

Poultry Press

SPECIAL REPORT: EMUS & OSTRICHES

Nowhere To Hide

by Karen Davis, PhD

*Promoting the
compassionate
and respectful
treatment of
domestic fowl.*

"Through the vast expanse of red desert dunes, overlooked by the jagged face of a mountain range, a posse of four ostriches lopes purposefully through the dry and shimmering heat. Where their purpose is going to take them, no one knows--there is no water in this part of the country and precious little food--and yet this, the largest of flightless birds, thrives here. From the air they look like mysterious black blobs, but as the small aircraft descends, they take fright and dash forward, their long necks and elegantly striding legs giving them away."

"Ostriches in Namibia," **International Hatchery Practice**,
(Vol. 6, No. 1, 1991)

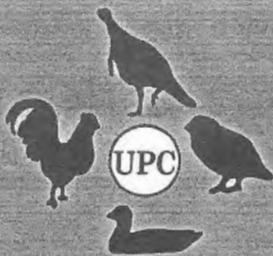
A new meat industry threatens on the horizon. If breeders and others have their way, the ostrich and the emu, the world's two largest birds, will become "the other bird meat" of the 1990s. These exotic fowl, known mainly to the public as exhibits at the zoo, are being promoted to consumers as looking and tasting like beef, but with less fat and cholesterol and fewer calories than either beef or poultry. Cattle ranchers, small farmers, would-be agriculturalists, retirees, banks and other investors are being urged to regard the farming of these birds as potentially very profitable, even more than cattle, with

minimum land, food and facility requirements.

A Texas veterinarian predicts that the United States "will soon lead the world in producing ostrich chicks." Ostriches have been called the next U.S. cash crop for a ready meat market in Europe. The American Emu Association says that emu meat "could well be a main meat of the future." In Britain, the ostrich and the emu are being added to the growing list of new animal species being raised for the table, along with the deer and the wild boar.

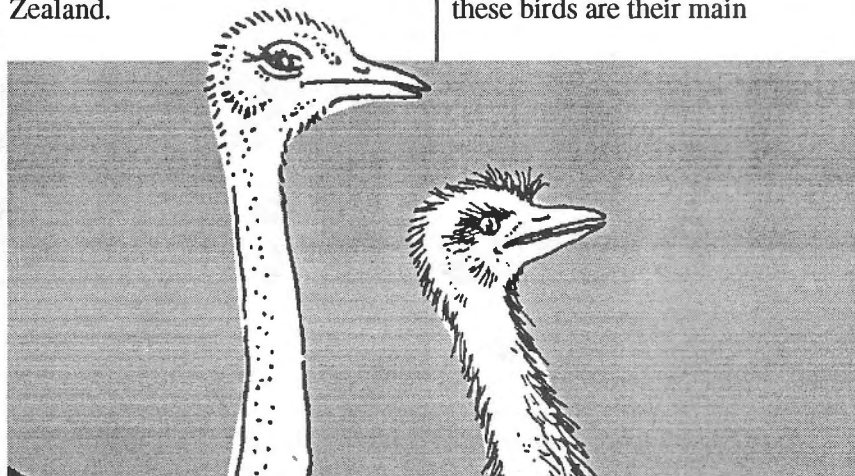
Ostriches and emus are birds with a difference. They belong to the family of flightless

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fowl known as ratites, or running birds, including, in descending order according to size, the ostrich, emu, rhea, cassowary, and kiwi. Ratites occupy the southern hemisphere: the ostrich is a native of Africa, the emu and cassowary of Australia, the rhea of South America, and the kiwi of New Zealand.



Jazelle Lieske

The name "ratite" comes from the Latin word "rates," meaning "without a keel." It refers to the shape of the breast bone. Ratites have a convex breast bone, without the keel-like ridge to which bilateral flight muscles are attached in flying birds.

Though small, their wings are not useless. They help to balance the birds while running, turning, and swerving. An ostrich acting in self-defense will extend first one wing and then the other in repeated, threatening motions resembling those of a boxer. In a charge, ostriches fully extend their wings, creating an awesome spectacle. Ostriches use their wings to cool themselves, moving them slowly backwards and forwards to direct a cooling breeze over their featherless thighs and sides while standing against the wind. Ostriches and emus are strong, fast runners. They can run up

to 40 miles an hour, emus covering 9 feet, ostriches 25 feet in a stride. Their toes--emus and other flightless fowl have three and ostriches have two, compared to the four toes of flying birds--are made for speed, as fewer toes mean less ground contact, adding more speed.

The long, powerful legs of these birds are their main

weapon of defense, enabling them to flee or fight. Ratites fight with kicks, kicking from the knees (technically the ankles) forward and down, instead of backward.

Peaceful when left alone, ratites become very aggressive when they or their families are threatened. Both parents are active in defending the nest and chicks. Observing a potential enemy, an ostrich father will cause a distraction by "fleeing" in another direction, pretending to be sick or injured. With limp wings he sinks lower and lower to the ground, swaying to and fro in his "struggle" to escape, finally "collapsing." He repeats his act, just beyond reach of the intruder, until satisfied that his charges are safe, whereupon he "recovers" and lightly dashes away. The female ostrich will similarly playact to defend her nest, but if she is already brood-

ing while the male stages confusion, she will stretch out her neck and head on the ground in camouflage with the surrounding scrub and stones. If all these stratagems fail, the male will lash out furiously at the enemy with his deadly, karate-like kicks, large foot and gouging toenail.

Ratites are the oldest living birds on earth. Regarded with other birds as reptilian in origin, they are believed to have been separated from the main line of avian evolution since at least the Middle Cretaceous period, 80 to 90 million years ago. Twenty to sixty million years ago, ostriches ranged the Mediterranean Sea area in the West, China in the East, and Mongolia in the North, migrating across Africa about a million years ago. Large ostrich herds roamed the Western Cape of Africa when the Dutch landed in the 17th century. Egyptian cave art and other records trace the hunting, and perhaps farming, of ostriches to antiquity. The Arabs and Bushmen hunted the birds for sport, the Bushmen with poison arrows. Ostriches have traditionally been hunted in Namibia (South West Africa) for sport, and for the diamonds sometimes found in their gizzards, and because sheep and cattle farmers regard them as vermin for tearing down fences.

Greek and Roman generals decorated their helmets with ostrich feathers. Egyptian pharaohs and their families bedecked themselves with ostrich headdresses and fans. The craving of Elizabeth 1 of England and Marie Antoinette of France for ostrich feathers as fashion items created an international feather trade out of North Africa and Arabia, and later South Africa, that lasted

until World War One. By the mid-19th century, the fashion had so devastated wild ostrich herds that ostrich farming was established, helped by the introduction into South Africa of wire fencing, the farming of alfalfa (lucerne) to feed the birds, and mechanical ostrich-egg incubators. The industry boomed between 1900 and 1914. In 1913, ostrich plumes were the fourth largest South African export after gold, diamonds, and wool. Rich South African feather barons built fancy farm houses and "ostrich-feather palaces" during this period.

The United States was involved. An October 1906 article on ostrich farming in the United States in *The National Geographic Magazine* says, "Ostrich farming in the United States, while still in its infancy, is becoming a profitable industry in Arizona and California, and it is believed that in a few years we shall not be obliged to import ostrich feathers from abroad." A souvenir catalogue of the Cawston Ostrich Farm in South Pasadena California, copyrighted 1902, credits Edwin Cawston, an American trader, with introducing ostrich farming to America "by going direct to Africa . . . and securing, after great difficulty, a flock of fifty birds which were brought in a chartered ship to Galveston [Texas] and from thence to California."

Ostrich plumes went out of style during World War I, partly as a result of the international campaign against the cruel trade. Ostrich farming lagged until 1945, when the government-supported Klein Karoo Agricultural Co-operative was formed in South Africa. It added meat and skin to

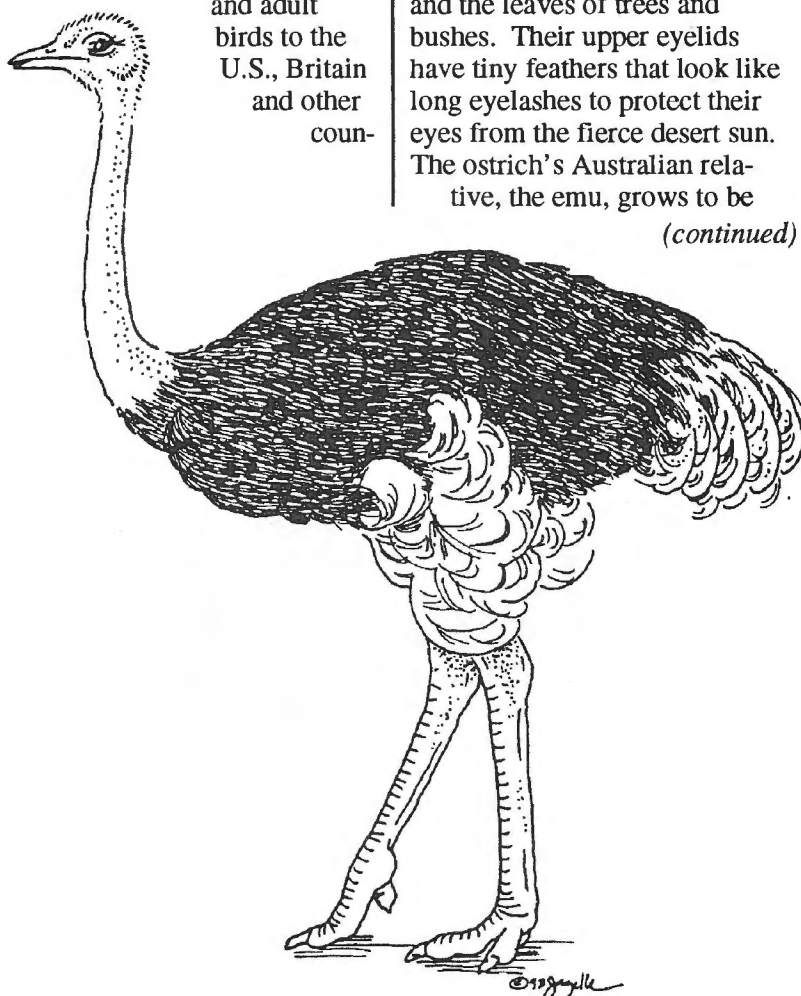
feathers, building the world's first ostrich slaughterhouse in 1963-64. A leather tannery followed in 1969-70, and, in 1980-81, a new slaughterhouse was built to supply the demand for ostrich meat abroad. Both operations were extended in 1989. In 1992, 120,000 ostriches were slaughtered in South Africa, with 150,000 projected for 1993.

South Africa does not export fertile ostriches or eggs, a policy that, together with U.S. sanctions against South Africa in 1986, blocking import of all plant and animal products, prompted the current effort to establish ostrich farming in the United States. Namibia exports fertile eggs, chicks, and adult birds to the U.S., Britain and other coun-

tries. A 1989 USDA ban on the importation of ratites and fertile eggs into the United States, in order to control the import of exotic ticks feared by the cattle industry, was lifted in 1991. The majority of ostriches in the U.S.--estimated between 10,000 and 25,000--are derived from zoo stock. Many ostriches and other flightless fowl are traded at exotic animal auctions in the southern and western states to end up in game parks.

Adult ostriches grow to be seven to nine feet tall and weigh 200 to 350 pounds. They live to be 40 to 70 years old. Roaming the grasslands and deserts of Africa in small, scattered herds or alone, they live naturally on grass, berries, succulents, seeds, and the leaves of trees and bushes. Their upper eyelids have tiny feathers that look like long eyelashes to protect their eyes from the fierce desert sun. The ostrich's Australian relative, the emu, grows to be

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five or six feet tall and weighs between 110 to 140 pounds, with a lifespan of 25 to 30 years. The nomadic emu ranges widely into Australia's tropical forests and arid interior, thriving on a diet of shoots, seeds, fruits, and insects. When food is abundant, the emu stores a thick layer of fat beneath the skin which acts as a reserve when sustenance is scarce.

The Australian government used to pay people to kill emus. Thousands of emus were shot and bounties were placed on them for trampling sheep fences and eating crops. The government gladly exported them to zoos around the world. Emus imported into the United States from 1930 to 1950 are the basis on which breeders are trying to establish an emu meat industry in this country.

In recent years, the Australian government has adopted new policies in regard to the emu, including naming the native "pest" the national bird. About thirty years ago the government banned the export of live emus and started financing the study and gathering of wild emus in order to promote

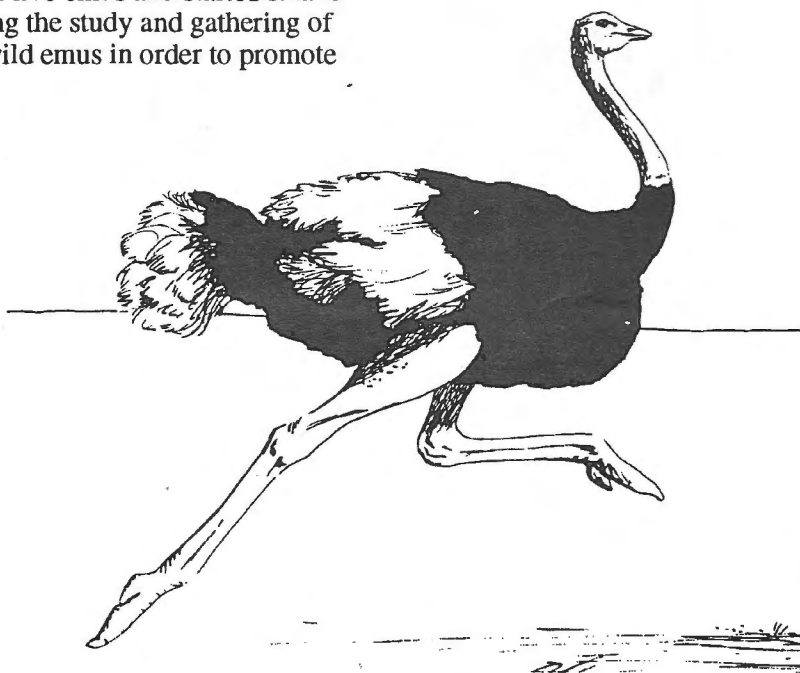
emu ranching by the Aborigines. These actions led the U.S. to start domestic operations. There are currently an estimated 40,000 emus in this country. Like ostrich "ranches," emu ranches are concentrated in Texas and scattered in other states such as Oklahoma and California. In Pennsylvania, some Amish farmers are reportedly raising emus. According to the American Emu Association in Dallas, the emu represents "a natural resource useful to an unprecedented standard."

Products include the "hyde" for upscale boots, luggage, and accessories; feathers for designer evening wear, vests, hats, and high-tech dusters; emu back oil for cosmetics and medications; egg shells and toenails for decorative and jewelry items; and meat, which the group says is "gaining acceptance in gourmet restaurants and is featured in heart healthy menus."

Similar claims are made by the American Ostrich Association in Fortworth, which "confidently believes the commercial potential of the ostrich industry, with a worldwide demand for its low-fat red meat, leather, feathers and other products [such as eyes for corneal research and human corneal transplants] makes it one of the more economically attractive agricultural investment in the United States and Canada."

Unlike chickens and turkeys, ostriches and emus have almost no breast muscle tissue; their "meat" comes mainly from the thigh. Ostrich feathers are manually obtained from the living bird by a combination of plucking, clipping, and "quilling." The body feathers of ostriches bred exclusively for feather production in Africa are plucked every seven to ten months. Wing plumes--as many as 50 at a time from the male--are cut about once a year. Plucking refers to pulling the whole feather, plume and quill, straight from the socket by hand. Feathers are plucked from the tail, wing coverts, and chests of adult birds and from the bodies of the 7 to 8 month old, and 14-month old, juvenile birds. The wing plumes of adult birds are clipped off with hedge clippers or pruning shears. The ostrich is restrained in a "plucking box," sometimes wearing a hood to render the bird blind and helpless, while feathers are cut approximately two inches above the socket. Closer cutting causes hemorrhage and feather regeneration damage, as blood vessels and nerves run through the center of the feather stopping near where the feather unfolds.

Quilling is the process of pulling out the quills that are



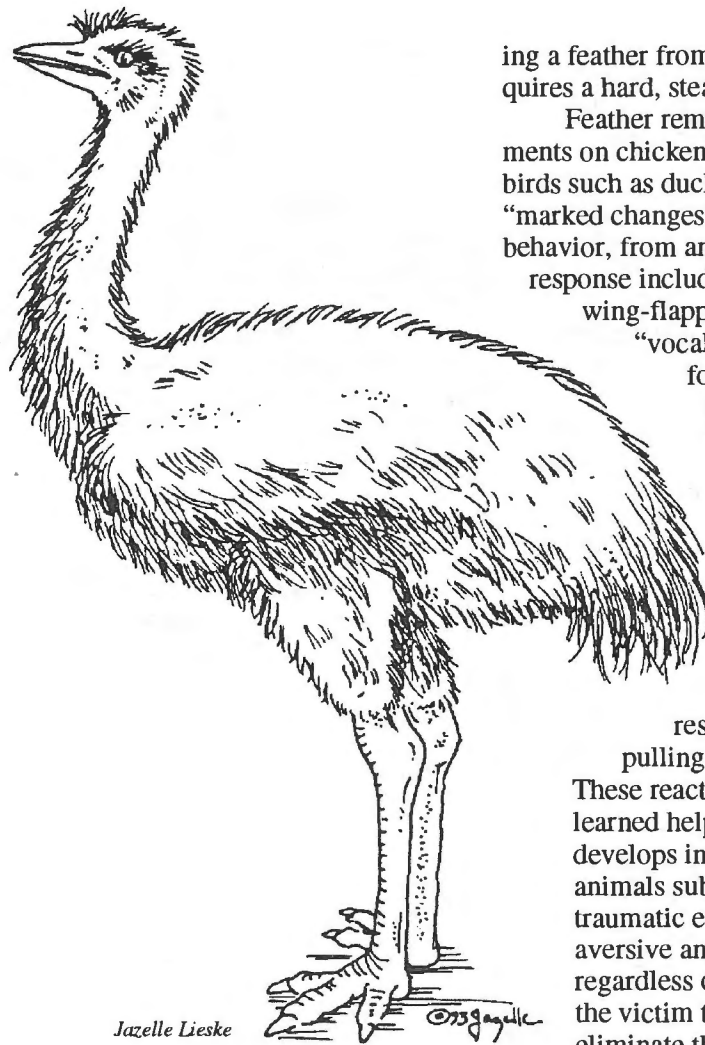
Anita Holzhausen

purposely left in the sockets of the bird at the time of clipping. This is done about two months later by hand, or with pliers. Quilling is used to avoid hemorrhage and to control the growth and commercial quality of the wing plumes. Workers are advised to coat the freshly quilled skin with vaseline, to protect the open socket from exposure, and soften the skin for leather.

All these procedures are represented by the ostrich industry as "painless." Gene Pfeiffer, president of Southwind Ostrich Ranch, Inc. in Indiana and past president of the American Ostrich

Association, told me that pulling feathers from a young ostrich causes the bird "no pain." The main drawback of defeathering is its labor-intensiveness, he believes. An ostrich farming manual published in Zimbabwe in 1992 says that years ago there were many "anti-feather bodies" throughout the world who mistakenly regarded feather plucking as cruel and painful.

A hint of the truth can be seen in a Southwind advertisement promoting the African Black, a variety of ostrich specially bred for feathers in South Africa: "Birds must stand calmly as feathers are pulled. . . . Those birds that accepted the process survived, those that were a problem ended up in the slaughterhouse." A South African ostrich manual states, though, that even so-called "tame" ostriches are "unpredictable," "particularly ungovernable," and "intractable" by nature. One can envision the



violence that is used to subdue the "intractable" bird who cannot endure to be plucked.

Just as the poultry industry misleads the public to think that debeaking chickens and turkeys is as painless as trimming one's fingernails, so the ostrich and emu industry would have us believe that plucking feathers is as painless as cutting one's hair. In fact, the feather of a bird is firmly held in a follicle, the wall of which is richly supplied with sensory fibers and nerves in the papilla, pulp, and feather muscles. Even clipping the feathers above the nerve endings pulls on the sensitive skin and muscle tissue to which the feathers are attached. Remov-

ing a feather from a bird requires a hard, steady pull.

Feather removal experiments on chickens (and other birds such as ducks) cause "marked changes" in the bird's behavior, from an alert, agitated response including jumping, wing-flapping, and "vocalizations"

following the initial removals, to periods of crouching immobility with the head drawn into the body and eyes partially or fully closed as the

researcher's pulling continues.

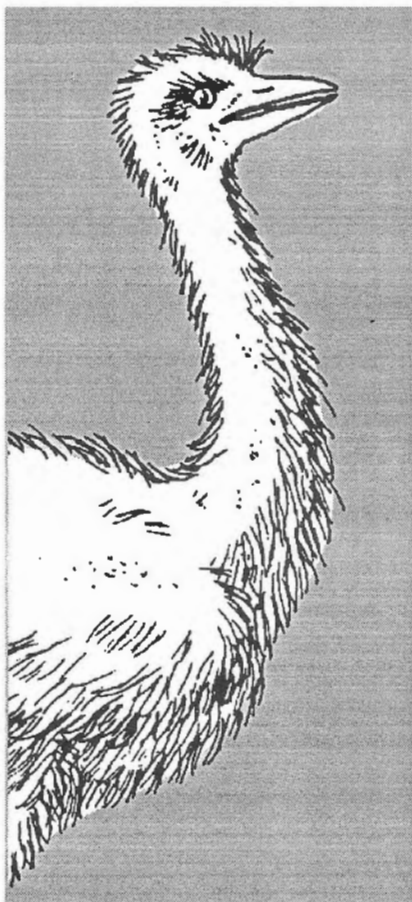
These reactions exhibit the learned helplessness that develops in birds and other animals subjected to traumatic events that are aversive and that continue regardless of attempts by the victim to reduce or eliminate them.

At present, the main product from ostriches is the "hyde," which is used to make cowboy boots, luggage, and accessories, with feathers and meat as byproducts. These products are related. Plucking increases the commercial value of the skin by making the feather follicle pattern more pronounced. Producers planning to slaughter birds at the recommended slaughter age of twelve to fourteen months old for meat are advised to pluck the birds at seven months old for maximum profit.

An article in the Autumn 1993 issue of *Agscene* by Compassion In World Farming summarizes a report to its members by the Australian

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Ostrich Association, (Nov. 12, 1992), on defeathering prior to slaughter. According to the report, ten farmed ostriches were slaughtered in a commercial trial at a livestock slaughterhouse for cattle and sheep. Apparently, the most important part of preparing the birds for killing was defeathering them. First their feathers were clipped off. Then their bodies were shaved using a pair of electric clippers. The birds were then taken to a stunning pen and shot with a captive bolt pistol. Following very pronounced muscular convulsions that lasted for three minutes, they were shackled. The ostriches were defeathered when alive following work in the United States indicating hygiene problems and difficulty keeping the feathers clean for the feather trade.



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John Crawford, managing director of the Ostrich/Ratite Research Foundation in Oklahoma told me that the feathers "have to be removed without contaminating the meat." An ostrich slaughterer in Colorado explained to me that the feathers are a problem in this large bird that is "a combination of red meat and poultry." The bird must be made quiet for slaughter. He said that he uses either a stungun or "an electric knife applied to the leg point, then to the top of the head to eliminate the death struggle," while retaining the life and pulse prior to shackling. A California slaughterer told Virginia Handley of The Fund for Animals that it took him two hours of violent struggle to kill a single ostrich.

Ostrich and emu breeders in the United States are eager to start slaughtering the birds. Currently, the U.S. market consists of keeping a set number of breeding pairs and selling their eggs or chicks to other breeders at prices starting at \$1,000, with full-grown breeding pairs selling for \$35,000 and up. To date, there are not enough birds or buyers to commence full-scale slaughter operations in the United States. Only sick and injured birds with twisted legs, crooked beaks and other infirmities are being slaughtered for the gourmet diner. In Europe, ostrich farming has emerged in the past two or three years, with a few farms in Continental Europe. In Britain, the first commercial ostrich farm, Hangland Farm, was started in 1990. There are about twenty ostrich farms in the UK and at least one nucleus emu breeding flock purchased from a zoo.

Breeders are funding research and inviting research proposals. In the United States, The Ostrich/Ratite Research Foundation promotes and funds projects on production of ratites. In 1992, the American Ostrich Association funded The Ostrich Meat Industry Development Project at Texas A & M University. Eighteen ostriches between 10 and 24 months old were transported from Texas, Louisiana, Oklahoma, and Indiana to H & H Foods, Inc., a beef cattle slaughter facility in Mercedes, Texas. They were shackled by one leg following electrical stunning, hoisted, and bled by severance of the heart, carotid artery, and jugular vein through the chest. The birds were analyzed for processing efficiency, foodborne pathogens, nutritional content, and palatability. Recovery of pathogenic *Salmonella* indicated that "the same precautions must be taken on this product as would be taken with raw food of other animal origin." Off-flavors in the meat indicated the need for more research on the impact of ostrich diet and age on taste appeal.

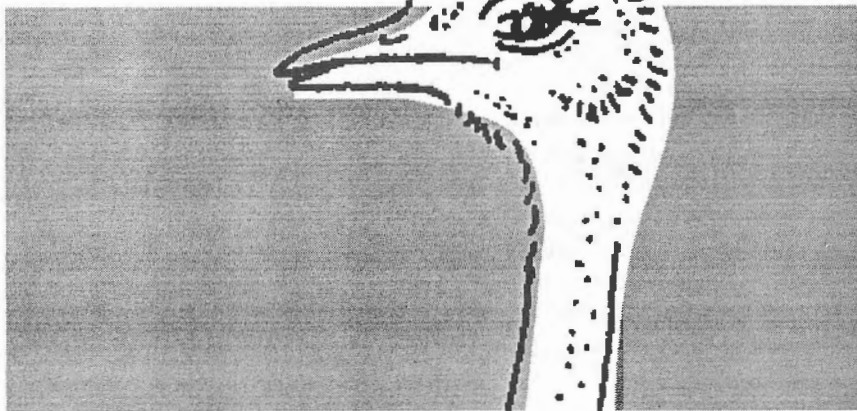
At state and federal levels, action is being taken to change the status of ratites from exotic fowl to domesticated fowl or poultry. In California, a bill was defeated in 1991 that would have extended the legal definition of poultry to include the "domestic ostrich." However, laws passed in 1993 in New Mexico, Minnesota, and Virginia declare ratites "livestock." A 1993 Texas law defines ratites as exotic fowl while extending to owners the same tax, theft, and ownership privileges granted to livestock owners, including a seat on the Texas Animal Health Commission.

At the federal level, the U. S. Department of Agriculture's Food Safety and Inspection Service was petitioned in 1993 to redefine ratites and certain other exotic birds as domesticated fowl or poultry amenable to federal inspection under the Poultry Products Inspection Act (PPIA). Approval of this petition would shift the current cost of voluntary state or federal inspection, borne by the producer (slaughterer), to mandatory federal inspection supported by taxpayers. Federal inspection would not only pass the burden of inspection on to the public; it would provide the coveted USDA seal of approval.

If ratites are defined as domesticated fowl or poultry under the PPIA, they will be excluded from federal humane slaughter coverage. The 1958/1978 Humane Methods of Slaughter Act excludes birds, and the PPIA does not have a humane slaughter provision. The current effort to amend the PPIA to require humane slaughter coverage for poultry is actively opposed by the poultry industry, whose most widely used method of electrical "stunning" is designed to ensure a "quiet carcass" (paralysis), rather than unconsciousness and release from pain.

The idea of introducing another class of birds into a system that does not extend basic welfare protection to birds is indefensible. To date, in the United States, there are no federal welfare laws regulating the treatment of poultry at any stage of operation. Ostriches and emus should not be subjected to this brutal and unregulated industry which already kills more than seven billion birds each year.

Ostriches and emus are



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intended for wide open spaces, where their grace and intelligence can be exercised. Their long necks and excellent sight enable them to survey the land for miles in all directions at once. They need to keep moving. Wild ostrich chicks and their parents cover 15 to 20 miles a day. Over 60 percent of an ostrich's daily activity is devoted to walking. Confinement to an acre or less of land devoid of stimulating activity or interest causes these birds to develop leg problems. Like broiler chickens and turkeys, they develop leg problems also as a result of being fed a diet excessively high in protein to force them to grow rapidly for slaughter. The ostrich is an herbivore and the emu, too, is mainly a plant eater. Under intensive farming for meat production, they will be forced to consume meat byproducts and other inappropriate foods. They will become one more dumping ground for agricultural waste products. They will suffer from leg deformities, digestive maladies, reproductive disorders, and transmissible diseases, such as avian influenza, similar to what chickens, turkeys, and ducks endure under similarly unsuitable conditions. Their problems have already begun to show.

Ostriches and emus display elaborate, well-developed courtship, nest-building, and chick rearing behaviors. During the mating season, the male ostrich, accompanied by three females, the senior member of whom hatches the eggs, leaves the group. The male ostrich performs a beautiful courtship dance for the female with outstretched wings, followed by majestic swaying and undulating of the wings and other exquisite gestures, to which she responds by lowering her head, opening and closing her beak, and languidly fluttering her wings. He painstakingly makes the nest, forming a hollow in the ground by balancing on his calloused chest while scratching out the nest with his toes. He takes turns with his mate sitting on the eggs, especially at night with his concealing black plumage, until the chicks are born six weeks later. Whichever parent is on duty when a chick is ready to hatch will help the chick out of the egg by carefully pecking the shell. Parents and chicks stay together as a family for ten or more months until the young birds are ready to fend for themselves.

Emu parents form a similarly active partnership,

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strutting and displaying their feathers, choosing one another and selecting and defending the nest area. The emu male helps gather twigs and leaves for the nest, and sits on the eggs (the shells of which are composed of opaque layers of deep green, Mediterranean blue, and an inner layer of white), fasting and abstaining from water until the chicks are born eight weeks later. Emu chicks make a whistling sound when they are close to hatching, communicating with each other and their parents from inside the egg, similar to chickens.

In being raised for meat, the integrity of the birds and their family life will be violated, and they will be subjected to the same mass production methods that are applied to other birds similarly regarded and used, including artificial insemination and incubation, separation of parents and offspring, and other degrading treatment. These long-lived birds will be slaughtered in their infancy as 12 to 15 month old chicks.

Ostriches in particular do not thrive under domestication. According to the **Journal of the American Veterinary Medical Association** (Sept. 1, 1993), "A major deterrent to the transition from breeding to livestock production is the huge death loss rate in ostrich chicks." Ostriches are "easily stressed." Chicks need "a lot of somatic [bodily] activity to stimulate yoke sac involution." Failure to absorb the yolk sac is a common problem in ostrich chicks related to poor husbandry, excessively rich diets, lack of exercise, and stress of handling. So eager are breeders to "cash" a chick that some crack open the eggs prematurely with pliers and drill holes in them.



Transportation is a serious problem. According to the American Ostrich Association, "Transportation is dangerous and stressful for both man and beast. Most injuries are related to activities of handling and transport." The AOA states that loading and hauling the birds makes them "unsettled and nervous," and asks readers to "think about what would happen to a bird standing on two legs if you slam on the breaks." They note the "danger of birds getting hurt on small openings and sharp edges" and of their being injured and killed from being loaded too tightly. Crowded ostriches will "often fight or hurt one another by pecking or stepping on each other." Subjecting these sensitive, easily stressed birds with their long thin necks and legs, and their large, fragile eyes, to transport is cruel and inhu-

mane. In addition to their unique problems, the birds will be deprived of food and water, hauled in all kinds of weather, often over long distances, across state lines, and forced to endure the traumatic truck vibrations that have been found to be so stressful to chickens going to slaughter. They will suffer from heat stress, damp weather, and terror.

It is sickening to contemplate the fate of the stately, intractable ostrich and the gentle, friendly, and curious emu at the hands of agribusiness. Those who see the ostrich and the emu only as a "bloody red slab of meat," to quote a breeder, defile the living beauty of these birds. Concerning the ostrich, it is said that "Especially in the early morning, a few birds in a group will suddenly receive a mystic, inaudible cue and begin to dance in circles on tip-toes, with outspread wings. Very soon the whole group will join spontaneously in the twirling dance [that] may be a primeval urge or merely an expression of the joy of being alive."

A myth dating from Biblical times suggests that ostriches hide their heads in the sand or a bush to make themselves invisible. Actually, when severely startled or in a moment of intense fear, ostriches feign death by collapsing to the ground in a crouching position, stretching their necks and heads forward along the ground. Even chicks simulate death when frightened, and an ostrich asleep looks dead. These arts are designed for a life in nature. Faced with the human predator, the ostrich and the emu will hide in vain. Unless we act now, the problem will not go away.

WHAT CAN I DO?

Please Join UPC's Public Education Campaign On Behalf Of Ostriches And Emus

- ◆ Use *Nowhere To Hide* to inform everyone you know about these interesting and dignified birds, and about the cruelty they face in being viewed as a source of meat, leather, feathers, and other products. Urge people to respect and protect ostriches and emus.
- ◆ Write letters to your local newspapers, radio and TV stations. Keep an eye on the Food, Business, and People sections of the paper that are likely to feature articles on emu and ostrich breeders and consumer trends.
- ◆ Send news clips with mailing addresses and publication dates to UPC so that we can join you in a letter-writing campaign.
- ◆ Monitor your state legislature. Oppose any bills that seek to reclassify ratites (ostriches, emus, and other flightless fowl) as poultry, domesticated fowl, or livestock. Let your representatives and state Department of Agriculture know how you feel, and why.

- ◆ Inform USDA that you do not want ratites reclassified as livestock, poultry, or domesticated fowl. Contact: **Director, Policy Office, Policy Evaluation and Planning Staff, Food Safety and Inspection Service, U.S. Department of Agriculture, Washington, DC 20250.**

- ◆ Tell restaurants and airlines that you do not want ostrich

or emu meat served. **QUANTAS AIRWAYS** recently announced plans to serve emu. Protest this use of emus, outlining your choice of other airlines that do not serve emu. Contact: **Customer Service Standards Manager, Quantas Airways, 360 Post Street, San Francisco, CA 94108.**



Picasso

REFERENCES

1. American Emu Association brochure. Dallas, TX.
2. A[merican] E[mu] A[ssociation] News. Aug.-Sept. 1993.
3. Benfield, Karen. "Poultry in Motion." *The Wall Street Journal*. Jan. 3, 1991.
4. Bioni, Gino and P. Dierks. "Forecasting the change of ostrich breeding to production." *Ostrich Report*, July 1993.
5. Brown, Robert. "Ostrich industry growth increases feed demand in U.S." *Feedstuffs*, Sept. 9, 1991.
6. "Call for research projects issued." *Ostrich Report*. Aug. 1992.
7. Carin Smith, "Research Roundup: Ostrich chick survival presents challenge." *Journal of the American Veterinary Medical Association*. Vol. 203, No. 5. Sept 1, 1993.
8. Crawford, John. Conversation with the author. Sept. 2, 1993.
9. Crawford, Melodye. "The Oldest Birds, The Newest Agribusiness." *Small Farm Today*. Aug. 1992.
10. Dawson, Terence and R. Herd. "Digestion In The Emu." *Comparative Biochemistry and Physiology*. Vol. 75A, No. 1. 1983.
11. Deeming, D.C. et al. "Observations on the commercial production of ostrich (*Struthio camelus*) in the United Kingdom: incubation." *The Veterinary Record*. June 12, 1993.
12. ---"Observations . . . rearing of chicks." *VR*. June 19, 1993.
13. "Farmed ostriches are defeathered before slaughter." *Agscene*. No. 112. Autumn 1993.
14. Gentle, M[ichael] and L. Hunter. "Physiological and behavioural responses associated with feather removal in *Gallus var domesticus*." *Research in Veterinary Science*. 1990. Vol. 50: 95-101.
15. Gentle, Michael. "Pain in Birds." *Animal Welfare*. 1992. Vol. 1: 235-47.
16. Haid, Joe. "Cawston Ostrich Farm . . . An American Beginning." *Ostrich (Ratite) Marketplace*. March 11, 1993.
17. ---Conversation with the author. Sept. 3, 1993.
18. Hallam, M.G. *The Topaz Introduction To Practical Ostrich Farming*. Harare, Zimbabwe: Superior Print and Package. 1992.
19. Handley, Virginia. "Bird exotic, not edible." *The Bakersfield Californian*. Sept. 22, 1991.
20. Hartmann, C.R. "Ostriches: The next U.S. cash crop." *D & B Reports*. Nov.-Dec. 1991.
21. Hicks, Karen. "Ostrich pediatric disorders." *Ostrich Report*. Aug. 1992.
22. Holtzhausen, Anita and M. Kotze. *The Ostrich*. Oudtshoorn, Republic of South Africa: C.P. Nel Museum. 1990.
23. Jeffrey, Joan. *Ostrich Production*. The Texas A & M University System.
24. ---*Emu Production*. The Texas A & M University System.
25. Kuenzel, Wayne. Conversation with the author on the electrical stunning of broiler chickens. Oct. 7, 1993.
26. "Ostrich breeders stick their necks out for a fledgling venture." *The Wall Street Journal*. March 15, 1990.
27. "Ostrich Farming Comes to Britain." *Agscene*. No. 102. Spring 1991.
28. "Ostrich Farming in the United States." *The National Geographic Magazine*. Vol. XVII, No. 10. Oct. 1906.
29. "Ostrich Meat Industry Development." *Ratite Marketplace*. Sept. 9, 1993.
30. *Ostrich Primer*. American Ostrich Association. Fortworth, TX.
31. "Ostriches in Namibia." *International Hatchery Practice*. Vol. 6, No. 1. 1991.
32. Otolski, Greg. "Region's farmers are finding big birds are big business." *The Courier-Journal* (Louisville, KY). June 20, 1993.
33. Parker, Mike. "Ostrich farming not a head in the sand operation." *Poultry World*. Jan. 1991.
34. Pfeiffer, Gene. Conversation with the author. Sept. 2, 1993.
35. "Proposed Rules" Determining the Amenability of Birds to Mandatory Federal Inspection." *Federal Register*. Vol. 58, No. 134. July 15, 1993.
36. Rosenbower, Laurie. "Adventure on the Ostrich Farm: Hauling Your Birds." *Ostrich Report*. Winter 1991-92.
37. Schumann, Bob. Conversation with the author. Sept. 9, 1993.
38. Sugarman, Carole. "Why Emu?" *Food*. *The Washington Post*. July 8, 1992.
39. Walpert, Bryan. "Birds of a feather make money together." *The Fairfax Express* (Virginia). September 29, 1993.
40. Yost, Paula. "Ostrich Entrepreneurs Stick Their Necks Out." *The Washington Post*. Aug. 6, 1989.

LETTER WRITING CAMPAIGN TO AIRLINES TO ENSURE VEGAN MEALS*

Please write letters requesting that each airline review their catering policies to ensure that vegetarians/vegans receive meals which have NO animal products (even in salad dressings!). Point out that serving meals acceptable for ethical vegetarians would also service customers seeking low-fat, low cholesterol, kosher, low calorie or even vegan fruit plates (most fruit plates include cottage cheese or yogurt currently).

Please address your letters to the customer service representatives at the following addresses:

Air Canada
Customer Relations
221 North LaSalle Street
Chicago, IL 60601

Alaska Airlines
Consumer Affairs
P.O. Box 68900
Seattle, WA 98168

America West Airlines
Customer Relations Department
4000 East Sky Harbor Boulevard
Phoenix, AZ 85034

American Airlines, Inc.
Consumer Relations
P.O. Box 619612; Mail Drop 2400
DFW Airport, TX 75261-9612
Attn: Ms. J.L. Ferguson

Canadian Airlines International
615 18th Street, SE
Calgary, Alberta T2E6J5
Canada

Continental Airlines
Customer Relations
3663 Sam Houston Texas Parkway
Suite 500
Houston, TX 77032

Delta Airlines, Inc.
Consumer Relations
Hartsfield-Atlanta Int'l Airport
Atlanta, GA 30320

Mid-West Express Airlines
Consumer Relations
4915 South Howell Avenue
Milwaukee, WI 53207

Northwest Airlines
Customer Relations; Mail # C5270
5101 NW Drive
Saint Paul, MN 55111-3034

Trans World Airlines
Director of Inflight Services
110 South Bedford Road
Mt. Kisco, NY 10549

U.S. Air/U.S. Air Express
Consumer Affairs
P.O. Box 1501
Winston-Salem, MA 27102-1501
Att: Deborah Thompson, Director

United Airlines
Consumer Affairs - EXOPW
P.O. Box 66100
Chicago, IL 60666

* Courtesy of United Poultry Concerns



SPECIAL REPORT: EMUS & OSTRICHES

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INSIDE

- **A Special Report
on Emus and
Ostriches**

Address Correction Requested

Wishing you and all creatures peace and goodwill in the New Year