

Advances In Fox Nutrition

(Continued from page 13) Like the rat, suffer a series of symptoms in the case of the absence of linoleic and linolenic acid in the diet. There may be first a scaldiness of the skin, accompanied by rashes and eruptions; then the swelling of certain tissues; then the accumulation of vast amounts of sebum in the fur; then a serious impairment in the lustre and texture of the fur, eventuating in a considerable loss of both guard

hair and under-fur; then a profound disturbance in the sexual and reproductive characteristics of the animal, the males exhibiting a disinclination to mate, and the females displaying a pronounced irregularity of ovulation; then an impairment in the growth with retarded development and general systemic disintegration; then kidney lesions, which oftentimes lead to blood in the urine and albuminuria, then a curious disturbance in

which the animal drinks twice the amount of water though eats the usual amount of solid food, clearly indicating an involvement of the posterior pituitary gland; and then the syndrome terminates in the death of the animal.

Before the animal reaches a moribund condition, supplementing the diet with a small amount of a mixture of linoleic and linolenic acids results in the complete extinction of all the symptoms. Not only do these unsaturated fatty acids, and perhaps others, completely cure the fat deficiency symptoms, but if they are contained in the diet they prevent the appearance of the fat deficiency syndrome.

This has given nutritionists a new interpretation of fats, which, like proteins, may be divided into dispensable and indispensable. As the name indicates, dispensable fats are not required by the living organism, and include largely olein, palmitin and stearin, with some other fatty acids. If these are not supplied in the food, the animal is capable of synthesizing them either from protein or from carbohydrate.

Indispensable fats can not be synthesized by the animal organism, either from protein or from carbohydrate. They must, therefore, be furnished in the diet. As far as is known now, linoleic and linolenic acids are probably the only two indispensable fatty acids.

It is strikingly curious that manufacturers of feed for rabbits, dogs and foxes have uniformly ignored the fat portion of the diets which they furnish.

Yet, the bitch, then the doe, and finally the vixen, and in that order, show tremendously high percentages of fat in their milk, exceeding the percentage found for any other mammalian with the exception of the whale and the guinea pig. A typical analysis of vixen milk is found in Table I. It is interesting to compare this with the milk of other animals shown on the accompanying chart, Table II.

Table I.

Water	73.50%
Total Solids	26.43%
Fat (ether extract)	13.85%
Protein (N x 6.25)	9.40%
Sugar	1.24%
Ash	1.14%
Undetermined	.80%

Table II.

	Water	Fat	Protein	Sugar
Woman	88	3	2	7
Cow	87	4	4	5
Ewe	89	8	6	4
Mare	90	1	2	7
Bitch	75	12.5	7	3.5
Cat	82	3	9	5
Rabbit	70	10	15	2
Goat	86	5	4	4
Vixen	74	14	9	1.25

Not all of the commercial foods produce the entire fat deficiency syndrome, since many of these foods contain inadvertent traces of linoleic and linolenic acids. But there is nowhere an indication that prepared foods are intentionally reinforced with the necessary unsaturates so as to insure more than a merely marginal requirement of these indispensable fatty substances.

Not only is the percent content of vixen's milk high in fat, but it shows an unusually high value in unsaturated fats. This is quickly demonstrated by determining the iodine absorption value of the fats in vixen's milk. Indeed, the degree of unsaturation of the fats in vixen's milk is such as to require the equivalent of not less than 1 per cent of the total diet of the fox in the form of linoleic and linolenic unsaturates; and there is no commercial food that has come to our attention that contains anywhere

near this amount of indispensable fat. The mere addition of not less than 1 per cent of an equal mixture of linoleic and linolenic unsaturates brings about almost instant and remarkable changes in the quality of the fur. This is instantly accompanied by the complete disappearance of the reproductive disorders, the males evidencing eager desire to mate, and the females recovering quickly their normal ovulation. By this expedient alone the reproductive efficiency of certain farms where the experiment was tried was such as to lower the 20 per cent incidence of sterility to a 14 per cent incidence.

It must be carefully understood that although the milk of the vixen is exceptionally rich in fat, not all of that fat is indispensable. Apparently the large quantity of fat present in that milk is designed to insure an adequate amount of indispensable fat which accompany the total ether extract. This is easy to comprehend since the native fox eats comparatively sparingly of carbohydrates, and in its carnivorous diet is compelled to manufacture considerable fat from animal protein interspersed through which the quantity of indispensable unsaturates is generally small.

If, instead of adding the proportion of at least 1 per cent of indispensable fats to the ration of the fox, there be added a surplus of unsaturated fats, and even cod liver oil, the color of the fur instantly suffers. In place of becoming lustrous and brilliant in its silver sheen it dulls and rusts, becoming appreciably and undesirably brown.

A carnivorous diet is not superlatively rich in the reproductive factor—vitamin E. The addition of wheat germ to many feeds in the trust that some vitamin E is retained in that germ is usually a farce. Anyone knows that wheat germ is subject to prompt rancidity, and rancidity quickly destroys the vitamin E potency of any oil in which it is contained. There is a classical example of a product marketed to physicians in hermetically sealed tins and bearing the seal of approval of medical authority sanctioning the statement that the product contained in the canister is a rich natural source of vitamin E. In reality, the germ in the canister is totally devoid of vitamin E, the reduced pressure serving to suck the oil to the surface of the germ, where it is quickly rancidified and the vitamin E destroyed by the residual air that is left in the tin. It is clear that if physicians and authoritative medical bodies can be most inadvertently deluded, feed manufacturers, inadvertently or otherwise, may be deluded.

The restoration of a surplus of vitamin E to the diet of the vixen is exceedingly desirable. It is best accomplished through the use of a properly prepared wheat germ oil. Wheat germ oil is a composite mixture of many important nutritive and reproductive supplements. It contains some vitamin A, considerable vitamin E, a rather ab-

The Silver Fox Business

Though during the past two and one half years there has been some decline in the prices received for Silver Fox Furs, the decline is not greater than would have been expected did people realize the increased number of pelts to be offered and the generally unsettled condition of European affairs during the whole period. In the past season the Fur Marketing Department of the Canadian National Silver Fox Breeders' Association alone marketed fully 47,000 Silver Fox skins, at prices considerably better—even on the September sale—than was the average price obtained on the sales of the year 1932. Skins of quality and of the color phases in popular demand are selling for good prices.

On considering conditions in general one does not need to be a very astute observer of trends to realize that it is now more than ever before a question of our having quality in the pelts we have to offer. The producing then of the animals from which the furs are taken is of first rate importance.

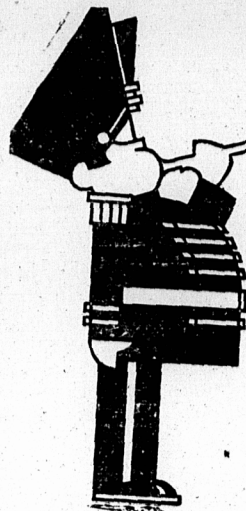
Our breeding stock must have individual quality of agreeable type; it must have a background; it must have pedigree;—and we should know the pedigree for generations—not by guess but by records well and truly kept, showing among other things color phases and records of production. These requisites in Silver Fox breeding are procurable in Canada through the acquisition of foxes registered in the Canadian National Live Stock Records.

At the Fox Show held in Charlottetown this week all foxes on exhibition are registered foxes or foxes fully eligible for registration.

THE SILVER FOX WORLD'S GREATEST EVENT!

At Charlottetown P. E. I.

NOVEMBER 16th to 20th



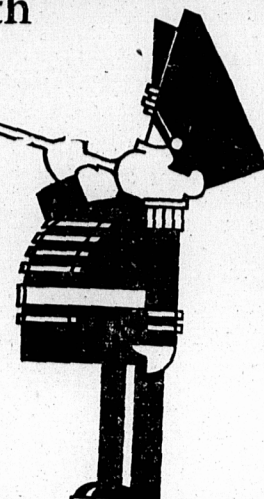
This Classic of the FOX World Offers

24 CHALLENGE CUPS and TROPHIES

many of them magnificent specimens of the silversmith's art, and

VALUED AT \$1500

BEAUTIFUL ROSETTE RIBBONS AND CASH PRIZES FOR 43 SECTIONS TOTALLING UPWARDS OF \$2000



Nowhere else in the world are such beautiful premiums and valuable cash prizes awarded. The result is that the finest specimens of silver fox meet here and an opportunity is afforded to silver fox ranchers and the public generally to see the progress that is being made in this great industry.

This Exhibition is the talk of the silver fox world and will be visited by many prominent fur men, fox ranchers and others interested. You cannot afford to miss this show either as an exhibitor or spectator.

There are Classifications for darks up to 25 per cent, dark mediums, mediums, pale silvers and extra pale silvers, subdivided into adults, yearlings and pups, males and females. Classes for herds, senior yearling, junior sire and three of his get, dam and two of her progeny, best matched pair male and female, adults, best matched pair male and female, pups. Nine Championships and Grand Championship for best fox in show. Prizes awarded on the basis of number of entries, one to six entries three prizes, eleven to twelve entries six prizes, over twenty-five entries twelve prizes. First prize \$12, second \$9, third \$6, remaining qualifying entries \$4 each.

A unique feature of the Exhibition this year will be the awarding of a silver cup to the exhibitor winning the greatest number of points in the Show. Many other features not offered by other exhibitions. Open to foxes registered in Canadian National Silver Fox Breeders' Association.

GRAND BANQUET CANADIAN NATIONAL HOTEL

Big foxmen's banquet will be held on Tuesday, November 17th at the Canadian National Hotel and will be the highlight of the season. Only 140 tickets will be sold so as to avoid crowding and assure every guest of a pleasant and highly entertaining evening. Don't overlook this event. Music, mirth and an unexcelled repast. Short, snappy speeches will be given by leading men and prominent authorities on Silver Fox ranching.

SILVER FOX AUCTION

Requests have been made for the Executive Committee to hold a silver fox auction in connection with the fox show. This has been arranged for and providing the exhibitors are willing will go through. It is a step in the right direction and should lead to great things in the future. Hundreds of ranchers are anxious to improve their breeding stock. They are looking for opportunities to purchase quality animals. This sale gives a chance to both buyer and seller to come together with public competition fixing the price.

WRITE FOR PRIZE LIST GIVING FULL PARTICULARS TO

JOHN B. ROPER, President.

WALTER R. SHAW, Secretary

CHARLOTTETOWN, P. E. I.

MARKETING OF FURS

We established a new high record for the pelt season 1935-36 in disposing of

47,000 SILVER FOX SKINS

The prices received were at good current market levels with less than one-half of one percent remaining unsold October 31st.

New installations of improved equipment have recently been effected the better to handle a still larger business during the present season.

Particulars on Request.

CANADIAN NATIONAL SILVER FOX BREEDERS' ASSOCIATION

Fur Marketing Department

Headquarters, Summerside, P. E. I.

FOXES FED

—on—

ROBINSON'S

GOLD TIP BISCUITS

—and—

SPECIAL DRY BREAD

have been consistent winners at the Shows. Feed these products and prove this.

ROBINSON'S MILL and BAKERY Ltd.

Summerside, P. E. I.

Fox Wire

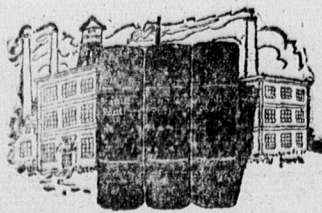
Highest Quality, All Sizes Stock

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Snaps, Locks

"PROTECTO" Preservative PAINT

For Preserving and Beautifying Shingles and Rough Lumber



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