of the church's existence, he asserted.

The purpose of justice is to define what is due each man by other individuals and by society and what each man owes to society and to other people, said the Pontiff.

Before the audience, the Pope received in St. Peter's Basilica more than 10,000 Italian children and young people, who greeted him with wild enthusiasm. He took 20 minutes to walk down the central aisle as he stopped to shake hands or exchange words with those in the crowd.

St. Agnes Hospital, Philadelphia, referring to his recent 96 hours of intensive study of the Holy Shroud of Turin.

The shroud is traditionally held to be the burial cloth of Jesus Christ.

"I don't think there's any doubt," said the physician, who is also a professor of medicine at Hahnemann Hospital. "I don't know if there's any one thing that makes me believe it's the shroud. It's the convergence of many things."

He continued: "I can't think of anyone who was crucified, crowned with thorns, pierced with a lance, scourged and then placed in a beautiful rich cloth. Not only is he in a rich cloth, but he doesn't stay there very long. There are no signs of decomposition of the body."

The doctor, a native of Philadelphia, became involved with

the Holy Shroud of Turin in 1955, "trying to explore some of the things that raised questions."

In 1968, he went on, a meeting was held in New York "to crystallize some of the ideas that developed."

The National Aeronautics and Space Administration "became interested, and we were able to have available some of the more sophisticated instruments."

At the October study session, scientists worked in shifts, the doctor recalled, using X-rays, ultraviolet light and microwaves.

"I thought it was a fantastic privilege," said Dr. Gambesca. "I like to call it the 'Rosetta stone cloth.' The Rosetta stone had three languages. The Greek linked them. You can almost see the three languages on the shroud. "You can see the archaeolo-

gical language. You can also see the authenticity of the gospel, because you can see that what was described was true. The third language is the spiritual language. Seeing what happened when someone was crucified, you can really see what Christ went through for us."

Dr. Gambesca also assisted on medical tests performed on the body of Bishop John Neumann in 1965 when the bishop was being considered for canonization.

"The task was to identify the body of Bishop Neumann.

"After I did that, I became very interested in the life of Bishop Neumann. I don't think the state of the body really determines sainthood," he said, commenting on the body's extensive decomposition. "A saint becomes a saint because of how he lives."

The Catholic Witness

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November 10, 1978



Profile

Philadelphia Doctor Studied Turin Shroud

By **BOB KOENIG**

"I'm convinced it's the actual shroud.

That was the opinion of Joseph M. Gambescia, M.D., director of medicine at St. Agnes Hospital, who recently took part in 96 hours of intensive study of the Holy Shroud in Turin, Italy, believed by many for centuries to be the burial cloth of Jesus Christ.

"I don't think there's any doubt," said Dr. Gambescia, who is also a professor of medicine at Hahnemann Hospital. "I don't know if there's any one thing that makes me believe it's the shroud. It's the convergence of many things.

"I can say this, I can't think of anyone who was crucified, crowned with thorns, pierced with a lance, scourged and then placed in a beautiful rich cloth. Not only is he in a rich cloth but he doesn't stay there very long. There are no signs of decomposition of the body," said Dr. Gambescia who will lecture on the shroud at St. Matthias, Bala Cynwyd, the first Wednesday in January.

Dr. Gambescia, who was born in St. Rita's parish, attended South Philadelphia High School, The Philadelphia College of Pharmacy and Villanova University before receiving his medical degree from Hahnemann. There he met his wife, a nurse, Mary Elizabeth ("A fantastic girl. I couldn't have done anything without her."). Today, residing in St. Matthias parish, Bala Cynwyd, they have 16 children "Sundays are amazing!"), who range in age from 13 to 33.

The St. Agnes director came to that hospital as Chief of Gastroenterology in 1954. He was appointed Knight of St.



DR. JOSEPH M. GAMBESCIA

Gregory the Great by Pope Paul VI in 1976 due to his work with the community on a project of which he is particularly proud — Neighbor Medi-Call Van of St. Agnes Hospital, a mobile medical testing unit. He is also Cardinal Krol's personal physician.

His expertise also aided the Church when he was asked by Cardinal Krol to assist in medical tests being done in 1965 on the body of Bishop John Neumann.

"The task was to identify the body," Dr. Gambescia remembered, "to describe it and to be certain that it was the body of Bishop Neumann."

"After I did that, I became very interested in the life of Bishop Neumann. I don't think the state of the body really determines sainthood," Dr. Gambescia commented on the body's extensive decomposition. "A saint becomes a saint because of how he lives, not how he dies."

Dr. Gambescia's intense religious interest has surfaced in many of his projects. It is not something that has always been there.

"I had an excellent foundation in religion from my mother," said Dr. Gambescia, "but by the time I went to Villanova, religion wasn't something that turned me on. Religion class there, though, really turned me around."

"I appreciated that I had really missed something. I was kind of like Zachaeus. I climbed the tree of Catholic doctrine," the physician said.

Dr. Gambescia first became involved with the Holy Shroud of Turin in 1955.

"Father Adam Otterbein, a Redemptorist, was interested in conducting certain experiments on the shroud, trying to explore some of the things that raised questions," Dr. Gambescia said.

"The shroud authentically goes back to the mid-1300's but I think it goes back to the year 33 A.D. (the approximate year of the death of Christ)."

"In 1968, the first embryonic meeting was held, in New York, to crystallize some of the ideas that developed," he said. "NASA became interested and we were able to have available some of the more sophisticated instruments."

The scientists worked in shifts, the doctor recalled, using X-rays, ultra-violet light and microwave study on the shroud.

"I thought it was a fantastic privilege" said Dr. Gambescia. "I like to call it the 'rosetta stone cloth'. The rosetta stone had three languages. The Greek linked them. You can almost see the three languages on the shroud."

"You can see the archeological language. You can also see the authenticity of the Gospel, because you can see that what was described was true. The third language is the spiritual language. Seeing what happened when someone was crucified, you can really see what Christ went through for us."



DR. JOSEPH M. GAMBESCIA

Phila. Doctor Describes Tests on Shroud in Turin

By PAULA HERBUT
Of The Bulletin Staff

"I think that God is a very personal person. I think He thinks of a lot of personal things," said Dr. Joseph M. Gambescia.

"I wouldn't be a bit surprised that He had this all planned," he said. "Photographs are very important to people. When you give someone a picture of yourself, you're really giving a part of yourself."

The picture Dr. Gambescia was speaking of is the image of a man on the Shroud of Turin.

The doctor, a 59-year-old Roman Catholic from Bala Cynwyd, is one of the members of the international investigating team of scientists who on Oct. 9-12 investigated the shroud, believed by many Catholics to be the burial cloth of Jesus Christ, in Turin, Italy.

Dr. Gambescia, who has 16 children, was interviewed in his office at St. Agnes Hospital, Broad and Mifflin sts. in South Philadelphia, where he is chairman of the department of medicine. He spoke of the investigation of the shroud and of his past decade on the executive committee of the Holy Shroud Guild in the United States. The guild, developed to promote belief in the shroud, has both European and U.S. organizations.

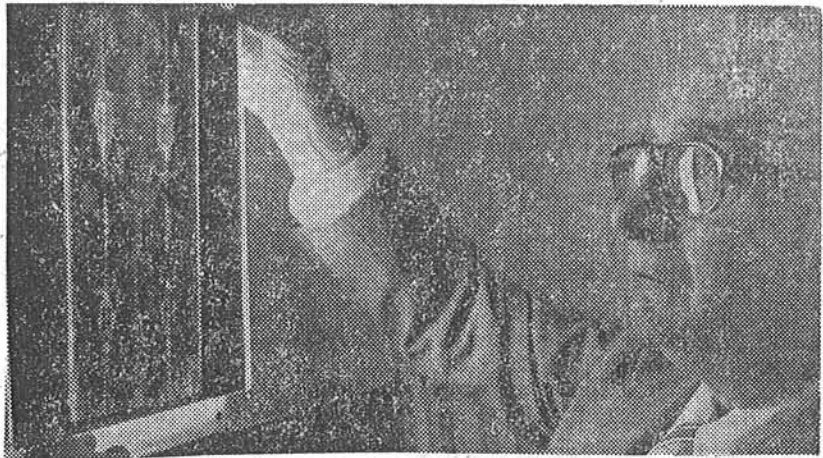
On his office wall is a crucifix and a picture of the shroud and the image on it.

Results Not Yet Known

It will take about a year for the investigating groups of the team, which included Protestants, Catholics and Jews, to conclude their experiments and meet again to share results, Dr. Gambescia said.

"We can appreciate from looking at the markings" on the image, he said of preliminary observations, "that whoever it was, was definitely dead and that he didn't stay there long enough for decomposition."

"The hypothesis is that whatever caused the image was some kind of radiant energy," he said. "We know it wasn't painted on. We can assume a so-called scorch theory — some kind of energy that caused it. One of the possibilities is the Resurrection. If you



Bulletin Photo by Joseph P. McLaughlin

Dr. Joseph M. Gambescia examines film in his St. Agnes Hospital office showing pictures of the Shroud of Turin.

Religion

go back to Scripture, remember this passage in Scripture when Christ was transfigured, there was a certain aura."

"Faith doesn't depend on words or cloth," he said. "I don't think once you prove it (was the burial cloth of Christ) all of a sudden you're going to have conversion of the entire world."

But of those wavering in belief, he said, if no reason for the image appearing on the cloth other than the belief of Resurrection is found, "it could easily be the thing that turns it around for them."

One of his own conclusions from examining the image and pictures of it is that the man was nailed to the cross with four nails — two of them through the feet, he said.

Another is that he died from "probably a combination of loss of blood and respiratory distress on top of that," he said.

With the Shroud of Turin, he said, "you have an archeological specimen which to my mind is authentic of a man who was crucified, crowned by thorns, and a lance. The evidence here is overwhelming — the only personality in history that we know (experienced this) would be Jesus Christ."

"The face of the man — there's a certain majesty and serenity — you

might expect it if it were the son of God," he said.

Variety of Tests

Among the tests conducted by the scientific team are X-ray fluorescence inspection, spectroscopy, computer enhanced photographic analysis, mosaic photography and ultra-violet light examination. Another is "celluloid tape tests" in which a strip of magnetized tape was pressed on the surface of the shroud and lifted off for examination.

The gray linen shroud is 14 feet, three inches long by three feet, seven inches wide and bears the negative image of a bearded man who apparently had been crucified, whipped, stabbed in the side and crowned with thorns. The hope of the scientists is to determine the molecular breakdown of the image and what formed it.

A Swiss criminologist, Max Frel, announced in 1976 that, based on identification of 49 species of plant pollen on the shroud, the shroud appeared to be about 2,000 years old and had once been in ancient Palestine.

Scientists have ruled out the possibility that the image was painted on, partly because there are no brush strokes.

The image could not have been produced by some sort of photography, Dr. Gambescia said. Photography was not discovered until the 19th century, he pointed out.