

# THE JOURNAL OF DERMATOLOGIC SURGERY AND ONCOLOGY

## CONTENTS: VOL. 5, NO. 11, NOVEMBER 1979

---

829 Editorial Blues XX

847 Guest Editor: A Note

*Norman Goldstein, M.D., F.A.C.P.*

---

### FEATURES

838 Tumor Conference #26: A Bulky Basal-Cell Carcinoma of the Lower Eyelid

*Robert S. Bart, M.D., and Alfred W. Kopf, M.D.*

844 Surgical Gems: Even Coaptation of Wound Edges of Unequal Thicknesses or Unequal Heights

*June K. Robinson, M.D.*

917 Stamps Commemorating Medicine: "Walt Whitman. Poet, Philosopher, Male Nurse"

*Joseph Agris, M.D., D.D.S.*

---

### ARTICLES

848 Editorial Note to This Special Issue on Tattoos

*Norman Goldstein, M.D., F.A.C.P.*

851 II. A Short History of Tattooing

*Jerome Levy, M.D., Margaret Sewell, and Norman Goldstein, M.D., F.A.C.P.*

857 III. Tattoos in Different Cultures

*Norman Goldstein, M.D., F.A.C.P., and Margaret Sewell*

869 IV. Complications from Tattoos

*Norman Goldstein, M.D., F.A.C.P.*

883 V. Psychological Implications of Tattoos

*Norman Goldstein, M.D., F.A.C.P.*

889 VI. Modern Applications of Tattoos

*Norman Goldstein, M.D., F.A.C.P., George H. Muller, D.V.M., and Lyle Tuttle*

(Continued)

**896 VII. Histologic Reactions in Tattoos**

*Alan P. Goldstein, M.D.*

**901 VIII. Techniques of Removal of Tattoos**

*Norman Goldstein, M.D., F.A.C.P., James Penoff, M.D., Norman Price, M.B., Ch.B., Roger I. Ceilley, M.D., Leon Goldman, M.D., Victor Hay-Roe, M.D., and Timothy A. Miller, M.D.*

**911 IX. Suits for Malpractice Based on Alleged Unsightly Scars Resulting from Removal of Tattoos**

*Murray C. Zimmerman, M.D.*

**913 X. Laws and Regulations Relating to Tattoos**

*Norman Goldstein, M.D., F.A.C.P.*

**916 Acknowledgment**

*Norman Goldstein, M.D., F.A.C.P.*

---

**DEPARTMENTS**

**831 Capital Letters: "Still More Pain in the Nucha," "Is There Hope?," and "On the Beauty of Words and Words of Beauty"**

**842 Stump the Experts**

**919 Professional Meetings**

Meetings, seminars, workshops and symposia at home and abroad

**924 Services and Teaching Aids**

Teaching aids, educational material, and films available to our readers

**926 Advertisers' Index**

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# The Journal of Dermatologic Surgery and Oncology

Special Issue: Tattoos

Guest Editor  
Norman Goldstein, M.D.  
Honolulu



## Guest Editor: A Note

### Norman Goldstein, M.D., F.A.C.P.



A RESIDENT of Hawaii since 1964, Dr. Norman Goldstein is Associate Clinical Professor of Dermatology at the University of Hawaii School of Medicine and is in private practice in Honolulu.

A native of New York City, our Guest Editor completed undergraduate studies at Columbia College and received a medical degree from the S.U.N.Y., Downstate Medical Center in 1959. His residency was spent at the Skin and Cancer Unit of N.Y.U. Postgraduate Hospital, at Bellevue Hospital, and at N.Y.U. Postgraduate Medical Center.

In 1964, Dr. Goldstein, while in military service, was stationed at the U.S. Army Tripler General Hospital in Honolulu and became Chief of the Dermatology Service in 1966. There, over a period of seven years, he conducted important clinical investigations on topical sunscreen agents, and received a Silver Award of the A.A.D. in 1972 for original research into the prevention of skin cancers. He went on to become Chief of Dermatology of the Honolulu Medical Group and Director of the Group's Research and Education Foundation Laboratory. Currently, he is a trustee and serves on the Board of Directors of the Foundation.

Always on the lookout for new and promising agents for diagnosis, treatment, and prevention of cancer of the skin, Dr. Goldstein helped introduce cryosurgery to dermatologists in Hawaii. Also, as Director of the Photobiology Research Laboratory (1972-1978), he applied his interest in photography to developing and publishing new photographic techniques for early detection of skin cancers.

The dissemination of information to medical colleagues has been a major concern of Dr. Goldstein's as is evidenced by his numerous publications and by his conception, development, and use of audiovisual presentations, in particular. The most notable of these is an award-winning and provocative scientific exhibit, "The World of Tattoos," which was cited as the outstanding scientific exhibit by the California Medical Association in March, 1979.

Dr. Goldstein has also fostered medical education of the lay public and has recently written a book entitled "The Skin You Live In" (Hart Publishing, 1978).

Finally, this special issue is a culmination to this day of Dr. Goldstein's professional activities. We thank him for his contribution.

## Editorial Note

### To This Special Issue on Tattoos

THE SUBJECT of tattoos has interest for all students of the human condition. Anthropologists, sociologists, and physicians are particularly interested professionally, the first because whatever man has ever done excites their curiosity, the second because the practice of tattooing has social and ethologic implications, and the third because they have to deal with complications and removal of tattoos.

In the material that follows, several aspects of the subject of tattooing are explored briefly and illustrated to a considerable degree. In this place it has not been possible to treat the subject as exhaustively as it deserves. Nevertheless, each section and its accompanying illustrations is an earnest of what could be written and illustrated if the subject were to be treated in depth. In the near future it is hoped that it will be treated in proper depth, illustrated more extensively, and presented in book form and length.

In developing this material for the exhibit that was first presented at the annual meeting of the American Academy of Dermatology in 1978 and since has been touring or is booked for tour in Japan, Canada, England, and other places in the United States, nearly two hundred individuals have contributed. It is not possible to thank them properly by merely listing their names. Their assistance was invaluable. In this issue, the names of some contributors appear on material they wrote or illustrations they provided, but they are a minority of the many who contributed as much. I have also to thank the editorial staff of the *Journal of Dermatologic Surgery and Oncology* for assembling and publishing the material as it herein appears.

—Norman Goldstein, M.D.



## II. A Short History of Tattooing

JEROME LEVY, M.D., MARGARET SEWELL, AND NORMAN GOLDSTEIN, M.D., F.A.C.P.

MOST PEOPLE know little and care less about tattooing. They have a notion that it is "only sailor stuff," indulged in by bored, lonely men, mostly young men, in faraway seaports when they have no wine and women, or have had enough and have nothing better on which to spend their pay. That is a false idea. Tattooing has been practiced in many ways and for many reasons all over the world from time immemorial. It has a long and, for the most part, an honorable history dating from the dim past to the vivid present. According to Hanns Ebensten who wrote a history of tattooing, "body marking presents an almost complete history of ritual, taboo, and belief."<sup>1</sup> The earliest form of body marking was merely by painting the surface of the skin. Then it became desirable to make colors permanent in the skin, and the problem of doing that was solved in two ways, namely, 1) by puncturing the skin with some sort of needle device dipped in pigments, or 2) by making scratches in the skin (as in modern vaccination technique) and then putting colors into the scratches. Both superficial body painting and permanent coloring of the skin by pigments punctured or scratched into the skin are termed *tattooing*. The word *tattooing* is derived from a Polynesian word (*tatau*) of the same meaning.

There is evidence to prove that the practice of tattooing dates to at least 8,000 years ago. In caves and rock strata in France, Portugal, Romania, and Scandinavia, crude needles made of bone and bowls that held pigment have been found. Ancient statues have been found that show crude tattoos on figures of human beings. We can only conjecture that these tattoos represent symbols of tribal status or have some other significance, possibly mystical.

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In Egypt, shriveled skin of some 4,000-year-old mummies bear tattoos. Giacometti and Chiarelli found no tattoos on two pre-dynastic Egyptian mummies 2,000 years older than those.<sup>2</sup> In ancient Egypt, tattoos were placed on dancing girls, concubines, and woman singers, and bore the symbol of Bes, the goddess who protected such women. There is no evidence of tattoos on Egyptian men of the same period.

In nearby Libya, however, bodies of men have been found that have symbols of sun worship tattooed on their skins. According to Ebensten, "In the tomb of Seti I, 1300 B.C., symbols of the goddess Neith were found on tattooed bodies of Libyan men."<sup>1</sup>

In early Greece, men were tattooed as signs of nobility or proof of bravery (Fig. 1), but when that custom declined, tattooing was done only to identify slaves and criminals.

There is no evidence of tattooing among Hebrews, even before the Mosaic Law, which specifically forbade it.



FIGURE 1. An ancient Greek urn depicting a warrior with tattooed arms. (From the collection of H. Beerman, M.D.)

From the ancient Middle East, the practice of tattooing spread far and wide. By 2,000 B.C. it had reached Burma, India, and the South Pacific Islands. There is a legend that it was brought to the islands of the South Pacific by the Goddess of Tattooing who sang of the virtues of tattooing as she swam from Fiji. The theme of her song was that it was proper that women be tattooed, but not men. Somehow the message became confused and it came about that men were tattooed instead of women. A more credible explanation of the spread of tattooing to the South Seas is that it came from China via Formosa, the Philippines, and the East Indies. Another credible explanation is that it came later, about 450 B.C., from the Semites of Arabia who practiced tattooing. A third possibility is that practitioners of tattooing from South America brought the practice with them if it is true that they sailed the "Kon-Tiki" route to Polynesia and New Zealand. It is known that the Incas, the Mayas, and the Aztecs were tattooing themselves on the American continent long before the Christian era. Post, Daniels and Armelagos described mummified skin and published photographs of two tattooed hands, one from Ancon, Peru (A.D. 900-1450) and the other (date unknown) from elsewhere on the coast (Figs. 2A and 2B). Figure 3 shows a tattooed forearm of a man from ancient Nubia (A.D. 250-450)<sup>4</sup>. They also reviewed the histology of mummy skin and could identify black tattoo pigment, presumed to be carbon, and melanin, keratin, and acid mucopolysaccharides.

When the practice of tattooing was brought to New Zealand, a special type of tattoo pattern called Moko was developed by the natives. This consisted of patterns of spirals and gracefully flowing lines tattooed on the face, buttocks, and other parts of the body that could take them. Men who bore the Moko tattoos on their faces began the custom of shaving with sharpened mussel shells so that the patterns and spirals could be more easily seen on smooth skin. Not only were the faces of men in the Maori tribes adorned, but women had tattoos on their lips and sometimes on their chins to identify them as married women. A noted artist from New Zealand, Kristin Zambucka, collected many of these classic Moko designs.<sup>5</sup> Figure 4 is a drawing by RAMSAY, a renowned pen-and-ink artist, of a Moko design on a shrunken head. The use of Moko spread all over the South Sea Islands. Some authorities believe that the origin of Moko was as "war" paint. A curious custom resulted from the admiration of Moko among the indigenous Islanders. When in battle a warrior killed an enemy, he cut off the head of the dead man. If it was not tattooed with a Moko pattern, he kicked it away disdainfully. If it was adorned with a particularly attractive Moko, he handled the head carefully and stuck it on a pole to be

preserved and admired. This esthetic, though barbarous, custom continued up to recent times. When Western explorers started to come to the South Sea Islands, tattooed heads of dead warriors were in great demand as curios. At one time there was much trafficking in decorated heads between the English and the Maoris. This business had a sinister result. Horrible massacres were perpetrated by Maoris in their greed for filthy English lucre. When the supply ran low, they did not hesitate to kill.

Although the exact manner in which the knowledge of tattooing spread to the South Pacific is lost in history, it is known how it was carried to China and Japan. The Ainus, an aboriginal, nomadic people of northern Japan, brought the practice with them as they traveled across Asia to Siberia, China, and southern Japan. In China, there are evidences of tattooing as early as 1,000 B.C. The custom continued there until the Chou Dynasty (300 to 100 B.C.). It is usually spoken of only in connection with the barbaric tribes of the north. By the 13th century, tattooing was done only to brand criminals in north China.

When the wandering Ainus settled down, they occupied the island of Hokkaido in Japan. There the practice of tattooing took a different form. Ainu women had their chins and upper lips tattooed with an imitation of hair (Fig. 5). For older women, it seemed to be an expression of their desire for the power of men. The striving for women's liberation is not new. Among younger women, it was a way of broadcasting the news that they had arrived at puberty and were ready for marriage. The belief was current among women that an untattooed woman would be forcibly marked after death by a devil with a huge sword. Also, it was thought that a tattooed woman would be protected in life from the discomforts of menstruation, would enjoy good health in this world, and would be assured of a happy sojourn in the hereafter. Still another of their beliefs was that faded tattoos caused a tendency to blindness, and consequently, from time to time, tattoos were freshened with new pigment.

By the time of the Roman Era, Britons, Iberians, Gauls, Goths, Teutons, Picts, and Scots were practicing the art of tattooing. According to Rhys, the Picts derive their name (which means painted) from this custom.<sup>6</sup> The early Romans themselves considered tattooing as barbaric. Later, a few Romans became interested in the art, but the practice flourished only for a short time in their world. The early Christians used small tattoos such as the sign of the cross, a lamb or fish, or the letters X or JN to identify themselves,<sup>7</sup> just as members of present-day Mexican-American gangs often sport "the pachuco mark." When the Roman Emperor Constantine established Christianity as the religion of the Roman Empire, he forbade tattoos on





FIGURE 2A. Tattooed hand of mummy from Ancon, Peru (A.D. 900-1450) with four stylized birds depicted from the wrist to the base of the index finger. (From the collection of the Peabody Museum, Harvard U. Courtesy of P. W. Post, Ph.D.)



FIGURE 2B. Tattooed hand of a mummy from the coast of Peru (date?). (From the collection of the Museum of the American Indian Heye Foundation, New York City. Courtesy of P. W. Post, Ph.D.)



FIGURE 3. Tattooed forearm of a mummified Nubian man, said to date from about A.D. 250-450. (Reproduced with permission from Post, P. W., Daniels, F., Jr., and Armelagos, G. J. *Ancient and mummified skin. Cutis* 11:779-781, 1973)



FIGURE 4. A Moko design on the face of a shrunken head as depicted by RAMSAY.



FIGURE 5. An Ainu woman with tattooed lips. (Reproduced with permission from Eiji Miyazawa/Black Star)

the face because they disfigured the human body, made in God's image. In A.D. 787 Pope Hadrian banned all tattooing.

Somewhat earlier, Christian, Muslim, and Jewish laws all forbade the practice of tattooing. Nevertheless, desert tribes continued the practice, believing that tattooing was valuable for curing "rheumatism" and a guard against "the evil eye." Christian pilgrims arriving in Jerusalem frequently had a religious symbol (e.g. the sign of the cross, a lamb or fish) tattooed on the chest and arms. Sometimes their names or initials were added. In other parts of the world, in Assam and Burma for example, the art of tattooing continued into and during the Middle Ages. In the transition from the Middle Ages to the Renaissance, explorers from various parts of the world remarked the practice of tattooing. In 1530, Cabeza de Vaca observed tattoos on the natives in the Gulf of Mexico, and Captain John Smith in 1593 noted tattooed natives of Virginia and Florida.

In the 17th century, the practice of tattooing flourished in Japan. It had been reinstated in the 13th century after having been abolished for two hundred years. Its use was largely confined to the branding of criminals, a punishment that replaced former, harsh sentences like loss of a nose or an ear. The greater the number of convictions, the more tattoos showed on a criminal's skin. The late 18th century marks the beginning of tattooing as a true art form in Japan. About the beginning of the 19th century, exhibitions were held all over Japan with awards given for the best designs of tattoos. Individuals frequently bequeathed their tattooed skins. Some of these were mounted and may be seen (with special permission) in the Anatomy Museum of the University of Tokyo Medical School. In 1868, however, Emperor Meiji made tattooing illegal. He considered it a barbaric custom that humiliated Japan in the eyes of Europe. Although Japanese people in general obeyed Meiji's law and stopped getting tattooed, the Japanese tattoo artists continued to practice on foreign visitors. They became so famous that many Europeans and Americans made trips to Japan just to have beautiful designs skillfully put on their skins.

The 18th century also saw a great impetus to the popularity of tattooing in other parts of the East. Captain Cook and his sailors were intrigued by the tattooed people of the South Pacific. Figure 6 is that of a man of the Sandwich Islands dancing. Cook's contact was probably the beginning of the popularity of the art among sailors around the world. It was through him and his crew that the word "tattoo" came into the English language and subsequently into other languages as well. It is interesting that the only other Polynesian word that became current in languages other than those of the South Sea Islands was



FIGURE 6. A tattooed man of the Sandwich Isles dancing. (Courtesy of the Bishop Museum, Honolulu)

"taboo," from Tongan "tabu," a word often used in connection with orders to ban tattooing. The word "tattoo" is a variation of "tattow," "tatau," and "tattaw," all forms of "ta," the Polynesian word for striking or knocking. In the act of tattooing, the Polynesians used a piece of wood to strike a piece of bone with many points on it carrying pigment to be driven into the skin (Fig. 7). In his diary called, "First Voyage, 1796," Captain Cook wrote, "Both sexes paint their bodies, *tattow* as it is called in their language, this is done by inlaying the Colour of black under the skins in such a manner as to be indelible."<sup>8</sup> The Bishop Museum in Honolulu has a fascinating collection of photographs of ancient Hawaiian tattoos like the mummified tattooed forearm shown in Fig. 8 and the picture of a woman getting tattooed shown in Fig. 9.

The next impetus to tattooing after Captain Cook came in the 19th century with the invention of an electrical machine for tattooing. It was designed by Samuel O'Reilly in New York about 1880 but was not patented until 1891, and then not in the United States but in Great Britain by Tom Riley, a cousin of Samuel O'Reilly. Tattoo machines are described in the article in this issue entitled "Modern Applications of Tattoos."



FIGURE 7. Hawaiian tattoo needles. On the left, a needle fastened to a bar is shown. On the right, a 700-year-old Hawaiian tattoo needle made from the humerus of an albatross is shown. (Reproduced with permission from Bone, R. and Ito, R. *Honolulu Advertiser*, January 15, 1979)

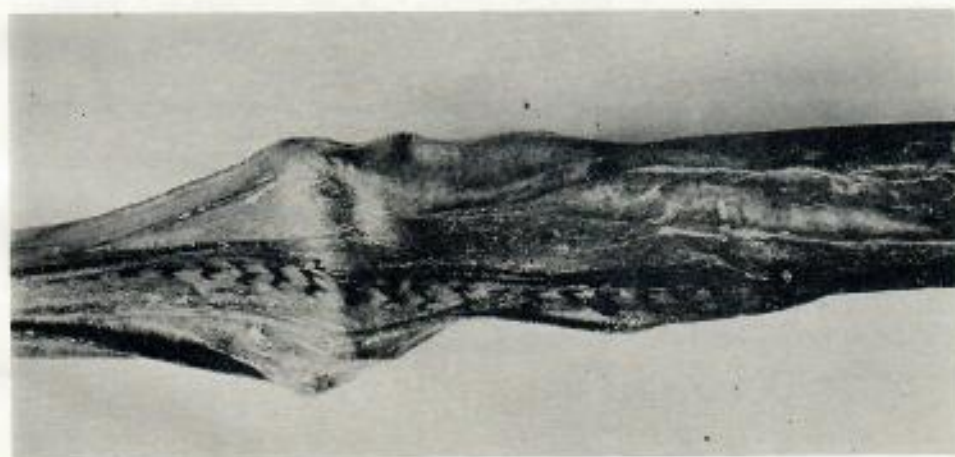


FIGURE 8. Tattooed forearm of a mummified 20-year-old Hawaiian woman found in a cave near Haunama Bay in 1935. (Courtesy of K. P. Emory, the Bishop Museum, Honolulu)

The climate of opinion about tattooing in the 19th century was more of approval in England than in the United States. This was probably due to an event that triggered a rage for tattooing among royalty. It began with the news that two sons of the Prince of Wales had been tattooed while on a trip to the Orient, news that was wildly exaggerated by heresy and rumor. According to Parry, the newspapers of 1879 and 1880, led by the *London World*, carried lurid accounts of broad arrows said to be tattooed across the princely noses.<sup>9</sup> There was consternation in the palaces and among the British people. There was even an inquiry in Parliament. When the Princes returned from the cruise, the outraged but curious populace was relieved to see there was no color other than that of sunburn on the royal noses. They only had dragons tattooed on their arms.



FIGURE 9. A Hawaiian woman being tattooed. (Courtesy of the Bishop Museum, Honolulu)

The furor subsided, and a rush began to get tattoos, especially by royal personages. From England, passion for tattoos spread to other European countries. Representatives of those who indulged in the fad were Czar Nicholas II of Russia, Queen Olga and King George of Greece (who had served in the British Navy), King Oscar of Sweden, Prince and Princess Waldemar of Denmark, and Kaiser Wilhelm of Germany. Of the latter, a reporter wrote in the *Australian Star* of Sydney: "The German Emperor would look even more like a war lord if we could behold the fearsome eagles on his manly bosom." Following the example of the royal families, English nobility took tattooing to heart and body.

The growing custom of tattooing among the aristocratic families of Europe did not fail to have an influence on their American admirers. In 1893, members of the exclusive Racquet Club of New York were in great excitement. A bath attendant and one of the members were surprised to see the British Earl of Craven coming from his shower showing tattoos of the crest of his House and other designs on his body. Talk of the incident spread. There were unfavorable comments in the newspapers and in posh Fifth Avenue clubs, but interest in tattoos was aroused.

At the turn of the century, another influence was at work that further increased interest in tattooing in the United States, namely, appearance of tattooed men in circuses. They advertised the art and promoted the practice of tattooing. By 1897, a mania for tattooing developed among women, as well as men, of highest social standings. In 1898, a newspaper interviewer reported that men going west got tattooed because the "Red Men" with whom they might come in contact had admiration for painted designs on a man's body.

After the First World War, Lou Albert, a tattoo artist known as "Lou the Jew," began to design wall charts with samples of pictures that could be tattooed on skin. These charts, or "flash," came into use all over the world. Interested persons choose patterns from catalogs of them.

There are more resemblances than differences in the practice of tattooing throughout the world. The popularity waxed and waned, but even in periods when tattooing was proscribed by law, it persisted, and it survives to this day. Considering the psychology of desire for personal adornment, we daresay tattooing will continue to be practiced and there will always be subjects who will crave to be tattooed.

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### III. Tattoos in Different Cultures

NORMAN GOLDSTEIN, M.D., F.A.C.P., AND MARGARET SEWELL

THE LATE "Sailor Jerry," a Honolulu tattoo artist, stated "all sorts of people came to me for original designs and coverage, people on the professional level, people from all walks of life and from all countries, ranging from the wealthy sets to the little nobodies who just wandered in off the streets."<sup>1</sup> While this may be true in Honolulu, especially before, during, and after the Second World War, in some countries and cultures, tattooing filled and still fills a definite social or community need of the people. It is the purpose of this text to show some of the attitudes about tattooing among the people in other cultures, especially of Micronesia, New Zealand, Japan, Samoa, and Hawaii.

#### MICRONESIA

In spite of the thousands of miles of ocean that separate the thousands of islands in the Pacific, there are many similarities in customs of tattooing there. In Yap, Palau, and western Truk, there are different reasons for tattooing among men and women. Men want tattoos for ornamentation, especially if they are chiefs or important leaders of clans. Women have tattoos placed on their hands and arms purely for ornamental purposes, but have concealed tattoos elsewhere that are putatively highly erotic. Bird patterns on the mons veneris are common. The Trukese women often have tattoos set on the medial aspects of their thighs near the genitalia. Such tattoos are ordinarily not viewed by men, except during lovemaking, and are said to have the effect of visual aphrodisiacs.

#### NEW ZEALAND

The Maoris of New Zealand developed a unique tattoo pattern called Moko. An example of a Moko type of design by the artist RAMSAY has been presented in the previous article (Fig. 4, p. 853). Prints showing Maori warriors standing near their beautiful long

canoes show them as proud, brave men. For them, like the men of Truk, tattoos are a means of ornamentation and are usually placed on the face. Women use them less for ornamentation than for identification of marital status. If they have tattoos on their lips or on their chins, they are recognized to be married women. Figure 1 shows a Maori woman named Ararupone and her child. This painting, first displayed at the St. Louis World's Fair in 1904, was done by Gottfried Lindauer



FIGURES 1-6. Examples of tattoos on faces practiced by the Maoris in New Zealand. (Courtesy of the Bishop Museum, Honolulu)

of Pilsen, Czechoslovakia. Pare Watene (Fig. 2) was "one of the handsomest women in the Thames district of New Zealand."<sup>2</sup> Her long tresses reached down to her knees. Other examples of Moko tattoos may be found in the Bishop Museum in Honolulu (Figs. 3-6). There are several art books depicting Maori tattoos, notably "Faces from the Past, The Dignity of Maori Age,"<sup>3</sup> by Kristin Zambucka.

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Mrs. Sewell is a freelance writer in Honolulu, Hawaii.

FIGURE 2.



FIGURE 3.



FIGURE 4.

FIGURE 5.

FIGURE 6.

#### JAPAN

The epitome of the skill of tattooing is reached in the islands of Japan. In the early history of Japan, the Ainu women particularly were known for their tattoos. An illustration may be seen in the previous article (Fig. 5, p. 853). The desire to be tattooed sprang from Ainu superstitions that tattooing was a protection from disaster and physical ailments. Later the superstitions were superseded by desires for ornamentation. It even became customary to exclude untattooed women from banquets, as modern women up to recent times were

unwelcome at formal affairs without formal evening attire.

Gradually, other ancient Japanese people became influenced by the tattoos of the Ainu women. Not only other women, but emperors and members of their courts, men and women, adopted the practice. It is uncertain how long this went on, but it is known that tattooing was abolished and then reinstated in the 13th century. Then, for a long period during the 17th century, tattooing was largely done for the branding of

criminals, and the more their convictions, the more their tattoos.

The Ukiyo-e prints of the Edo Period (1600–1868) represent a unique development in Japanese art because they mark the first time that artists dealt with subjects of popular interest as opposed to that of the aristocracy or priesthood. Ukiyo-e prints, originally used to illustrate sex manuals, were quickly adapted to adorn by tattooing warriors, actors, children, and beautiful women. Landscapes and rustic themes were also tattooed on them. Persons so tattooed often were criminals or prostitutes of the era who played important roles in the "pleasure quarters of Edo" and it was from these very streets that many of the Ukiyo-e ar-



FIGURE 9.

tists drew their inspiration. These prints may be viewed in the San Francisco Tattoo Art Museum (Figs. 7–10).

As the 18th century progressed, tattooing became a rage among all social classes in Japan. Contests were held and awards given for best designs. This period marks the beginning of tattooing as an art form in that country, and continues so to this day. Even when Emperor Meiji made tattooing illegal in 1868, Japanese tattoo artists were able to continue their practice, because, although the Japanese themselves obeyed the law, there were many foreign visitors who wished to be tattooed. In addition to Americans and continental Europeans, there were many British tattoo buffs, among them the Prince of Wales and other members of the Royal Family. This gave rise to a complaint voiced by one Japanese citizen, "Why does the government forbid us to be tattooed? We have heard that a certain man of the Royal House of a certain civilized country came to Japan to be tattooed."<sup>3</sup> Tattooing is now legal again in Japan and, in fact, there are several tattoo clubs and societies in Japan. Because of my artistic and scientific interests in tattoos, I was made an Honorary Member of the Tokai Tattoo Club of Japan.

There are several Japanese words used to designate types of or purposes for tattooing. *Irezumi*, according to Tadasu,<sup>4</sup> means tattooing for punishment, whereas



FIGURES 7–10. Ukiyo-e prints of the Edo Period (1600–1868). (Courtesy of the San Francisco Tattoo Art Museum)

*Horimono* (in the Edo district of Tokyo) and *Gaman* (in the Kyoto-Osaka regions) mean tattooing for adornment. The word *Iro* means color, but has a secondary erotic meaning, "sex." *Irozumi* is therefore a pun in which *Ire-* of *Irezumi* connoting punishment is changed to *Iro-*, connoting sex. *Irozumi* is also "white" tattooing brought out by a *furo* (hot tub), slapping the skin, or ingestion of alcohol. A synonym for this so-called white tattooing is *Oshiori-bori*, a term coined thirty years ago when elemental lead was used for the white pigment. Today, nontoxic titanium dioxide is used, for example, to portray the whites of a dragon's eyes. The best black color in Japan comes from temple lamps in Nara, according to Dr. Henning Schmidt of Denmark.

The Yakuza, a Japanese organized-crime syndicate, similar in reputation to the Mafia, encourages extensive body tattooing.<sup>5</sup> If members are arrested, they are readily identified as of the Yakuza because of their tattoos and in addition, by a missing finger that had been amputated as a sign of bravery or loyalty to the organization.

In Mizoguchi's film, "Utamaro and His Five



FIGURE 10.

FIGURES 11  
AND 12.  
*Japanese whole-  
body tattoos.*



FIGURE 12.

FIGURES 13-  
15. *Japanese  
tattoos. (Cour-  
tesy of H.  
Suzuki, M.D.,  
and M. Ohkido,  
M.D.)*



FIGURE 14.

FIGURE 15.



FIGURE 16. *The  
ever-popular rose  
tattoo in a  
Japanese version.  
(Courtesy of M.  
Nakano, M.D.)*



FIGURES 18-21. (Right and below). Examples of Samoan body tattoos.

FIGURE 17. Samoan tattoo instruments, donated by N. McGrevy, International Consultants Co., Honolulu)



FIGURE 19.



FIGURE 20.



FIGURE 21.

FIGURES 22 AND 23. *Examples of decoration by scars and keloids practiced in Africa.*



FIGURE 23. *(Reproduced with permission from National Geographic 130 (Nov.); 673, 1966.)*



FIGURE 24. *A tattoo predominantly in brown pigment. (Courtesy of W. P. Hermann, M.D.)*

FIGURES 25-28. *Tattoos on Danish subjects. (Courtesy of H. Schmidt, M.D.)*

FIGURE 26.

FIGURE 27.



FIGURE 28. *(Hof is a brand of Danish beer.)*

Women" (1946), the protagonist is interested in what he calls revolutionary art. He draws a glorious sketch on the back of a woman, a sketch that is later tattooed for permanency. He does not consider it beneath him as an artist to sketch tattoos because he thinks that tattooing is an artistic medium suitable to the physical and spiritual lives of the people.<sup>6</sup>

While tattooing in Japan began in the usual humble way, it is now a popular art form, exciting and "alive" as the full-body tattoos seen at clubs, fairs, and other gatherings in modern Japan show (Figs. 11 and 12). Other Japanese tattoos are illustrated in Figs. 13-15. The small flower is popular in Japan as it is in the United States and other countries (Fig. 16).

#### SAMOA

Samoa is composed of a chain of islands in the South Pacific midway between Honolulu and Sydney, Australia. The Samoan natives are Polynesians who probably arrived in their present homeland as early as 1,000 B.C. Tattooing in Samoa is practiced today as in the past. The tattoo pigment is tapped into the skin with a multipointed shell attached to a wooden stick. Samoan



FIGURE 29. A Hawaiian officer, circa 1819. Note the geometric patterns tattooed on the chest, thigh and leg, and "Tamaahmah died May 8, 1819" tattooed on the upper right arm to commemorate the death of the king.

tattoo instruments may be seen in Fig. 17. Samoan tattoos are usually applied from the mid torso to the knees and present legend and story in very heavy pigments, usually black to begin with, but later blue as macrophages carry the pigment deeper in the dermis and thus produce the Tyndall effect (Figs. 18-20). The more tattoos, the higher the social status of the tattooed. The man in Fig. 21 has some interesting Samoan tattoos and an unrelated condition, namely, elephantiasis.

#### AFRICA

Examples of tattooing and decoration by scars and keloids are illustrated in Figs. 22 and 23.



FIGURES 30-33. Hawaiian tattoo prints, (Courtesy of the Bishop Museum, Honolulu)



FIGURE 31.



FIGURE 32.

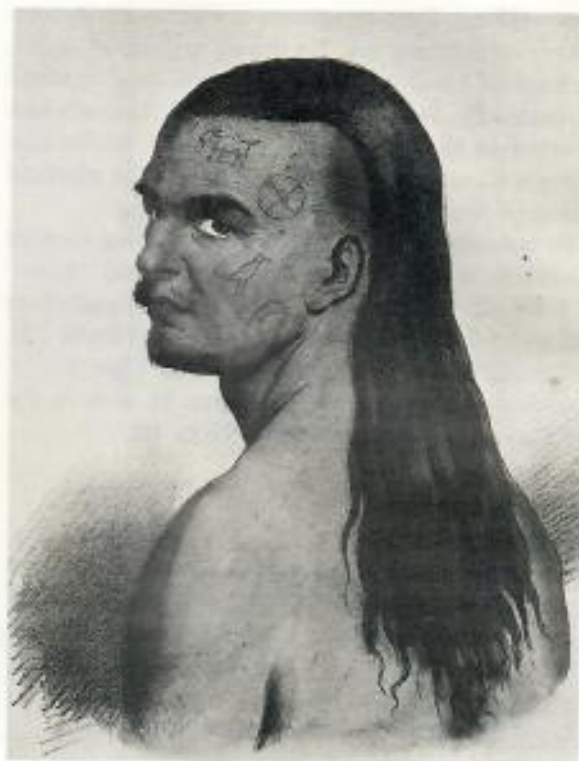


FIGURE 33.

#### EUROPE

An example of a tattoo predominantly in brown pigment is shown in Fig. 24. Various modern-day tattoos on Danish subjects may be seen in Figs. 25-28.

#### HAWAII

The tattooer of ancient Hawaii had to perform his art of beautifying the body with meticulous concentration and precision. Tattooing the body of an *alii* (royal personage) was a highly paid but risky business. The usual punishment for touching a noble body or spilling noble blood was death. The tattooer was given provisional immunity while he worked on royal bodies, but that was easily revocable. No erasures or corrections were permitted; artistic blunders were intolerable.<sup>7</sup> Figures 29-33 are examples of ancient Hawaiian tattoos.

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## V. Psychological Implications of Tattoos

NORMAN GOLDSTEIN, M.D., F.A.C.P.

DERMATOLOGISTS, plastic surgeons, and psychiatrists seem to be particularly interested in tattooed skin if one may judge by their writings and attendance upon exhibits such as the one at the annual meeting of the American Academy of Dermatology in 1977.<sup>1</sup> Indeed, most people, lay persons as well as doctors, are curious, often amazed, and sometimes awe-struck by the extents and elaborate designs of tattoos. Thoughtful students of human psychology try to probe what motivates persons to get tattooed and what the designs they choose mean to them or what they intend them to mean to those who view them. Here is a passage from Truman Capote's novel *In Cold Blood* that is interpretive reporting of two real killers and what they did:

The two young men had little in common, but they did not realize it, for they shared a number of surface traits . . . Dick was an athlete constructed on a welter weight scale. The tattooed face of a cat, blue and grinning, covered his right hand; on one shoulder a blue rose blossomed. More markings, self designed and self executed, ornamented his arms and torso; the head of a dragon with a human skull between its open jaws; bosomy nude; a gremlin brandishing a pitchfork; the word PEACE accompanied by a cross radiating in the form of crude strokes, rays of holy light; and two sentimental concoctions—one a bouquet of flowers dedicated to Mother-Dad, the other a heart that celebrated the romance of Dick and Carol.

While Perry had fewer tattoos than his companion they were more elaborate—not the self inflicted work of an amateur but epics of art contrived by Honolulu and Yokohama masters. Cookie, the name of a nurse who had been friendly to him when he was hospitalized, was tattooed on his right biceps; blue-furred, orange-eyed, red-fanged, a tiger snarled upon his left biceps; a spitting snake, coiled around a dagger, slithered down his arm; and elsewhere skulls gleamed, a tombstone loomed, a chrysanthemum flourished.<sup>2</sup>

Not every person who gets tattooed is worthy of complex psychologic study, nor is every tattoo design

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of deep significance. Most tattooed persons are simpleminded and most designs are banal. Disregarding the generality of tattooed individuals and their tattoos, a review of medical literature, particularly the psychiatric, indicates that some patterns of tattoos, their number, and locations on the body have profound psychological meaning.

Some 15 years ago, I together with Dr. Shepard Ginandes, a psychiatrist, and Sidney Halperin, Ph.D., a psychologist, studied tattooed individuals at the Tripler Army Medical Center in Honolulu. Our findings were reported at the annual meeting of the American Academy of Dermatology in 1977<sup>1</sup> and at the symposium on Sherlockian Dermatology held at the New York University School of Medicine in 1978<sup>3</sup>. We studied 50 tattooed patients hospitalized in that military facility for psychiatric conditions and compared them to an equal number of patients with similar conditions who were not tattooed. The interpretation of tattoos in military personnel hospitalized for psychiatric reasons cannot and should not be categorically inferred to be that of tattoos in non-military, non-psychiatric persons nor of individuals in other social or cultural environments. Nevertheless, each subject was investigated by psychological testing, questionnaires, and interviews. Family, social and economic factors, the roles of parents, education, attitudes, and experiences were recorded and tabulated. The findings, such as they are, are meaningful even if limited.

Following is a tabulation of psychiatric disorders and the prevalence of tattoos on subjects:

	Tattooed	Non-tattooed
Psychosis	5	15
Character disorder	33	18
Sexual perversion	0	4
Alcoholism	4	3
Psychoneurosis	3	7
Occasional drunkenness	1	1
Other mental disorders	4	2
	<u>50</u>	<u>50</u>



FIGURE 1. A penis, tattooed with a butterfly of an unidentifiable species.



FIGURE 2. A penis tattooed with a corkscrew design. (We doubt it helps.)



FIGURE 3. (Left) A banal tattoo on an earlobe. FIGURE 4 (Right) A tattoo on the ulnar side of a right hand that made the subject not acceptable for military service. (It would not do for the military to disarm such inductees.)



FIGURE 5. Tattoos on the buttocks and arms of a male homosexual.

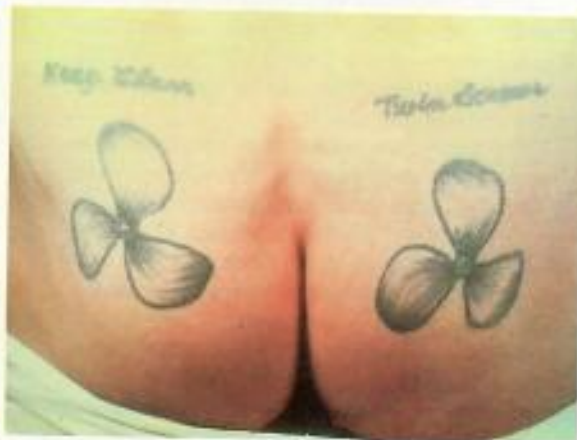


FIGURE 6. Another tattoo on buttocks that has a naval motif.

The number of tattoos per patient ranged from one to 11 or more. Fourteen patients had one tattoo, 17 had two, eight had three, one patient had 10, and four patients had 11 or more. The designs of tattoos ran a broad spectrum from names (61), girlic figures (31), animals (30), insignia (27), birds (25), flowers (21), hearts (13), daggers (11), manacles (7), aces and horse-shoes (7), religious symbols (6), baby dolls (6), skulls (4), the word "love" (3), and ships (2).

We found from our data that having one tattoo had little relationship to a psychiatric diagnosis. But when an individual had a second tattoo, he was much more likely to have a character disorder. The American Psychiatric Association defines a character disorder as "characterized by developmental defects or pathological trends in the personality structure with minimal objective anxiety and little or no sense of distress. In most instances the disorder is manifested by a life-long pattern of action or behavior rather than by mental or emotional symptoms."<sup>4</sup> Compared to the control group of non-tattooed, hospitalized psychiatric patients, members of the tattooed group were less likely to be psychotic or psychoneurotic. Dr. Ginandes thinks that, "Young men in the military who suffer from character disorders tend to express their attitudes about early parental authority figures by displaying their resentment of authority and inability to accept controls, often the military hierarchy, and thus frequently act like unruly children defying their parents."<sup>5</sup>

In our study, granted that it is a limited segment of the tattooed population, the tattooed patient was found to be "basically immature, sexually ambivalent\*, emotionally labile, and lacking in frustration tolerance. He tends to act out hostile, aggressive, and infantile impulses with no regard for others against a background of impaired relationships to parental figures. Intelligence was generally well within the normal range."<sup>6</sup>

Some other interesting observations were made in our study. Concerning homosexuality, patients were asked, "Are you a homosexual?" Two of the tattooed group and two of the non-tattooed group answered "yes," the rest said "no." In answer to the question, "Have you ever been 'propositioned' by homosexuals?" 40 tattooed patients and 31 non-tattooed answered "yes." There was no difference in the responses of patients, tattooed or not, concerning their thoughts about homosexuality. Fifteen said of homosexuals that "they were sick," one said "they should be punished," three felt "disgust," nine thought "they were wrong," and five "felt sorry for them." Concerning circumstances under which the

tattoos were requested and done, out of the 200 tattoos in all, in 38 the individual was drunk; in 38, merely "high"; and in 124, sober. The tattoos were self-applied in 10, applied by a woman in 13, and the rest applied by professionals. Thirty-five of the 50 said they would not be tattooed again. Both those with tattoos and without were of the opinion that a man who gets tattooed is usually an "ordinary guy." In the matter of reactions of women to their tattoos, five patient reported that women liked them; 23 said women did not like them; 10 said women were indifferent. Nineteen out of the 50 tattooed had civilian police records; 18 of the non-tattooed group had such records. Eight of the tattooed group had been in prison before military service; six of the non-tattooed group had been incarcerated.

There are numerous references to tattoos and their psychologic implications in the psychiatric literature. Martin, a psychologist at New Mexico State University, reported in 1977 that officials in the U.S. Army conducted a study of motorcycle accidents in an attempt to correlate accidents with variables like socioeconomic level and age.<sup>7</sup> Surprisingly, the best predictor was found to be the number of tattoos riders had. Martin concluded that more cogent factors than mere tattoos must exist; perhaps a "preference for risk" was basic for both the tattoos and the accidents.

Rook and Thomas, in 1952, presented a general review of tattooing<sup>8</sup> and in 1963, reviewed specifically motives for indulging in the practice<sup>9</sup>. The motives they found were ornamentation, exotic meanings, signs of courage, initiation into adulthood, magico-religious symbolism, and establishment of an "identity." The kinds of people who got tattooed were most often military personnel, juvenile gang members, prostitutes, cowboys, miners, loggers, and persons who landed in prisons.

In the largest investigation of tattooed people, Lars Hellgren studied 877 who were tattooed out of a population of 34,152 people in Sweden. His published account has a monumental amount of demographic data including the age when tattooed (average 18.6 years with a range of 6-45 years), body weight and height (no difference of tattooed and non-tattooed groups), occupational distribution of 60 different jobs (chimney sweeps for the highest number of tattoos and writers, the lowest). There were no differences of tattooed and non-tattooed groups when their marital status was studied. Tattoos were not associated with a higher incidence of rheumatic diseases. Indeed, the opinion of the ancient Egyptian and old Swedish sailors that tattooing was a protection against rheumatic diseases could not be verified.<sup>10</sup>

It is extremely difficult in the United States to obtain

\* Tendency to homosexuality and/or homosexual and heterosexual interests.

data about who in the general population gets tattooed. Tattoo artists will uniformly say that there is no characteristic person who gets tattooed. One needs only to go to a beach or resort area where people wear little clothing to get an estimate of the number of people with tattoos. An astonishing number of women bear tattoos. Most of them have intimate tattoos concealed, but many are proud to display a butterfly, a flower, a delicate rainbow, or a tiny bee on a shoulder, breast, or ankle. Albert Parry, writing in 1934 on tattooing among prostitutes and perverts, describes some interesting tattoos suprapubically inscribed "keep off the grass," "the love nest," and "admission 50¢."<sup>11</sup> Let it be noted that he studied the phenomenon in the depths of the Great Depression.

Joseph Agris, M.D., D.D.S., a plastic surgeon, studied more than 200 women in a coeducational correctional institution in California in 1977.<sup>12</sup> He found that more than one-third of the women had one or more tattoos. The average number of tattoos per individual was five, with a range of seven to 24 in nine of them. Of the 70 women with tattoos, each had between three and four on exposed parts of their bodies and all the women had tattoos on ordinarily unexposed parts. The tattoos were placed by the tattooed themselves in 45%; by a friend in 40%; by a brother or sister in 5%; by a parent in 2%; and by a tattoo artist in less than 2%. Agris in general found that the women preferred soft, dainty designs like birds, flowers, butterflies, and hearts. Zodiacal signs, initials, and nicknames of boy-friends or husbands were also common. A single dot on the cheek usually indicated that the individual had been in a state juvenile correctional institution, but one on the chin or lower lip usually signified sometime incarceration in a federal institution. The "pachuco mark," a cross with rays emanating from the intersection of the vertical and horizontal bars, was found not only in the first interdigital webs of fingers, but on forearms, ankles, and even on a forehead. Sexual preferences were often signified in tattoos. A question mark placed on the second phalanx of the ring finger of the left hand indicated that the wearer was bisexual. Four dots on the dorsum of the proximal phalanx of a finger on either hand symbolized lesbian tendencies. When one hand bore four dots and the other a question mark, it meant the bearer preferred a lesbian relationship but would accept men for money. The number four just inside the cleavage of the breasts, on the medial aspect of a knee, or in the first web of a hand signified a woman "working the streets," the number four delicately standing for the four-letter street term for intercourse. The *ankh* sign is said to have been adopted by some women in the belief that it denotes the Goddess of Love, but the hieroglyph *ankh* signifies to Egyptians "long life." The number 13 standing for

the letter "M" cryptically indicated a user of marijuana. Finally, Dr. Agris has a photograph of the chemical formula for LSD (lysergic acid diethylamide) tattooed on the shoulder of a young college girl, who must have been exceedingly learned.

Hamburger and Lacovara studied 500 inmates in a federal correctional institution and reported their findings in 1963.<sup>13</sup> Sixty-five percent had tattoos; only 9% had but one tattoo. Ferguson et al., in an excellent review of the psychiatric significance of tattoos published in 1955, concluded that tattoos in multiplicity were characteristic of schizophrenics.<sup>14</sup> Also, schizophrenics usually went to a tattoo parlor alone rather than in a group. He also noted that a tattoo of a rose was very often associated with alcoholism. The pachuco mark and proper names were the most frequent tattoos on adult offenders remarked at a conference on rehabilitation held at the Montefiore Hospital in 1967.<sup>15</sup>

Plastic surgeons have studied inmates of prisons who wanted tattoos removed. Kurtzberg in 1967 found that many of them were narcotic addicts who requested removal of needle tracks that they themselves in attempts to disguise their habit had tattooed over or had had tattooed over by professionals.<sup>16</sup> Tattoos are commonly found on heroin addicts. According to Benahum, heroin addicts of a Spanish-American population in New Mexico had on them remarkable patterns of tattooing that represented in elaborate detail religious images alternating with wild beasts and erotic figures.<sup>17</sup> In 1973, Baden reported from the Medical Examiner's Office in New York City that of 1,000 cadavers of drug addicts examined in the morgues of New York City, 20% had one or more tattoos.<sup>18</sup>

A single tattoo usually has less psychological implication than many. It does not require extensive psychiatric training nor experience to realize, however, that a solitary tattoo on the tip of the penis (Figs. 1 and 2), on the tongue, on oral or genital lips, on the forehead, or on an earlobe (Fig. 3) does indeed have psychological import.

Savin<sup>19</sup> recounts how an obscene tattoo on a hidden area may "pass muster" for induction into the Army, but "fuck the army" (Fig. 4) tattooed on the ulnar aspect of the right hand required discharge of a soldier who could not salute a superior officer without signifying disrespect for the institution and its brass so blatant as to be intolerable. The same applied to another soldier who had the same message emblazoned on a shoulder. If such practice became a means to avoid military service, a serious problem would arise in drafts.

Male homosexuals frequently have tattoos on their buttocks (Figs. 5 and 6). Some are banal in the form of names of friends and lovers, flowers, lips, and similar





FIGURE 7.

FIGURES 7-12. Photographs of large areas of tattoos in women. (From the collection of the World of Tattoos)

unimaginative designs but some others are quite elaborate in theme and complexity.

Nowadays, women sport dainty tattoos, but in the past some tried to outdo men and had large areas of their skins adorned. In the latter, there were obvious sexual implications in sites and subjects selected (Figs. 7-12).

A final note must be made of tattoos on tattoo artists themselves. The most likely meaning of a tattoo artist who is heavily tattooed is that he is a walking billboard or advertisement for his vocation.



FIGURE 8.



FIGURE 9.

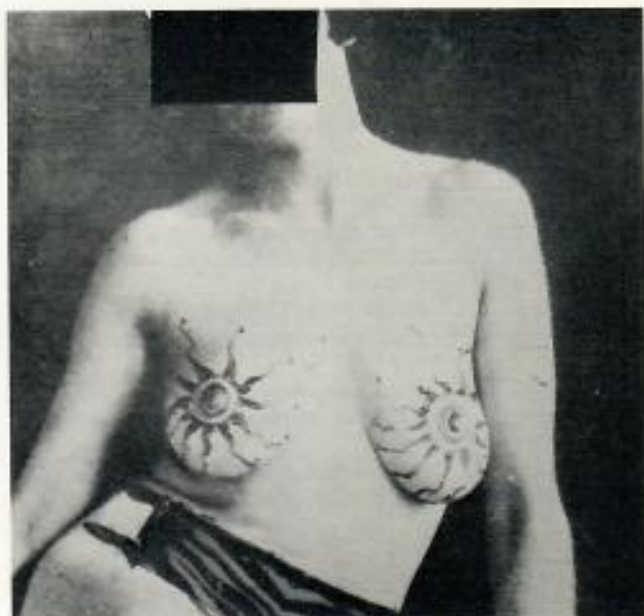


FIGURE 10.



FIGURE 11.



FIGURE 12.

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## VI. Modern Applications of Tattoos

NORMAN GOLDSTEIN, M.D., F.A.C.P., GEORGE H. MULLER, D.V.M.,  
AND LYLE TUTTLE

THROUGHOUT the centuries, there have been many practical, nondecorative uses for tattooing. In ancient Greece, Herodotus is said to have tattooed military information onto the shaved pates of his spies. When their hair grew in, those spies had little difficulty crossing enemy lines, and once past security inspection, their heads were shaved again and the military information was readily revealed. The ancient Romans tattooed their criminals and slaves for identification. Up to 1879, deserters from the British Army were tattooed with a "D" when captured; merely "bad" characters got a "B.C." Second-term prison offenders in Massachusetts in 1818 were similarly tattooed. Their prisoners frequently had the dates of their internment also tattooed on their arms. In 1880, a French Army surgeon recommended tattooing a mark over major blood vessels in order to indicate to personnel of the medical corps points at which to apply pressure in order to stop bleeding. More recently, in Nazi Germany, Jews and other "enemies of the state" were tattooed with serial numbers on their forearms for purposes of identification (Fig. 1). Those who survived the Holocaust bore their tattoos not only on their skins but had them seared in their minds, too. A Nazi soldier who had had the swastika proudly tattooed on himself regretted it dearly when he was captured (Fig. 2). During the Second World War some American soldiers had their blood types and military serial numbers tattooed in their axillae. In Denmark, some people have their "citizen number" (social security number) tattooed on their arms (Fig. 3).

Camouflage of nevi flammei (port-wine stains) has been proposed and practiced by Conway<sup>1</sup>, Bunke and Conway<sup>2</sup>, and Thompson et al<sup>3</sup>. The method is not satisfactory because the pigments inserted remain their same, invariable color, whereas surrounding normal skin changes in color with mood and season. The practice is all but abandoned by now. Tattooing of vitiligo is

also not successful except in deep black skin, in which sharp changes in color are not noticeable, so that in selected cases of small areas of vitiligo, tattooing may give acceptable cosmetic results. Dr. Andrew J. Lemmes, III of Los Angeles has had some good results with cosmetic repigmentation by tattooing.<sup>4</sup>

Lyle Tuttle, the San Francisco master tattoo artist, fills in spaces between sites of hair transplants with tattoo pigments (Fig. 4). Dermatologists and plastic surgeons may frown on the practice and deem it not necessary, but in some cases it may well be worth doing. Tattoos have been deviously placed to cover needle tracks of heroin addicts (Fig. 5). Conversely, tattoos have been perversely placed to advertise the habit (Fig. 6). Tattooing over obscene designs or to blot out the names of former friends and lovers is common and usually successful.

Tattooing may be a reasonable and an acceptable means to "replace" a nipple removed by accident or necessitous surgery. Tattooing may also be successful to disguise scars in eyebrows and in the bearded area. Frivolous tattooing of red pigment into cheeks as permanent "rouge" and into lips as permanent "lipstick" has been done.

Perianal tattooing was proposed and practiced by Hollander and Turell in 1951 as a treatment for intractable pruritus in the region<sup>5</sup> (Fig. 7). They used mercuric sulfide for the purpose and claimed some success. The practice is abandoned now because of the availability and effectiveness of topical and systemic corticosteroids.

There are some useful applications of tattooing in veterinary medicine. Valuable animals, dogs and horses particularly, may be tattooed with the owner's social security number and so registered with national animal registries. The Humane Society of the United States encourages this practice for dogs as a preventive to "dognapping."<sup>6</sup> Animal lovers have even gone so far as to have photographs of their pets tattooed on their own skins either out of sentiment or as a proof of ownership (Fig. 8). Researchers in wildlife also use tattooing to track migrations and other habits of animals.<sup>7</sup>

One of the most interesting veterinary uses for tat-

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Mr. Tuttle is a tattoo artist in San Francisco, California.

FIGURE 1. An identification number tattooed on an "enemy of the state" of a Nazi concentration camp.



FIGURE 2. A tattoo on the shoulder of a Nazi soldier.



FIGURE 3. A tattoo on a Danish citizen bearing his name and official number. (Courtesy of H. Schmidt, M.D.)



FIGURE 4. Hairless spaces between hair transplants filled in with tattoo pigment. (Courtesy of L. Tuttle)

FIGURE 5. A tattoo placed to cover up needle tracks on a heroin addict. (Courtesy of J. Agris, M.D.)



FIGURE 6. A tattoo placed to "point the way" for mainlining. (Courtesy of L. Goldman, M.D.)





FIGURE 7. Perianal tattooing with mercuric sulfide for pruritus ani, an obsolete practice. (Courtesy of S. Bluefarb, M.D.)



FIGURE 8. An animal lover with a tattoo of a pet. (Courtesy of L. Tuttle)



FIGURE 9. "Collie nose," actinic dermatitis on a dog. (Courtesy of G. H. Muller, D.V.M.)



FIGURE 10. Clinical appearance of the nose of a dog well tattooed to prevent solar damage. (Courtesy of G. H. Muller, D.V.M.)

toeing is that of the treatment for "collie nose" (Fig. 9). According to Muller and Kirk, this condition occurs in the pink areas on noses of collies.<sup>8</sup> It is also found in German shepherds and weimaraners and, indeed, in any dog with white or light skin and hair. When they live in sunny environments, these animals are afflicted with actinic dermatitis and keratoses in these sites. Topical steroids help to reduce the inflammation, but dogs usually lick the area constantly. Sun protectives help, but, again, it is difficult to keep a topical agent on the nose of an animal. Dr. Muller tattoos the sites with black ink for more enduring protection. It is, of course, done under general anesthesia and may require several treatments in order to get sufficient pigment to stay in the skin (Fig. 10).

An unusual use for tattooing was suggested by the noted organ-transplantation surgeon, Dr. Christiaan Barnard of South Africa, namely, that willing donors of organs have that will and information about their tissue type tattooed on their feet.<sup>9</sup> Rex Zeta, a tattoo artist in England, reports that he now has clients who

do not want to be donors of organs and have applied to him to put on their skins the message: "no transplants."

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## VII. Histologic Reactions in Tattoos

ALAN P. GOLDSTEIN, M.D.

TATTOOS are indelible marks in the skin created by premeditated or accidental insertion of pigments into the dermis. Histologically, identification of a tattoo is not difficult; brown, black, blue, yellow or red pigments are easily visualized in tissue sections at low magnification. Pigments are usually deposited at different levels in the dermis, but have a tendency to lie in the loose fibrous tissue surrounding blood vessels in the superficial and mid-dermis. They also tend to cluster as dense aggregates in the papillary dermis, and, in general, may be within macrophages or extracellularly between collagen bundles (Fig. 1). Pigments are generally refractile, but not doubly refractile.

The injection of any foreign material into the skin produces an inflammatory response, and some degree of necrosis, due to mechanical disruption of the tissues. This is an initial reaction that clears within one to two weeks. Subsequent responses, if any, reflect foreign-body reactions or reactions to sensitization to the materials.

Whereas tattoos are common, dramatic reactions to them are uncommon. As a rule, histopathologic

changes are slight, if at all perceptible (Fig. 2). Usually there is superficial perivascular infiltration composed of small numbers of lymphocytes and pigment-containing macrophages closely arrayed around slightly dilated vessels (Fig. 3). Mild fibrosis of the papillary dermis is an almost constant feature (Figs. 4 and 5). This slight reaction is due in large part to the

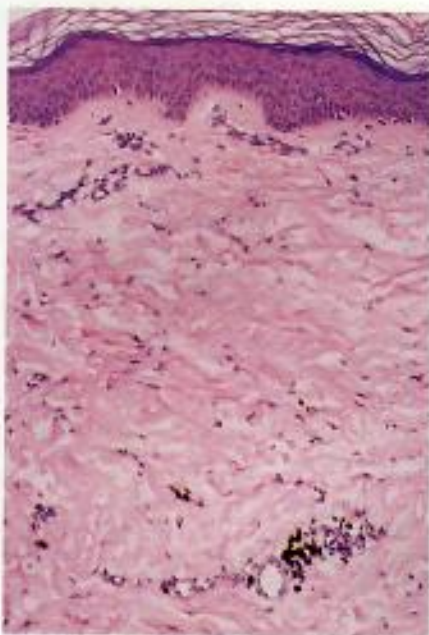


FIGURE 2. Black pigment around blood vessel in the dermis. (125 $\times$ )

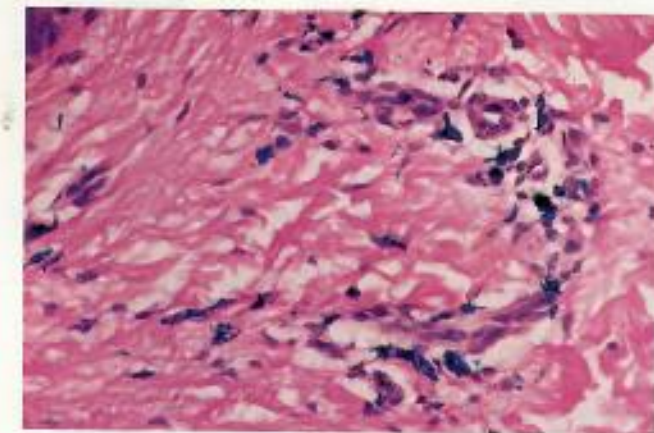


FIGURE 1. Blue pigment within macrophages and scattered among collagen bundles. (250 $\times$ )

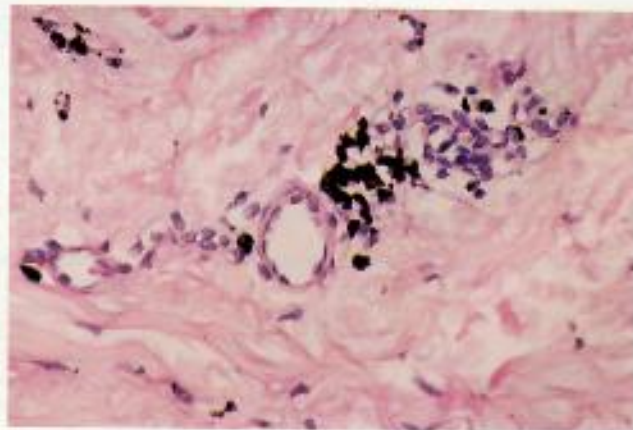
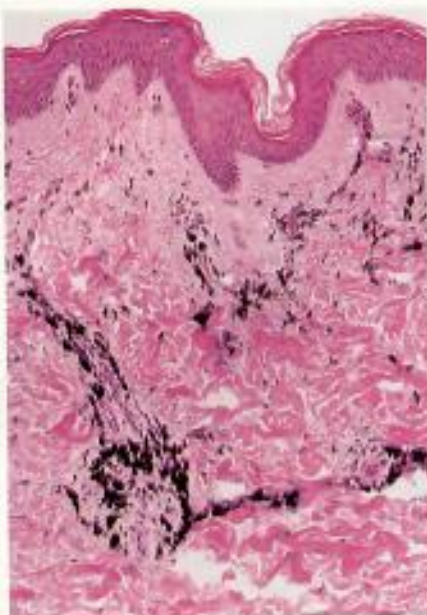


FIGURE 3. A dilated blood vessel surrounded by macrophages with engulfed pigment. Some pigment is extracellular. (250 $\times$ )

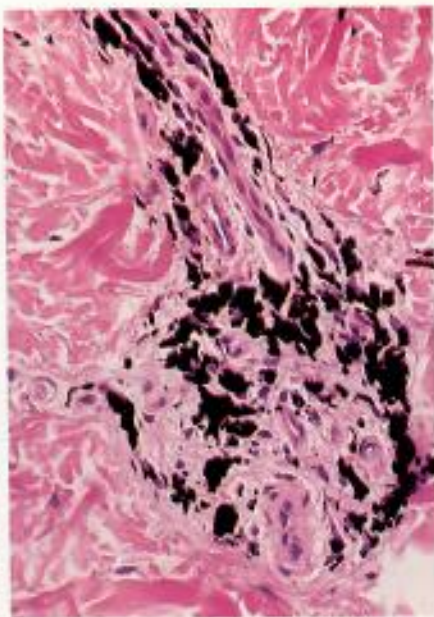
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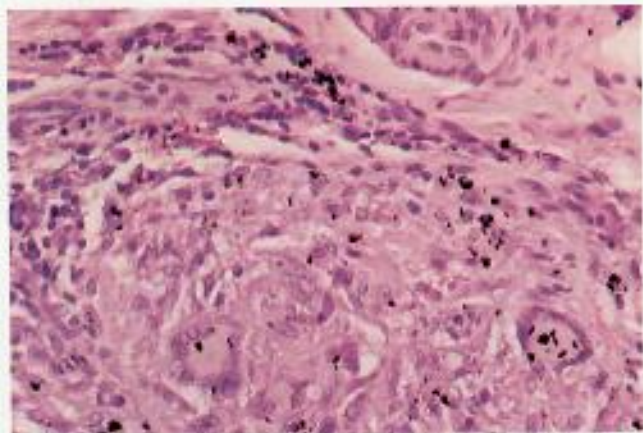
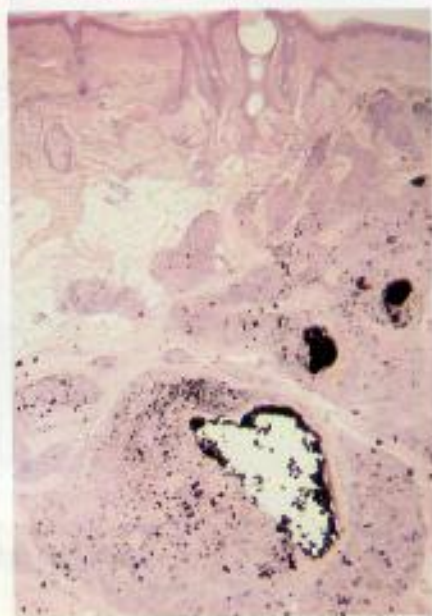
**FIGURE 4.**  
Densely clustered pigment arrayed around blood vessels. There is slight fibrosis of the papillary dermis. (125 $\times$ )



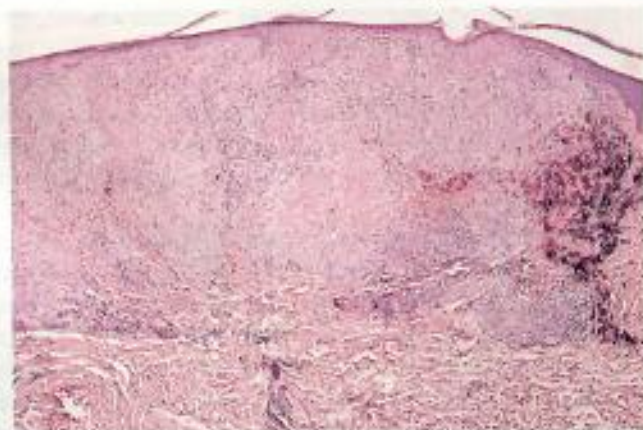
**FIGURE 5.**  
Densely clustered pigment in loose fibrous tissue surrounding a blood vessel. (250 $\times$ )



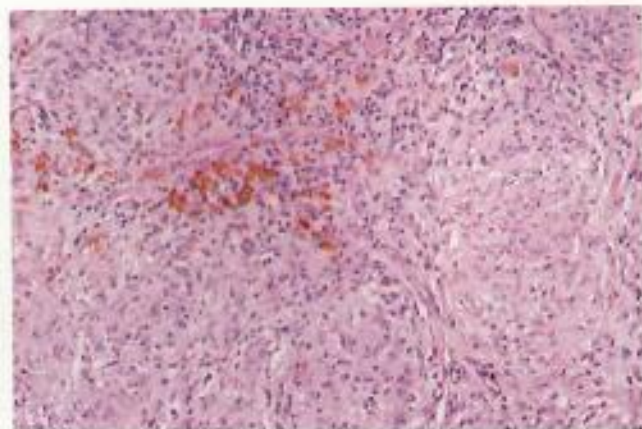
**FIGURE 6.**  
Foreign-body granuloma with abundant pigment. (10.25 $\times$ )



**FIGURE 7.** Foreign-body granuloma with multinucleated cells containing pigment. (250 $\times$ )



**FIGURE 8.** Sarcoid-like granuloma with large amounts of free pigment at the edge of the lesion. (31 $\times$ )



**FIGURE 9.** Sarcoid-like granuloma with epithelioid histiocytes, pigment, and a few giant cells. (125 $\times$ )

FIGURE 10. A nodular dermal aggregate of fibroblasts and collagen with pigment at the edges of the lesion. (10.25x)

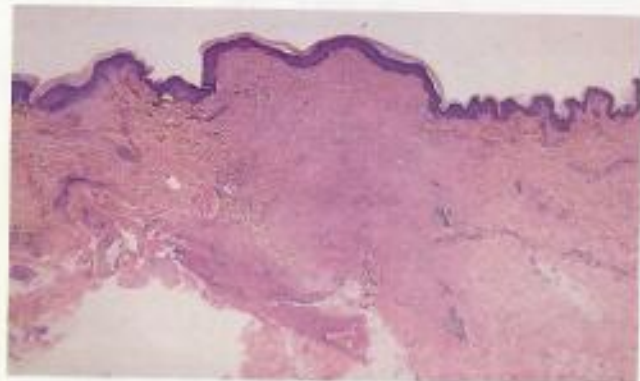


FIGURE 11. A higher power magnification of nodular dermal aggregate of fibroblasts, collagen, and giant cells. Note scattered speckles of pigment. (250x)

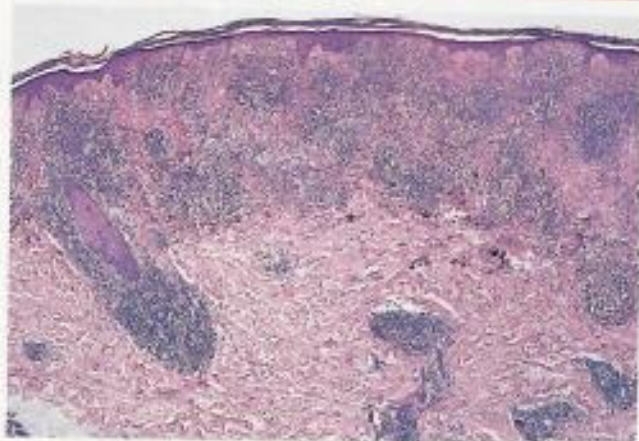
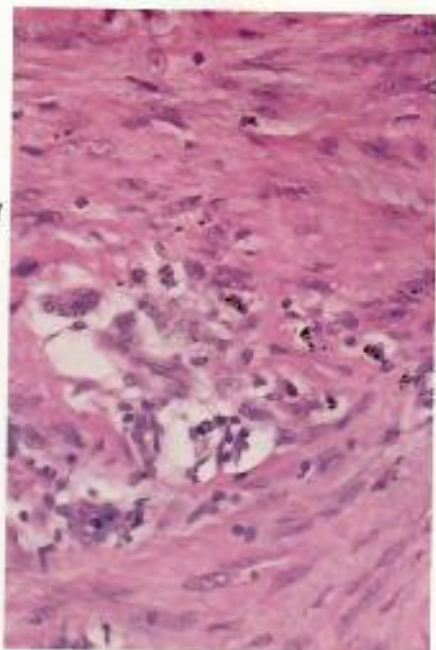


FIGURE 12. A dense lichenoid and peri-adnexal inflammatory infiltrate with scattered clumps of pigment. (31x)

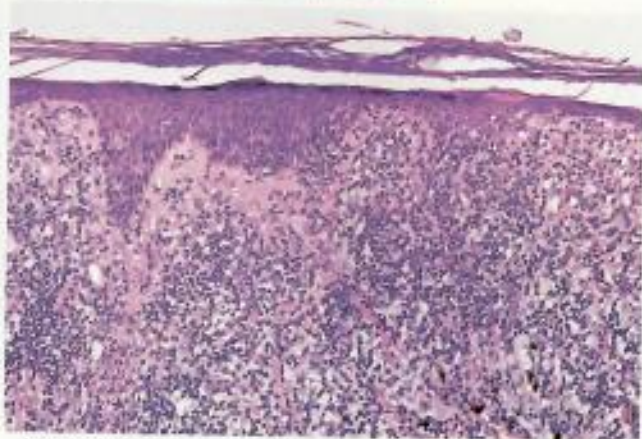


FIGURE 13. Thinned epidermis with compact horn overlying a lichenoid lymphohistiocytic infiltrate. Absence of thickened basement membrane or vacuolar alteration distinguishes this lesion from that of lupus erythematosus. (125x)

inert nature of most tattoo pigments. When there is a more pronounced response, it usually consists of an increased amount of collagen (fibrosis) or an increased number of histiocytes (macrophages), or both, and results in a strikingly different histologic picture. When histiocytes predominate, the inflammation is termed granulomatous, of which there are two patterns seen in tattoos, namely, 1) the foreign-body type with an abundance of giant cells that have engulfed large quantities of pigment (Figs. 6 and 7) and 2) the "sarcoid" type composed of aggregates of epithelioid histiocytes containing small quantities of pigment and few giant cells (Figs. 8 and 9). Several investigators have reported the concurrence of this latter type of reaction in tattoos together with the pulmonary hilar lymphadenopathy characteristic of sarcoidosis.<sup>1-4</sup> Evidence that this reaction, in the absence of hilar lymphadenopathy, may be merely sarcoid-like rather than true sarcoidosis, has been demonstrated by the induction of this cutaneous lesion in experimental animals tattooed with cadmium and mercuric sulfide and exposed to the sun.<sup>5</sup>

Marked fibroplasia with scattered giant cells creates a fibrohistiocytic pattern that is a sub-epidermal nodule resembling the common dermatofibroma both clinically and histologically (Figs. 10 and 11). The inflammatory infiltrate may also be primarily lymphohistiocytic. It may be sparse or dense in a lichenoid, peri-adnexal, or perivascular distribution (Figs. 12 and 13). Spongiosis in the epidermis overlying a tattoo is an



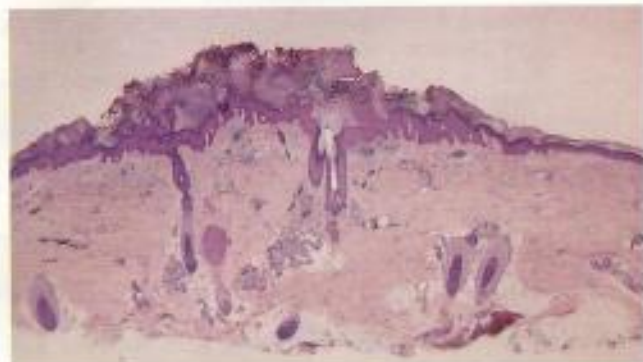


FIGURE 14. Peculiar keratosis upon a tattoo. Hyperkeratosis, parakeratosis, and moderately papillated epidermal hyperplasia is limited to a tattoo. (10.25x)

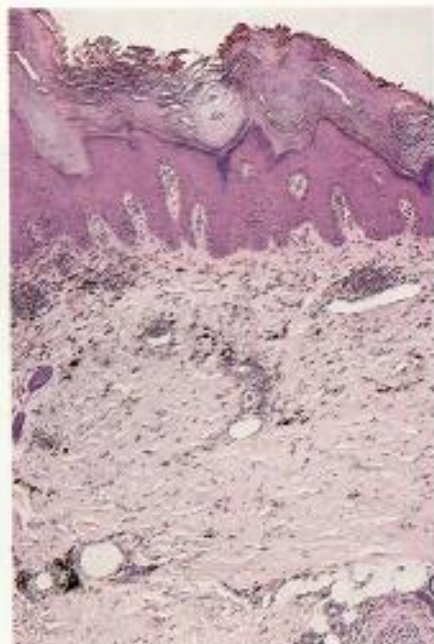


FIGURE 15. Peculiar keratosis upon a tattoo. There are papillated epidermal hyperplasia, solar elastosis, pigment, and lymphocytes surrounding prominent, dilated vessels. (50x)

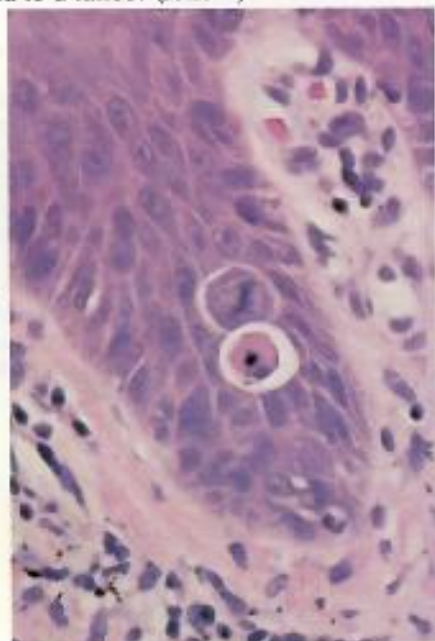


FIGURE 16. Necrotic keratinocyte and mitotic figure in the epidermis over a tattoo. (500x)

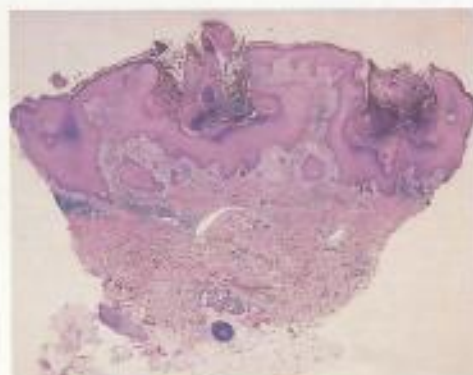


FIGURE 17. Keratosis over a red tattoo with small horn-filled craters resembling a keratoacanthoma. (10.25x)

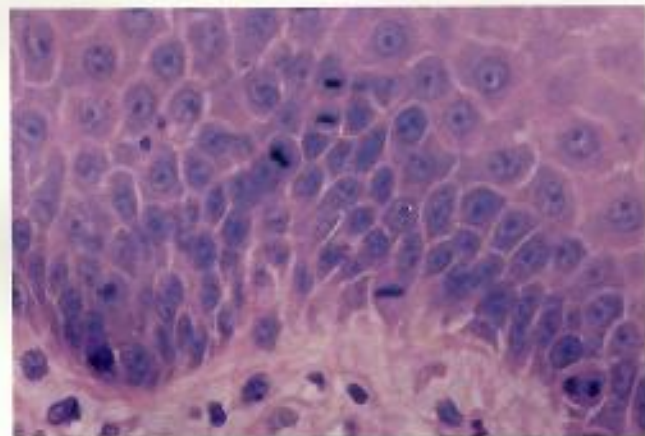


FIGURE 18. Keratosis over a red tattoo with cells that have abundant eosinophilic cytoplasm, prominent nucleoli. There are numerous mitotic figures. (500x)

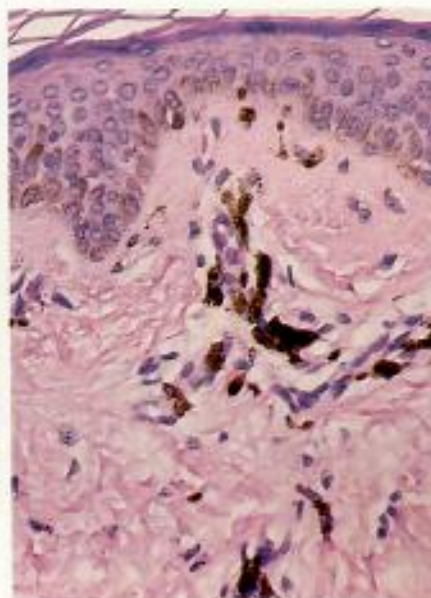


FIGURE 19. Post-inflammatory hyperpigmentation showing melanin within macrophages in the papillary dermis and within basal cells. (500x)

unusual but well-documented phenomenon.<sup>6</sup> It suggests sensitization to the tattoo material or to a cross-reacting substance.

Unusual keratoses may develop upon tattoos (Figs. 14-16). Those with horn-filled craters and epidermal hyperplasia composed of cells with large nuclei, prominent nucleoli and abundant eosinophilic cytoplasm may resemble keratoacanthomas (Figs. 17 and 18). Such reactions developing in the red portion of the tattoo have been reproduced in mice injected with cinnabar and cadmium salts upon exposure to sunlight.<sup>5</sup>

Finally, the pathologist must be cognizant of pigmentation that resembles that of tattoos histologically, but is not the result of the tattooist's art. Abnormal pigmentation of skin due to heavy metals (argyria and chrysiasis) is well known; bismuth and mercury may also cause cutaneous dyschromia. All of these metals have an affinity for the basement membranes of sweat ducts and sebaceous glands. Onychosis results in the deposition of pools of a yellow pigment. In hemochromatosis and post-inflammatory hyperpigmentation there are increased amounts of melanin in the dermis (Fig. 19). Improperly buffered formalin may result in the presence of a black pigment in tissue sections as an artifact.

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## VIII. Techniques of Removal of Tattoos

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ROGER I. CEILLEY, M.D., LEON GOLDMAN, M.D., VICTOR HAY-ROE, M.D., AND  
TIMOTHY A. MILLER, M.D.

### INTRODUCTION (NORMAN GOLDSTEIN, M.D.)

IN A previous article (p. 851), some reasons for having tattoos placed were explored in historical perspective. Now, as much as then, a main reason is the desire for physical adornment, most often conceived and acted upon impulsively, frequently in drunkenness or a disordered state of mind from drugs other than ethyl alcohol. And now, more often than then, regret and desire to have tattoos removed comes into being sooner or later. We will not dwell more on reasons for desiring removal of tattoos beyond saying that in some instances, tattooed persons feel their tattoo is a danger to a career or family situation (Figs. 1-4). Rather, we will now consider methods of removal of tattoos, ancient and crude, modern and sophisticated.<sup>1</sup>

There is no method of removing imbedded pigments of tattoos that restores the skin to its pristine, normal state. The pigments used in modern times are so biologically inert that no natural metabolic mechanism or artificial means solubilizes readily and removes them

cleanly and without damage to their site of placement. The most reasonable and practicable of methods may result in more or less scarring. It is required to reach the pigments mechanically and as mechanically remove them by some form of surgery or to inflame the skin so severely by physical methods or chemical caustics that they are thrown off in the healing process.

The crudest of methods is simple application of strong chemical caustics like salicylic acid, chloracetic acids, phenol, sulfuric acid, nitric acid, and zinc chloride. More refined methods are: 1) a combination of application of chemical caustics and delicate surgery that makes them operative, 2) salabrasion, 3) cryosurgery, 4) dermabrasion, 5) thermal cautery by fulguration or laser, and 6) various techniques of conventional surgery. These are the methods that now will be described briefly and illustrated by various authors.

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### THE SO-CALLED FRENCH METHOD OF VARIOT (JAMES PENOFF, M.D.)

In 1888, Variot described a method of removing tattoos by linear incisions, scratches, or punctures and successive applications of solutions of tannic acid and silver nitrate.<sup>1</sup> The principle obviously is to damage the integrity of the epidermis at interrupted points and then to drive necrotizing chemicals into the dermis. An eschar is thus formed that is not as gross, deep, destructive, or extensive as that caused by simple splash of other strong caustic chemicals, and the healing from it is not as coarse, deep, and extensive as from direct applications of other strong chemical caustics to the intact epidermis. Interruption of the integrity of the epidermis may be done by making a grid of parallel and criss-crossed superficial incisions or deep scratches.

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Dr. Hay-Roe is Chief of the Department of Plastic and Reconstructive Surgery, The Honolulu Medical Group, Honolulu, Hawaii.

Dr. Miller is Associate Professor, Department of Surgery, U.C.L.A. Center for the Health Sciences, Los Angeles, California.

FIGURE 1. A representative tattoo on a member of a motorcycle club.



FIGURE 2. The "pachuco mark," a common "status symbol" sported by Mexican-Americans.



FIGURE 4.



FIGURES 3 AND 4. A representative elaborate and moderately erotic tattoo of a luscious nude, identifiably Oriental, partially finished in Fig. 3, and completed by overlay of a "spider" in Fig. 4.



Then application of solutions of tannic acid and silver nitrate cause a flexible, leathery eschar to form that has points or bits of viable epidermis and epithelial elements of adnexa within it. The end result is a scar to be sure, but a soft, pliable one that is largely devoid of pigment if the entire procedure has been skillfully and effectively done (Figs. 5-11). This technique of removal of tattoos is particularly effective on large tattoos.

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FIGURE 5. The beginning of removal of a tattoo by dermabrasion and applications of tannic acid and silver nitrate. The solution of tannic acid is shown being applied to the site of the tattoo.



FIGURE 6. A very light dermabrasion has been performed after the application of the solution of tannic acid as pictured in Fig. 5.



FIGURE 7. A second application of the solution of tannic acid is shown after the light dermabrasion pictured in Fig. 6.



FIGURE 8. The next step of the procedure, a second dermabrasion with the frauze revolving very slowly, is shown on another tattoo on the patient of Fig. 5. A froth of tannic acid and abraded skin is forming.



FIGURE 9. The application of a solution of silver nitrate to the condition pictured in Fig. 8 is shown. Precipitation and development of an eschar begins at once.



FIGURE 10. The clinical appearance of a tattoo on the arm of a Marine who desired its removal.



FIGURE 11. The clinical appearance of the removal of the tattoo pictured in Fig. 10 after a procedure like that of Figs. 5-9.



FIGURE 12. Clinical appearance of a tattoo readied for salabrasion. Some hairs have been shaved off. (Figs. 12-14 reproduced with permission from Koerber, W. A., Jr., and Price, N. M. Salabrasion of tattoos. *Arch. Dermatol.* 114:884-888, 1978.)



FIGURE 13. A glistening erosion has been induced by rubbing table salt into the tattoo pictured in Fig. 12.



FIGURE 14. The excellent eventual result of salabrasion of the tattoo pictured in Fig. 12.

## SALABRASION (NORMAN PRICE, M.D.)

The use of sodium chloride, common table salt, to remove tattoos goes back to ancient times. Aetius, a Greek physician, in A.D. 543 is said to have applied an "irritating substance" to tattoos for several days and then rubbed sodium chloride into the site.<sup>1</sup> Klövekorn, a German physician, in 1935 revived the method<sup>2</sup> and in recent times, Crittenden<sup>3</sup> in 1971 and Manchester<sup>4,5</sup> in 1973 and 1974 reported experiences with salabrasion.

Dr. Walter Koerber and I in 1978 reported our experiences and results in 26 cases of removal of tattoos by salabrasion.<sup>6</sup> We found that the best method is to shave, if necessary, the site of the tattoo of hair, cleanse with povidone iodine, anesthetize, and rub in crystalline sodium chloride with slightly moistened gauze until a glistening erosion is achieved. The procedure is either stopped then or more salt is applied under a dressing for 24 hours. Best results in most cases were obtained by removing the salt immediately after salabrasion. Good to excellent results were achieved by us (Figs. 12-14). However, complications do occur with salabrasion, just as with any tattoo removal technique. One such example is that of a hypertrophic scar (Fig. 15).

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## CRYOSURGERY (NORMAN GOLDSTEIN, M.D.)

Freezing with liquid nitrogen is mentioned because cryosurgery is so much in vogue now. Destruction of tissue by congelation is not much different in end result from that caused by thermal combustion or caustic chemicals. When tissue dies for any reason, it is sloughed off if reparative processes are equal to the task. The conventional method of cryosurgery, however, is not satisfactory, except possibly for the smallest of tattoos. For large tattoos, too many treatments over months or years are required to attain, at best, indifferent results. It is not like the situation in

treating malignancies by cryosurgery. Malignant lesions suitable for cryosurgery are generally of manageable size and shape; their cellularity is more easily damaged by cold than is fibrous tissue in which tattoo pigments are lodged; cosmesis is not the principal concern in them; and repair is better.

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## DERMABRASION (NORMAN GOLDSTEIN, M.D., AND ROGER I. CEILLEY, M.D.)

There are several ways of using conventional dermabrasion to remove tattoos.<sup>1,2</sup> The simplest way is to abrade vigorously and deeply enough into reticular dermis so that pigments are reached and brushed away or will come away in the slough and crust of healing by secondary intention (Figs. 16-23). A more conservative way is to abrade superficially into the papillary dermis and then apply the solutions of tannic acid and silver nitrate as in Variot's method.<sup>3</sup> In this way, although the entire epidermis is removed, enough viable elements of adnexa remain to act as points of regeneration of new epidermis much in the manner of Variot's original method and ordinary dermabrasion for scars of acne (Figs. 22-23). Figure 24 depicts a poor cosmetic result following dermabrasion. Another conservative way is again to abrade superficially and then, instead of applying chemical caustics, to curette the pigmented area lightly and to tediously pick out exposed granules of pigments with a fine tweezers under direct vision,<sup>4</sup> perhaps aided by a magnifying loupe.

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FIGURE 15. A keloid as a complication of a salabrasion. (Courtesy of J. Levy, M.D.)



FIGURE 16. The healing of a dermabraded tattoo. Pigment is detectable in the crumbling crust.



FIGURE 17. A crude tattoo on the forehead of a 27-year-old woman who was a member of a religious cult.



FIGURE 18. The appearance of the patient pictured in Fig. 17 after dermabrasion.



FIGURE 19. The appearance of the patient pictured in Figs. 17 and 18 after complete healing.





FIGURE 20. An accidental tattoo on the face of a boy incurred in a gunshot explosion. (Courtesy of J. Kestel, M.D.)



FIGURE 21. The appearance of the patient pictured in Fig. 20 after dermabrasion and complete healing. (Courtesy of J. Kestel, M.D.)



FIGURE 22. A tattoo readied for removal by superficial dermabrasion. (Courtesy of W. Clabaugh, M.D.)



FIGURE 23. The appearance of the lower half of the tattoo pictured in Fig. 22 after dermabrasion and healing. (Courtesy of W. Clabaugh, M.D.)



FIGURE 24. A keloid following dermabrasion of a tattoo.

FIGURE 25. The spread scar resulting from removal of the club of a tattoo of the four suits of playing cards. The excision across the lines of cleavage of the skin on an arm may account for the spread.



FIGURE 26. A tattoo suprapubically placed on a 25-year-old woman who desired its removal.



FIGURE 27. The tattoo pictured in Fig. 26 being marked out with methylene blue preliminary to excision.



FIGURE 28. Placement of deep subcuticular sutures in the excision of the tattoo pictured in Fig. 26.



FIGURE 29. Completion of the excision of the tattoo pictured in Fig. 26 by an over-and-over, continuous suture knotted at each end.



FIGURE 30. Clinical appearance of a patient with tattooed eyebrows and a tattooed dot between the glabellae.



FIGURE 31. Excision of the tattooed eyebrow on the left side of the patient pictured in Fig. 30. The excised tattooed skin is shown lying above the gaping wound.



FIGURE 32. The excision of both tattooed eyebrows of the patient pictured in Fig. 30 is shown with closure by Steri-strips<sup>®</sup>.



FIGURE 33. Clinical appearance of the patient pictured in Fig. 30 three weeks after excision of both tattooed eyebrows and the dot between the glabellae. Some hairs are reappearing.



FIGURE 34. A tattoo in process of removal in stages. The result thus far is not good.



FIGURE 35. Clinical appearance of a tattoo that was planned to be removed with a dermatome. (Courtesy of K. Kubo, M.D.)



FIGURE 36. Clinical appearance of the excellent cosmetic result achieved in removing the tattoo pictured in Fig. 35 with a dermatome. (Courtesy of K. Kubo, M.D.)

**THERMAL CAUTERY BY FULGURATION OR LASER (LEON GOLDMAN, M.D.)**

Thermal cautery by any means like laying on of a glowing branding or soldering iron or sparking with an electrical instrument is as crude as daubing with powerful chemical caustics and about as effective, but as unsatisfactory in scar. Cautery by laser is somewhat better in that bursts of destructive heat may be more delicately directed at sites of concentrations of pigment while interspersed unpigmented areas of tattoos are spared. In skilled hands and with proper elaborate apparatus, reasonable results may be achieved with lasers in tattoos in which pigments had been introduced superficially in the dermis. Deeply imbedded pigment requires impacts of electromagnetic energy from lasers of degrees that are as destructive as thermal or chemical cautery. The theory of lasers, the instruments available at present, their special usefulness for different conditions, and the details of their operation are to be found in references 1-6.

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**CONVENTIONAL SURGERY (VICTOR HAY-ROE, M.D., AND TIMOTHY A. MILLER, M.D.)**

Small tattoos that lend themselves to simple elliptical excision because they are small enough or in sites that lend themselves to scars that can be concealed in lines of cleavage or natural wrinkles of the skin are not problems (Figs. 25-33). Larger tattoos may be managed by serial excisions in two or more stages (Fig. 34). Removal by a dermatome set at proper depth as for taking a donor graft is feasible in some cases (Figs. 35 and 36). Finally, very large tattoos may require excisions and resurfacing by grafts, "plasties" of various alphabetical character, or arrangements of flaps. The technical details of one such method of removal of tattoos, namely, split-thickness tangential excision, may be found elsewhere in the literature.<sup>1</sup> The author states that this method of removal is fairly simple in technique and may be performed on an out-patient basis.

**REFERENCE**

1. Wheeler, E. S., and Miller, T. A. Tattoo removal by split thickness tangential excision. *West. J. Med.* 124:272-275, 1976.

## IX. Suits for Malpractice Based on Alleged Unsightly Scars Resulting from Removal of Tattoos

MURRAY C. ZIMMERMAN, M.D.

SUITS FOR MALPRACTICE based on alleged unsightly scars resulting from removal of tattoos are common. Even having tattooed patients sign most detailed, graphically illustrated, and exactly descriptive "informed consents" to operations and their inevitable scars does not seem to squelch excessive litigiousness, although it may help win suits. But most suits of this type are not tried; they are nuisances and are in the main settled out of court for a paltry few, usually about three, thousand dollars. Juries used to be notoriously unsympathetic about poor cosmetic results from sought-for cosmetic procedures, but that commendable attitude is now changing, instance the award of over one-half million dollars recently given for a skewed belly button.

I have a perfect solution to the threat of incurring suits for alleged unsightly scars resulting from removal of tattoos. That perfect solution is: Don't undertake removal of tattoos. My reason for advising this negative course is that too many tattooed persons are hostile people, hostile to themselves and to the world at large. Such persons are self-destructive and untrustworthy. No matter how rationally things are explained to them, one never knows how they will react in the long run.

There are times, however, when one has to or is seduced to undertake removal of tattoos. For example, psychiatric advice may command it or an unfortunate accident, not deliberate motivation, may have been the cause of an ugly tattoo that has to be removed. What then? In such cases, let it be proclaimed and made known to all and sundry (as the lawyers might say) that a good result in terms of scars is not to be expected, only degrees of bad scarring. With this basic tenet understood, here are some more rules to guard against frivolous or unjustified suits.

1. Do, indeed, explain to the patient that a scar will result, a bad scar, a scar still likely to bear some pig-

ment, a scar that may be temporarily (for a year or two) hypertrophic or permanently keloidal, a scar as large or larger than the tattoo and perhaps still in its design or outline. Make it discouraging. If, after all of that, the patient still wishes removal of the tattoo, have him sign before witnesses (your office personnel) a tightly written statement that he has been informed in great detail and consents freely with full understanding.

2. Forced to remove a tattoo, do but a small part by whatever of the still poor techniques that have been devised and recommended to date. Then make the patient wait until he can judge how bad the ultimate scar is going to be. If he continues to insist on complete removal, have him sign another statement to the effect that he has seen a bit of the evil and craves all of it completely. All of this will not prevent suits, but will help to win them.

I will end my pessimistic and somewhat cynical opinions on removal of tattoos by recounting just one relevant anecdote.

I recall a case that occurred some 20 years ago. A young woman had a large tattoo removed from a thigh and the lower abdomen. It was confidently and competently done, but, of course, a scar resulted. It then happened that shortly afterward the young woman married a young man who was completing studies in a law school. As soon as the husband passed his bar examinations, he had a ready case at home, in his bedroom to be precise, and promptly sued the dermatologist who removed his wife's tattoo. The suit was based on claims that informed consent had not been obtained and that the plaintiff had not been told a scar would result. It did not matter to both the plaintiff and her attorney husband that both claims were untrue. The issue came to trial before a jury which was treated to a histrionic depiction of the defendant doctor as an incompetent, heartless wretch. When it came to the turn of the defense to present its side of the case, the plaintiff suddenly showed signs of distress when she saw projection apparatus being set up. She tugged

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at her husband's sleeve and whispered something in his ear. She had forgotten that the defendant had taken numerous color photographs of her tattoo before he undertook the surgery. Her attorney husband entered vociferous objections to the showing of such intimate photographs of his demure, now hysterical, wife. The judge, however, ruled that it was reasonable for the defense to show them and compare the before and after events. The show went on. The pictures showed a snake tattooed from a start on a thigh, winding up and around the pubic area until its head entered the vulva. It woke and shook up the jury, somnolent after noon

recess for lunch. It was better than a reconstruction of the fall of Adam after his seduction by Eve and the Serpent in the Garden of Eden. When that simon-pure attorney husband saw what had formerly gone on in his wife's nether world, he went into a rage and bashed her with his briefcase. She countered with a sharp right to his jaw. Court attendants had to separate the new contestants. The judge pounded for order in the court. The uproar quelled, the judge put over the case to be continued. The plaintiff and her attorney husband were never heard from again.

## X. Laws and Regulations Relating to Tattoos

NORMAN GOLDSTEIN, M.D., F.A.C.P.

"Ye shall not make any cuttings in your flesh for the dead, nor print any marks upon you." (*Leviticus XIX:28*) Moses forbade tattooing because it was idolatry. This Mosaic law does seem to have been obeyed by his followers throughout the centuries.

Despite biblical injunctions, despite decrees by the Roman Emperor Constantine in ca A.D. 300, Pope Hadrian in A.D. 787, Emperor Meiji of Japan in 1868,

national laws such as that of the French in 1869, despite more recent laws against or limiting tattoos for reasons of public health, the practice persists to this day and probably will continue with ups and downs in popularity depending on the fickleness of fashion and vagaries of culture, whether legal or not.

Following is a tabulation of current statutes relating to tattoos in the United States.

Laws Relating to Tattooing in the United States

States (& Cities)	State statute	Local ordinances	Form of Law		Remarks	
			Prohibits entirely	Prohibits for minors		Provides standards or inspection
Alabama	No	No				
Alaska	No	No				
Arizona Phoenix	No	Yes		Yes		
Arkansas	No	No				
California Long Beach Oceanside San Diego San Francisco	Yes	Yes		Yes	Yes Yes Yes Yes	The California penal code states that it is unlawful to tattoo persons under age 18.
Colorado	No	No				
Connecticut	Yes	No	Yes			There are said to be no tattoo parlors in Connecticut today.
Delaware	No	No				
District of Columbia	No	No				The one tattoo parlor in D.C. is "regularly inspected for sanitary practices" even though there is no law about tattooing.
Florida	Yes	No	Yes (see Remark)			Except by a physician or dentist or a person under his direction.
Georgia	No	No				
Hawaii	Yes	No			Yes	
Idaho	No	No				

(Continued)

## Laws Relating to Tattooing in the United States (Continued)

States (& Cities)	State statute	Local ordinances	Form of Law			Remarks
			Prohibits entirely	Prohibits for minors	Provides standards or inspection	
Illinois	Yes	No		Yes		
Indiana	No	No				
Iowa	No	No				
Kansas (Model ordinance)	No	Yes (see Remark)	Yes			Kansas has a model "fill-in-the-blanks" city ordinance; it was not stated in which (if any) cities this is in effect.
Kentucky Hopkinsville	No	Yes			Yes	Business or permit fee required.
Louisiana	No	No				
Maine	Yes	No		Yes	Yes	
Maryland Baltimore	No	Yes		Yes	Yes	
Massachusetts	Yes	No	Yes			
Michigan	No	No				
Mississippi	No	No				
Missouri	No	No				
Montana	No	No				There are rules governing tattooing race horses, but not people.
Nebraska	No	No				
New Jersey Camden	No	Yes		Yes	Yes	Local municipalities are encouraged to write their own ordinances and inspect tattoo establishments under their jurisdictions.
New Mexico Albuquerque Las Cruces Sante Fe	No	Yes	Yes	Yes	Yes	Occupational permit required.
New York New York City	No	Yes	Yes			
North Carolina	Yes	No		Yes		Attempt to limit the practice to physicians was defeated in 1977.
Ohio Cincinnati	No	No No				
Oklahoma	Yes	No	Yes			
Oregon Portland	No	Yes		Yes	Yes	
Pennsylvania		No	No			
Rhode Island	No	No				
South Carolina	Yes	No	Yes			
South Dakota	No	No				
Tennessee	No	No				
Texas	No	No				
Utah	No	No				
Vermont	Yes	No	Yes			



## Laws Relating to Tattooing in the United States (Continued)

States (& Cities)	State statute	Local ordinances	Form of Law			Remarks
			Prohibits entirely	Prohibits for minors	Provides standards or inspection	
Virginia	No	Yes				
Chesapeake					Yes	License fee \$1,000 required in Chesapeake.
Hampton			Yes			
Newport News			Yes			
Norfolk			Yes			
Portsmouth			Yes			
Virginia Beach			Yes			
Washington	No	Yes				
Seattle					Yes	
Tacoma					Yes	
West Virginia	No	No				
Wisconsin	No	No				
Wyoming	No	No				
<b>Addendum</b>						
Guam	No	No				
Canada		Yes				
Toronto					Yes	

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