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Large Animal Dermatology

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Large Animal Dermatology

Treatment of skin diseases is a vital part of a small animal practice. For the large animal practitioner, however, treatment of skin diseases is just a small part of his work. "Skin trouble in horses and livestock is often diagnosed incidentally because the animal is brought in for another reason and not for its lumps, bumps, or bald spots," said Dr. Kevin Shanley, assistant professor of dermatology at the University of Pennsylvania School of Veterinary Medicine. "Not much research has been devoted to large animal dermatology, but that is changing. It is an emerging field. Here we are trying to focus on it more and have established a bimonthly clinic for dermatology problems at the George D. Widener Hospital for Large Animals at the New Bolton Center campus. We hope to see many more cases as practitioners learn about the new clinic. It will also provide our students with greater exposure to skin diseases of large animals."

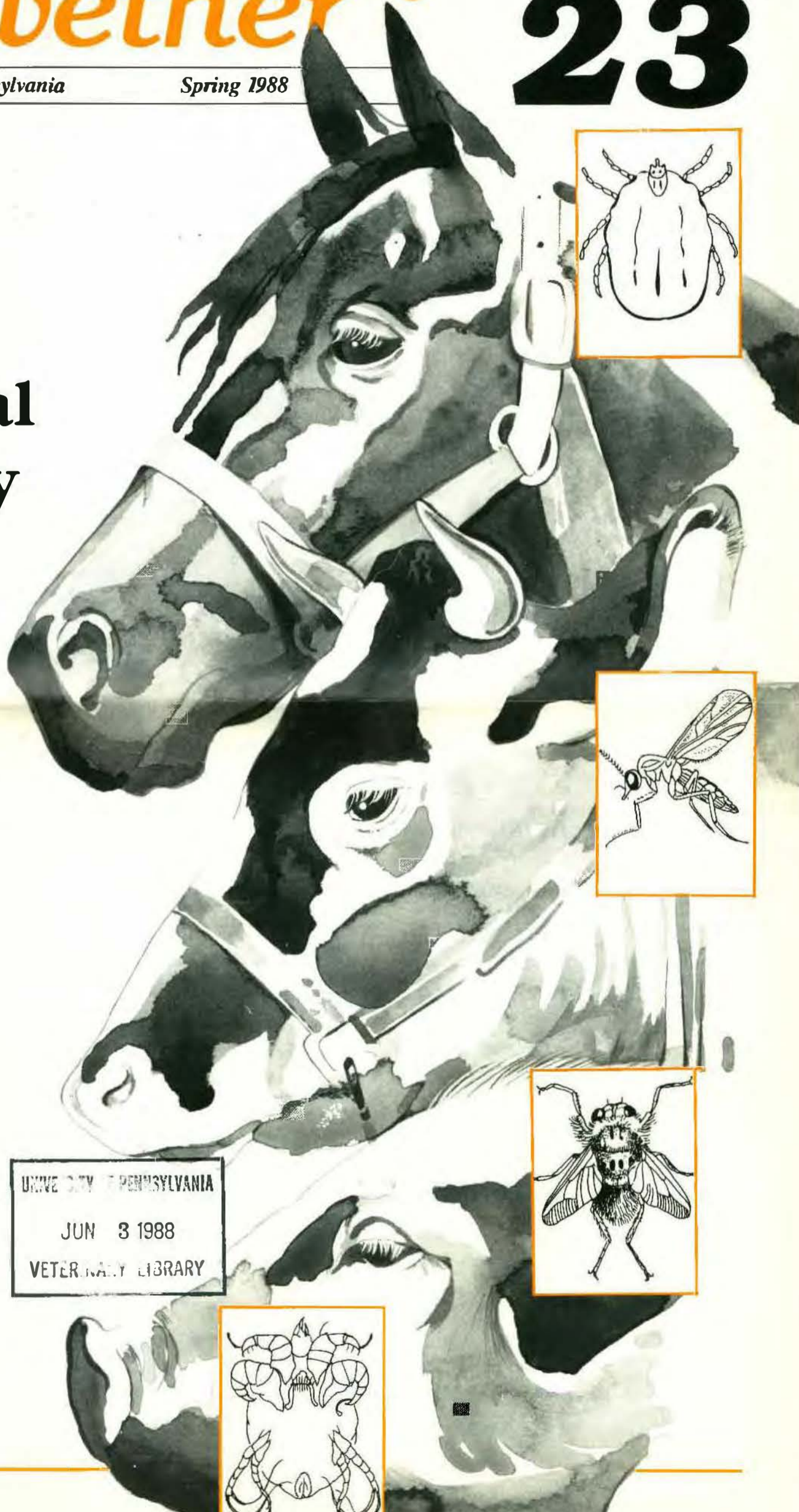
Skin diseases in horses and food animals are rarely life-threatening, yet they can interfere with the animal's performance, its general health, and the yield of milk, meat, or hides. Skin diseases also provide an opportunity for bacteria to enter the animal's system, causing unsightly infection and debilitation. As in the dog and cat, skin diseases in large animals can be caused by parasites, allergies and bacteria, as well as viruses. There are additional causes such as feed materials which result in extreme sensitivity to sunlight, and environmental factors such as prolonged wet weather which can facilitate skin infections.

"Because most owners of large animals do not worry too much about a few bald spots or pustules, the disease is often advanced when the veterinarian sees it," said Dr. Shanley, "making it more costly to treat. Also, if one is dealing with a contagious organism, it may have spread to other animals in the herd by the time it is diagnosed."

Diagnosis of skin diseases in horses or large animals is often complicated by owners' attempts to cure the problem with a myriad of ointments, tinctures, and other home remedies before seeing the veterinarian. This can change the clinical picture of the disease. By the time the veterinarian sees the animal, diagnosis may not be so easy and can only be made after evaluating the history and all the treatments tried.

Clean, dry conditions and regular grooming contribute much to the prevention of skin problems.

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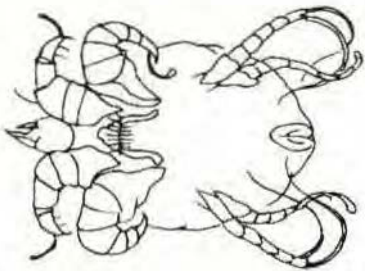
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Large Animal Dermatology

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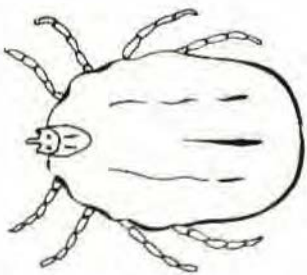
However, despite all good care, it is hard for horse and livestock owners to totally prevent their animals' exposure to insects, parasites, and bacteria. "Parasitic dermatoses are very common in large animals," said Dr. Shanley. "Flies, chiggers, and gnats are all around the stables and pastures, as are various species of mites. Each of these parasites causes specific problems in the different species of large animals."

Mange in a horse is a far less serious problem than a mange outbreak in a herd of swine. While the horse will show signs of the disease at the mane, ears, and the tail and will try to alleviate the itch by rubbing these areas, mange in pigs causes greater damage. The animals will rub themselves raw, doing considerable damage to their hides, and they will lose weight, cutting down on the farmer's meat yield. Mange in pigs is caused by the sarcoptic mite, which burrows into the skin. The disease is highly contagious and can spread quickly through a herd. Treatment consists of dipping or spraying of the animals and treating the environment.



The mite responsible for mange in the horse is the psoroptic mite. It also affects cattle, goats and sheep, though the disease in sheep has been eradicated here in the United States. These mites are quite specie-specific and cannot be spread from cattle to horses, for example. In cattle, the intense itching caused by the organism can lead to extensive self trauma and even death. Another mite, the chorioptes mite, affects horses, cattle, and sheep and causes lesions on the legs. In horses, it is often seen on the lower legs of draft animals, on the feathered part above the hoof.

Demodectic mange, so feared by dog owners, is uncommon in large animals. As each of the mites responds to different insecticides, a proper diagnosis is necessary before treatment can be started. The veterinarian takes skin scrapings and examines these for the mites.



Flies and ticks are also an important cause of skin lesions. *Culicoides*, a tiny gnat, also called "no-see-ums," will attack horses and cause an intense itch. Horses can develop an allergy to these pests, similar to a flea allergy in dogs, and they may have to be treated to prevent extensive damage to their skin from excessive rubbing on fences and walls.

The stable fly and other large flies cause painful bites which can become infected. Insect repellent and devices which attract and kill flies greatly cut down on such injuries. Grub is another disorder caused by flies. It



Culicoides hypersensitivity in a horse.

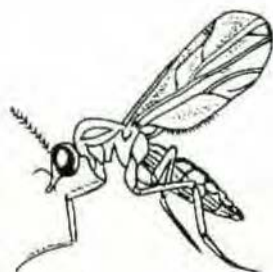
affects cattle and horses, though economic losses due to damage to meat and hides are greater in cattle. The female lays its eggs on the hairs of the lower leg. The eggs hatch and the larvae penetrate the skin and migrate through the body to tissues near the spinal cord. Here they mature and eventually emerge to pupate and become flies. They cause bumps with a breathing hole. If they are removed, care must be taken that the entire grub is removed, otherwise anaphylactic reaction may result.

Lice infestations are seen primarily in the winter months. They cause itching, and the animals can inflict self-trauma from rubbing. In calves, hairballs may result from excessive licking. In older cattle, milk production may fall. In pigs, lice infestation can result in lower weight gain and extensive hide damage. The disease can have a severe economic impact.

Ticks are ever present in pastures and woods and cause bite wounds which can become infected. Severe tick infestation can cause anemia. Ticks not only debilitate an animal, but they also are carriers of other diseases such as Lyme disease and a number of bacterial, viral, and protozoal infections.

"Lesions caused by insects often get infected and cause unsightly hair loss," said Dr. Shanley. "To determine the exact cause of such symptoms, the veterinarian takes a small skin plug and examines it for parasites and other organisms prior to treatment."

Weather plays an important role in the well-being of the skin. During a prolonged rainy season, horses can develop rain scald, a dermatophilosis which manifests itself with weepy and crusty sores. It affects the head, back, and lower limbs. Once the animals are moved to dry quarters, the disease usually disappears. Prolonged wet weather can also affect sheep and lead to dermatophilosis (lumpy wool disease) caused by bacteria. The crusting lowers the value of the fleece as it discolors it. Animals need to be treated to prevent the disease from spreading in the flock. Fleece rot is another disease affecting sheep. It, too, is caused by prolonged wetting of the skin. Fleece rot resembles dermatophilosis, but there is no scab development or skin ulceration. Also, the susceptibility of an animal to this disease depends on the nature of its fleece. It was found that animals with a fleece consisting of dense regular fibers are more resistant than animals which have irregular fiber size. Also, animals whose fleece



has a high wax content were not as susceptible.

Ringworm is another common skin disorder of large animals. "Any bald spot in a large animal should be checked for ringworm," said Dr. Shanley. "This fungus is widespread." It can be spread from animal to animal and also indirectly through grooming equipment, riding tack, and clothing. The fungal infection can be on the skin, but it can also affect the hair or the hooves. To diagnose which of the many ringworm species is responsible a culture has to be taken. Ringworm is very common in horses. It also occurs in swine, though here it is most often not treated as it does not seriously affect the animal.

Ringworm infection is common in confined cattle, and calves under the age of seven months are most susceptible. The lesions are generally hairless and not inflamed; they have a grey appearance. While they do not appear to bother the animal, these lesions can cause considerable damage to the hide, evident only after tanning, creating an economic loss.



Cow with ringworm infection.

Skin disorders caused by improper nutrition are another important disease category. Pigs are most susceptible to such diseases because of their rapid growth rate and their confined environment. Cattle fed improper rations also can develop skin disorders.

"The skin is a good barometer of the animal's general health," said Dr. Shanley. "Often, susceptibility to chronic infections indicates that more than a skin disorder is involved." Horse and livestock owners should check their animals' skin and seek a diagnosis when lesions are observed. "It is easier to treat it when the disease process is just beginning; it is more economical, too." The new dermatology clinic for large animals at New Bolton Center campus will provide a valuable service to the horse and livestock owners in the area.