REHABILITATION WILDLIFE COUNCIL

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FEEDING ORPHAN MAMMALS

Little is known about the specific nutrient requirements of infant and adult wild mammals. Milk composition varies with the species, and analyses of reported values have frequently been based on only one or a few samples (Fowler, 1979). An important work on milk composition, by Jenness and Sloan, is referenced at the end of this paper.

Although there are common denominators in the area of mammal rehabilitation, formulas, diets, feeding amounts and intervals, and methods vary among rehabilitators. The amount fed and feeding intervals are often based on the time constraints of the individual. There are few, if any, absolutes - no one formula that *has* to be used to successfully raise a particular species. Cottontails, for example, have been raised using Esbilac, KMR, or evaporated milk.

Since individual milk replacers are not currently available for most wild species, the rehabilitator must either use one of the substitute formulas on the market or create a formula from basic components. For the rehabilitator who is interested in compounding a formula from raw materials, Fowler presents applicable data in "Care of Orphaned Wild Animals" (*The Veterinary Clinic of North America*, vol. 9, no. 3, Aug., 1979).

Sometimes the consistency of the commerical milk substitute needs to be altered in order to be tolerated better by a particular species. For example, when powdered Esbilac is used for beaver, the mixing ratio can be 1:2 (1 part Esbilac + 2 parts water) instead of the usual 1:3 ratio. By using less water, the % solids of Esbilac is closer to the % solids or thickness of natural beaver milk, thus reducing the possibility of diarrhea. A ratio of 1:1 is also feasible but not economical.

Infant mammals that have received colostrum are better candidates for hand-rearing than those who have not. Colostrum is milk that the mother secretes for only a few days after birth. It is high in protein and contains immunities which are beneficial to the newborn. For newborn deer, wild sheep and goats, cow or domestic goat colostrum can be substituted. Since colostrum can be frozen, rehabilitation centers could conceivably contact nearby game propagators for the purpose of obtaining colostrum for species such as fox and raccoon.

Infant artiodactyls (hoofed mammals) consume a daily amount of formula equal to approximately 10% of their body weight. Carnivores and rodents drink up to 35%-40% of their body weight, while lagomorphs consume approximately 10%. The quantity fed will vary according to the animal's energy, activity, and frequency of feeding. If fed four to six times per day, artiodactyls are usually given 20 cc's per kg of body weight. Carnivores and rodents can receive 25-50 cc's per kg of body weight. The stomach capacity of most animals appears to be in excess of 50 cc's per kg of body weight. However, the rehabilitator should not fill the stomach to capacity (Fowler, 1979). Only the amount of formula used for a single feeding should be heated at one time.

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Any supplements should be added after heating.

Feeding instruments should fit the size and shape of the animal's mouth. Oftentimes the animal itself will choose the device that it finds most comfortable. Some tree squirrels like to nurse from a 1 cc syringe or plastic eyedropper, while others prefer a pet nurser. The rehabilitator can try several utensils and note how the animal reacts to each. Baby opossums are generally most comfortable with a curved anal gland syringe. The tip can be clipped and filed to accommodate the size of the mouth opening. Infant mammals can also indicate the correct feeding position. In the above situation, the opossum will usually clasp the upward curve of the syringe and nestle into the palm of the hand. For mammals such as deer and peccary, standing is the natural nursing position.

The nipple opening is also important.. If an animal has trouble using an artificial human nipple, one that is designed for premature infants can be tried. Generally, nipples should not leak milk unless the animal is sucking, or aspiration pneumonia may occur. Crosscut nipples work well for hoofed or large mammals. All feeding instruments should be sterilized regularly.

Tube-feeding is frequently used for tiny, weak, or older mammals that are unable to eat. Although it is an effective method, it is not advisable for the inexperienced rehabilitator.

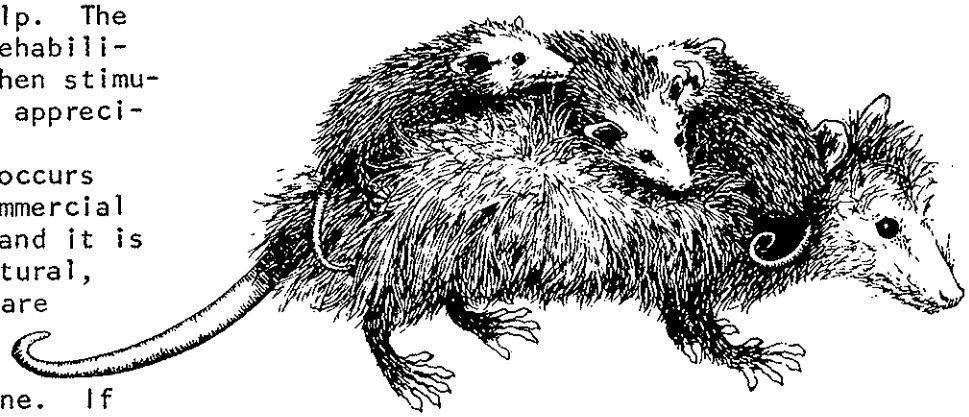
Infants need to be manually stimulated to urinate and defecate after nursing. A warm, damp, soft cloth, cotton ball, or soft kleenex or paper towel can be used to gently massage the perineal region. If an animal is not interested in eating, stimulation may help. The infant will usually let the rehabilitator know, by its actions, when stimulation is no longer needed or appreciated.

Weaning in captivity often occurs earlier than in the wild. Commercial formulas are only proximate, and it is beneficial to begin a more natural, balanced diet. Some animals are psychologically ready to wean earlier than others, and the process should be a gradual one. If baby food meats are added to the formula or diet, it is important to note that, although lamb is the most hypoallergenic, many animals do not like the flavor. Beef is the second easiest to digest, followed by chicken. Chicken is a favorite of many animals such as the opossum. Pork is hard to digest and should be avoided. If baby food cereals are used, rice is less irritating than others. However, high-protein and mixed are also used.

Little is known about the vitamin and mineral requirements of wild mammals, and the use of supplements varies among rehabilitators. Overdosing can be a problem particularly with vitamin A, calcium, and phosphorus. The weight of the mammal, package directions, and veterinary advice can aid the rehabilitator in this area. The author has regularly used "D-Calphos Tastabs" and a vitamin-mineral powder or liquid with no ill effects. For hairless or very lightly furred mammals, "Linatone" can aid development appreciably.

Debbie Marcum
Austin, TX

The information and charts in this article are excerpted from "Hand-Rearing Non-Domestic Mammals", by Debbie Marcum. The paper, which was included in the Mammals Wildlife Conference Packet, is now available from WRC. It contains sections on medical problems and their treatment, dietary products, medical products, housing and vaccinations.



(from "Hand-Raising Non-Domestic Mammals", Marcum)

Table 2. *Dietary Products*

ITEM	TRADE NAME	MANUFACTURER	SOURCE	REMARKS
Canned & Dry Foods				
Canned food, formulated for canids and felines, which can also be used for edentates, insectivores, and marsupials	*Zu/Preem Feline Diet, a.k.a. Science Diet Exotic Feline*	Hill's (Topeka, Kansas)	Feed store, pet store, veterinary supplier	
Dry food for artiodactyls	*Calf Manna*	Carnation	Feed store	
	Deer Checkers	Ralston Purina Company	Feed store	
	Omolene 300	Ralston Purina Company	Feed store	
	Pig Startena	Ralston Purina Company	Feed store	
Dry food for carnivores, edentates, and marsupials	*Dog Chow*	Ralston Purina Company	Grocery store	
	High Protein Dog Meal	Ralston Purina Company	Grocery store	
	Puppy Chow	Ralston Purina Company	Grocery store	
	Science Diet Canine Growth Dog Food	Hill's	Feed store, pet store, veterinary supplier	
Dry food for omnivores	*Zu/Preem Omnivore Diet Dry*	Hill's	Manufacturer referral, veterinary supplier	
Dry food for rodents	*Rodent Chow*	Ralston Purina Company	Feed store, pet store	
	Wayne Lab Blox	Continental Grain	Feed store, pet store	
Supplements				
High energy supplement	*Energel*	Animark, Inc.	Veterinarian or supplier	*Appetite stimulant; high caloric supplement for weak, malnourished, or convalescing mammal; palatable*
	Nutri-Cal	EVSCO		
Skin and coat supplement	*Linatone*	Lambert Kay	Feed store, pet store	*Aids the development of very young, nursing fur-bearing mammals such as rabbits and opossums EXCEPTION: Mammals, such as beaver and nutria, which eat natural vegetation while nursing*
Trace mineral salt spool or block (95% NaCl)			Feed store, pet store	*Ad libitum to mammals whose eyes are open*
Vitamins	*D-Calphos Tastabs*	Animark, Inc.	Veterinarian or supplier	*Calcium/phosphorus with D_3*
	Pet Tabs	Beecham Laboratories (Bristol, Tennessee)	Veterinarian or supplier	*Vitamin-mineral supplement in tablet form*
	Supplavite	Animark, Inc.	Veterinarian or supplier	*Vitamin-mineral supplement in liquid form*
	Vionate	Squibb	Feed store, pet store	*Vitamin-mineral supplement in powder form*
	Vitamino 4x	Hart-Delta	Veterinarian or supplier	*Vitamin-mineral supplement in liquid form*
Feeding Instruments				
Calf and lamb nipples			Feed store	*Formula feeding*
Human baby bottle	*Evenflo, Playtex*		Drugstore, grocery store	*Formula feeding*
Pet Nurser	*Borden Pet Nurser*		Feed store, pet store	*Formula feeding*
	Four Paws Pet Nurser		Feed store, pet store	*Formula feeding*
	Nip Pet Nurser		Feed store, pet store	*Formula feeding*
Syringes			Veterinarian or supplier	*Feeding, medicating*

Table 2. *Dietary Products*

ITEM	TRADE NAME	MANUFACTURER	SOURCE	REMARKS
Milk Replacers				
Canine milk replacer	*Esbilac*	Borden Chemical Company	Feed store, pet store	
Cow milk replacer	*Nurse-Gro*	Ralston Purina Company	Feed store	
	Suckle	Carnation	Feed store	
Doe milk replacer	*Doe Milk Replacer*	Foremost Food Company (Dublin, California)	Manufacturer	
Ewe milk replacer	*Lam-O-Lac*	Borden Chemical Company	Feed store	
Feline milk replacer	*KMR*	Borden Chemical Company	Feed store, pet store	
Mare milk replacer	*Foal-Lac*	Borden Chemical Company	Feed store	
Sow milk replacer	*SPF-Lac*	Borden Chemical Company	Feed store, veterinary supplier	

Table 3. *Proximate Milk Composition of Selected Mammals**

SPECIES	% SOLIDS	% PROTEIN	% FAT	% CARBOHYDRATE
Artiodactyls				
Bighorn Sheep	34.0	12.1	16.0	3.4
Deer, Mule	24.4	7.6	10.9	5.4
Deer, White-Tailed	21.0	7.8	6.0	4.6
Moose	21.5	8.4	10.0	3.1
Peccary	16.4	5.4	3.5	6.5
Pronghorn	24.9	6.9	13.0	4.0
Wild Pig	17.0	7.1	5.1	3.7
Carnivores				
Badger	19.6	7.2	6.3	3.5
Bear, Black	44.5	14.5	24.5	0.4
Coyote	22.1	9.9	10.7	3.0
Fox	18.1	6.3	6.3	4.6
Lynx	18.5	10.2	6.2	4.5
Mink	20.1	7.4	3.6	8.2
Mountain Lion	35.0	12.0	18.6	3.9
Otter, River	38.0	11.0	24.0	0.1
Raccoon	13.4	4.0	3.9	4.7
Sea Lion, California	52.7	13.8	36.5	0.0
Wolf	23.1	9.2	9.6	3.4
Lagomorphs				
Cottontail	36.1	12.5	17.9	1.0
Hare (Jackrabbit)	40.8	23.7	13.9	1.7
Marsupials				
Opossum	24.4	4.8	7.0	4.1
Rodents				
Beaver	33.0	9.0	19.8	2.2
Nutria	43.4	13.7	27.9	0.6
Porcupine	29.7	12.4	13.2	1.8
Squirrel, Gray	39.6	7.4	24.7	3.7

Table 4. *Composition of Milk and Selected Milk Substitutes**

	% SOLIDS	% PROTEIN	% FAT	% CARBOHYDRATE
Cow's milk (whole, 3.5% fat)	11.4	3.5	3.5	4.9
Goat's milk (fresh)	13.2	3.2	4.0	4.6
Esbilac (liquid)	15.3	5.1	6.7	2.4
Esbilac (powder, undiluted)	98.4	33.2	44.1	15.8
Diluted 1:1	30.6	10.2	13.5	4.8
Diluted 1:2	22.9	7.6	10.1	3.6
Diluted 1:3	15.3	5.1	6.7	2.4
Diluted 1:4	11.5	3.8	5.1	1.8
Evaporated milk (undiluted)		7.0	7.9	9.7
Diluted 1:1		3.5	3.8	4.6
Foal-Lac (powder, undiluted)	94.9	19.7	15.3	52.0
Per package directions	22.4	4.8	3.5	12.6
KMR (liquid, undiluted)	18.2	7.7	4.6	4.8
SPF-Lac (liquid, undiluted)	15.2	4.4	5.2	4.7

* Data obtained from Fowler (1979) and Borden Chemical Co.

Peninsula Humane Society

The Wildlife Department of the Peninsula Humane Society (P.H.S.) was established in April, 1974. P.H.S. which has the animal control contract for San Mateo County, recognized the need for specialized care for the sick, injured and orphaned wild animals of the county and set aside limited funds to begin a wildlife rehabilitation program.

We started out in a converted janitor's closet and over several years have expanded to our present location. We now have a large area that consists of a large room containing 12 large cages, 3 incubators, and several small cages. There is also an area set aside for initial exams and treatment for the animals. Besides our wildlife room, there is a wildlife courtyard that has a mammal cage and two songbird aviaries. There is additional caging at volunteers' homes. P.H.S. also has an x-ray room, operating room and an isolation building available for wildlife if needed.

We have one full-time supervisor and four part-time employees complimented by a dedicated staff of 40 volunteers to care for the approximately 4,000 animals we receive each year. There are two veterinarians at the shelter during the day to diagnose and treat the animals and an emergency clinic is available during the evening hours, so the animals are provided with 24 hour medical care.

Because we are located at a humane society, we are fortunate to have the help of the Animal Control Department. They not only pick-up and bring in the majority of the wild animals we receive but also help us with rescues and releases. To help the officers deal with wildlife in the field we give all new officers training in how to handle wildlife and the proper methods for transporting these animals.

In the fall we offer training classes for the public who wish to work in the shelter and in the spring, classes for people interested in care of baby birds. The Wildlife Department sponsors an Explorer Post, whose members work in all facets of the program. There are also volunteers that go into the community to give talks about native wildlife and they often take along non-releasable birds as educational aids.

The Wildlife Department receives its funding from the Humane Society, donations, memberships and bequests. As funds become available, plans for expansion include a new songbird and raptor aviary, mammal caging and a laundry room.

Sandi Stadler, Supervisor
P.H.S. Wildlife Department
San Mateo, CA



A METHOD OF AGING YOUNG RACCOONS

Based on a study involving seven litters of raccoons born and reared in captivity, tooth eruption data has been used to successfully age young raccoons. Deciduous (temporary) first, second, and third incisors and canines erupted at one month; deciduous second, third and fourth premolars at 1½ months; deciduous first premolars and permanent first incisors at two months; permanent second incisors and first molars at 2½ months; permanent third incisors at three months and permanent canines at 3½ months. Captive raccoons were weaned by their mothers at approximately 13-17 weeks of age. (Montgomery, G. G., "Tooth Eruption in Preweaned Raccoons," Journal of Wildlife Management, 28(3): 582-584, 1964.)

PROBLEM SOLVING
with
Carol Hamilton and Friends

If you learn a solution to even just one problem from this column, then "one good solution deserves another". This column is by and for you and can only continue through your participation. Send your solution to Problem Solving with Carol Hamilton and Friends, 50 Pine Ridge Way, Portola Valley, CA 94025

PROBLEM SOLVING

DIET FOR SONGBIRDS AND INSECT EATERS

Problem: Diet for naked, unidentifiable baby birds, predominentyly insect eating birds, and raising to release non-self feeding insect eaters.
Problem Solver: Carol Meaney, Wildlife Rescue, Palo Alto, CA.
Solution: Bug Butter Recipe
3-4 dozen mealworms
½ jar infant strained beef, beef liver, or beef with heart (NO PORK)
½ jar infant strained turkey or chicken
12 to 14 drops of Avitron Vitamins OR
½ tsp of Vionate vitamin supplement
Pinch of Bone Meal
½ tsp of Brewers Yeast (NOT BAKING YEAST)
2 Tbs. water (enough to allow whirling)
High protein cereal or dog or cat kibble pulverized to a fine powder for thickening.
Directions:
1. Blend all ingredients in blender until smooth.
2. Thicken to desired consistency with high protein cereal, dog or cat kibble.
3. Refrigerate. (Sours qucikly, use in small amounts and smell before feeding to birds.
4. Bring to room temperature before use.
5. Freeze remaining portions in ice cube trays.

ADVANTAGES:
1. Easily digestable
2. Excellent diet for raising to release insect eating birds who never learn to self-feed in captivity. (Swifts, Nighthawks, Whip-Poor-Will, etc.)
3. Ingredients easily available.
4. Readily accepted by most adult birds in need of hand feeding who are nutritionally depleted.

DISADVANTAGES:
1. This, as any food, left on bird's body can harbor germs.

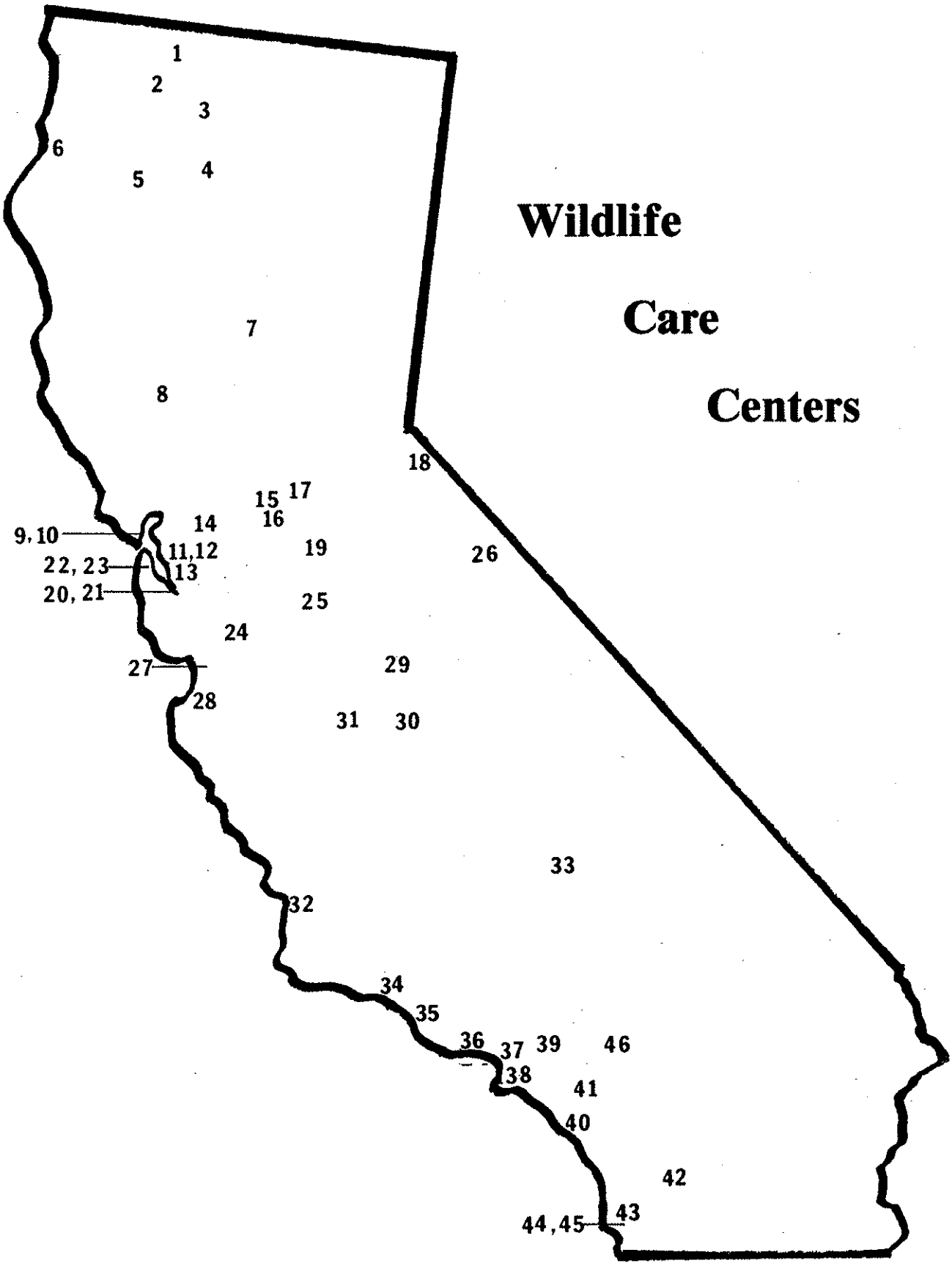
METHODS FOR FEEDING BABY MAMMALS

Problem: How to deliver formula to infant mammals in a manner they will readily accept so that the milk does not go up their noses.
Problem Solver #1: Dodi Franklin, Wildlife Dept., Humane Society of Santa Clara Valley, CA.
Solution #1: For infant squirrels use an eye dropper with attached short section of rubber tubing off of a catheter.
Problem Solver #2: Fraya Katz, Distressed Wildlife, Albany, NY.
Solution #2: Use a syringe: 1cc for field mice, chipmunks; 3-5cc syringe for squirrels, rabbits. You can add a small (14-20 gauge) plastic tip to syringe.
Advantages:
1. Mammal can take formula at its own speed.
2. Less air is swallowed.
3. Controlled rate of delivery prevents milk from going up into nose.
4. If infant won't suck you can deliver formula at a very slow rate.

QUICKIES

FRUIT EATER RECIPE FOR BIRDS: Finely blend in a blender Mynah Bird pellets. Then add orange juice (not for baby birds), mashed bananas, yogurt, creamy cottage cheese, currents and Vionate vitamins. Becomes a dry-moist consistancy. Serve with chopped fruit topping (blueberries, apple, etc.). Freeze base in serving sizes. (Pat Burry, Newport Beach, CA)

Wildlife Care Centers



CALIFORNIA WILDLIFE CARE CENTERS

1. California Conservation Corps.
   Linda A. Potts
   P.O. Box 645
   Montague, CA 96064

2. Wilderness Research
   Rehabilitation Center
   5004 S. Hamlin Gulch
   Fort Jones, CA 96032

3. Siskiyou Raptor Rehabilitation
   Rt. 1, Box 359
   Mt. Shasta, CA 96067

4. Shasta Wildlife Center
   P.O. Box 344
   Redding, CA 96087
   (916) 246-0499

5. Trinity Wildlife Care Center
   Box 1597
   Weaverville, CA 96093
   (916) 623-2848

6. Humboldt Wildlife Care Center
   P.O. Box 4141
   Arcata, CA 95521
   (707) 725-6131

7. Bidwell Nature Center
   P.O. Box 4005
   Chico, CA 95927
   (916) 342-3710

8. Critter Care
   92 Oak Knoll Road
   Ukiah, CA 95482
   (707) 462-4032

9. Marin Wildlife Center
   76 Albert Park Lane
   San Rafael, CA 94902
   (415) 454-6961

10. California Marine Mammal Center
    G.G.N.R.A., Marin Headlands
    Fort Cronkhite, CA 94965
    (415) 331-SEAL

11. International Bird Rescue
    Research Center
    Aquatic Park, Bay Street
    Berkeley, CA 94710
    (415) 841-9086

12. Alexander Lindsay Jr. Museum
    1901 First Ave.
    Walnut Creek, CA 94596
    (415) 935-1978

13. Sulphur Creek Nature Center
    1801 "D" Street
    Hayward, CA 94541
    (415) 881-6747

14. Wildlife Rehabilitation Service
    524 Delaware Street
    Fairfield, CA 94533
    (707) 429-HAWK

15. Davis Wildlife Care Association
    P.O. Box 676
    Davis, CA 95616

16. U.C. Davis Raptor Center
    c/o VMTH University of CA, Davis
    Davis, CA 95616
    (916) 752-1363

17. Wildlife Care Association
    3615 Auburn Blvd.
    Sacramento, CA 95821

18. Lake Tahoe Wildlife Care, Inc.
    P.O. Box 10557
    South Lake Tahoe, CA 95731

19. Amador County Wildlife Care Association
P.O. Box 362
Jackson, CA 95642

20. Humane Society of Santa Clara Valley Wildlife Program
3001 Ross Ave., Rm. 15
San Jose, CA 95124
(408) 269-2474

21. Youth Science Institute
16260 Alum Rock Ave.
San Jose, CA 95127
(408) 258-4322

22. Peninsula Humane Society
12 Airport Blvd.
San Mateo, CA 94401
(415) 573-3785

23. Wildlife Rescue, Inc.
4037 El Camino Way
Palo Alto, CA 94306
(415) 494-SAVE

24. San Benito County SPCA
P.O. Box 1046
Hollister, CA 95023
(408) 637-3526

25. San Joaquin Raptor Rescue Center
P.O. Box 778
Merced, CA 95341

26. Project Wildlife of Inyo-Mono
P.O. Box 447
June Lake, CA 93529

27. Native Animal Rescue
2200 Seventh Ave.
Santa Cruz, CA 95073
(408) 462-0726

28. Monterey SPCA, Wildlife Rescue Center
P.O. Box 3058
Monterey, CA 93940
(408) 373-2631

29. Fresno Wildlife Rescue
P.O. Box 9032
Fresno, CA 93790
(209) 227-1469

30. REACH
1001 W. Main
Visalia, CA 93291
(209) 625-6748

31. Fort Roosevelt
P.O. Box G 1067
Hanford, CA 93230

32. Mike Stalder
Residence 1, State Park Rd.
Morro Bay, CA 93442
(805) 772-5571

33. Facility for Animal Care and Treatment (FACT)
CA State College
Bakersfield, CA 93309
(805) 833-3167

34. Goleta Pet Hospital
345 Rutherford St.
Goleta, CA 93017
(805) 967-1811

35. Santa Barbara Zoo
500 Ninos Drive
Santa Barbara, CA 93103
(805) 962-5339

36. Bird Rehabilitation Project
Ronald R. Dalzell, DVM
6580 La Cumbre Road
Camarillo, CA 93010

37. Animal Rescue and Care Center
2692 E. Thousand Oaks Blvd.
Thousand Oaks, CA 91362
(805) 496-3400

38. Alliance for Wildlife Rehabilitation and Education (AWARE)
P.O. Box 4572
North Hollywood, CA 91607

39. Wildlife Care and Rehabilitation
P.O. Box 1336
Studio City, CA 91604
(213) 789-8460

40. Animal Care Center
20401 Sun Valley Dr.
Laguna Beach, CA 92651
(714) 754-3734

41. Tucker Wildlife Sanctuary
Box 858, Star Route
Orange, CA 92667
(714) 649-2760

42. Project Wildlife
764 Glen Oaks Dr.
Alpine, CA 92001
(714) 445-2398

43. North County Wildlife Rescue
13724 Sagewood Drive
Poway, CA 92064
(714) 487-7604

44. Wildlife Rehabilitation
4801 Barstow St.
San Diego, CA 92117

45. Sea World, Inc.
1720 So. Shores Rd.
San Diego, CA 92109
(714) 222-6363

46. Dr. William O. Wirtz, II
Dept. Biology, Pomona College
Claremont, CA 91711
(714) 621-8000 ext. 2950

Supplement to the Wildlife Journal, Summer 1982.

Wildlife Rehabilitation Council, P.O. Box 3007, Walnut Creek, CA 94598

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THERMOMETERS FOR BABIES' NEST: Here's a thermometer small enough (2½"x 1") to put in the nest with your orphans and be assured of an accurate reading without taking up space. You may order the Magnetic Thermometer No. 355 by writing to Arjon Manufacturing Co., 100 Hoffman Place, Hillside, NJ 97205. Phone (201) 372-3500. Cost is $.30 per unit plus $.50 handling. No minimun order. Shipping time is approximately 2 weeks. Also available at variety stores.

BOOK REVIEW

Martin, Alexander, H. Zim, A. Nelson, AMERICAN WILDLIFE & PLANTS, A GUIDE TO WILDLIFE FOOD HABITS., New York, Dover Publication, Inc. 1961, 500 pgs. Replete with drawings, maps, diagrams and charts. Hardbound $9.00, soft cover $4.95.

For raising, preparing for release, or maintaining wildlife, this book is invaluable and a "must" for your reference library. The book is divided into three sections. Part 1 covers introductory chapters; Plant Roots of Wildlife; Farm Crops and Wildlife; Wildlife Food Habit Studies; and Interpreting the Data of this Book.

Part II is Animals and Their Food. The feeding habits of more than 1,000 species of animals are covered including over 300 species of birds divided into five categories (waterbirds, marshbirds and shorebirds, upland gamebirds, songbirds, and birds of prey.) Also covered are fur and game animals, small mammals, hoofed browsers, fish, amphibians and reptiles. The information provided on each species includes a brief description of the species, a range map within the U.S., a graph showing percentage of plants eaten by the animal during each season of the year, a list of animal and plant foods (with regional and seasonal preferences listed beside plants), and lastly a reference bibliography.

Part III, Plants Useful to Wildlife (woody plants, upland weeds and herbs, marsh and aquatic plants, and cultivated plants). Similar format to last chapter ranks plants according to their value. This is a simple, convenient and easy to read book.

CONFERENCE REVIEW

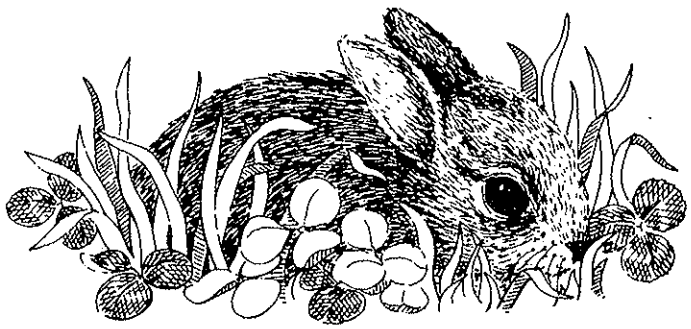
The First Annual Wildlife Rehabilitation Symposium was held on Feb. 18-21, 1982, at the Sheraton-Naperville Hotel in Naperville, IL. It was jointly sponsored by the Forest Foundation of DuPage County and the Friends of The Furred and Feathered, and hosted by the Forest Preserve District of DuPage County.

The 262 participants from 21 states attended Workshops on infant mammal care, fund raising, volunteerism, behavioral rehabilitation, animal handling and cage building. The 29 paper presentations covered a variety of topics in the areas of raptors, seabird, diseases and injuries, infant care and conservation education.

The symposium Proceedings are being published in book form by Exposition-University Press. To order, send $20.00 for hardcover, or $15.00 for softcover, payable to: Forest Foundation of DuPage County, c/o Wildlife Haven, 525 S. Park Blvd., Glen Ellyn, IL, 60137. This volume will be available in the autumn of 1982.

The Second Annual Wildlife Rehabilitation Symposium has been scheduled for March 23-27, 1983, and will once again be hosted by the Forest Preserve District of DuPage County. Individuals wishing to present workshops or papers should contact: Dr. Paul Beaver, Program Chairman, Wildlife Haven, 525 S.Park Blvd., Glen Ellyn, IL 60137.

The 1984 Symposium will be hosted by the Kalamazoo Nature Center in Kalamazoo, Michigan.



Current Literature

Crawshaw, Graham J., MRCVS, Kenneth L. Mould, DVM, "Repair of a Cervical Fracture in a Deer," Veterinary Medicine/Small Animal Clinician, Vol. 77, No. 2, pp. 233-236, February, 1982.

Heath, Ralph T., Jr., Pete Van Allen, Dr. Harold Albers, "Help for Hooked Birds," New Methods, Vol. 4, No. 8, pp. 9-15, January 1982.

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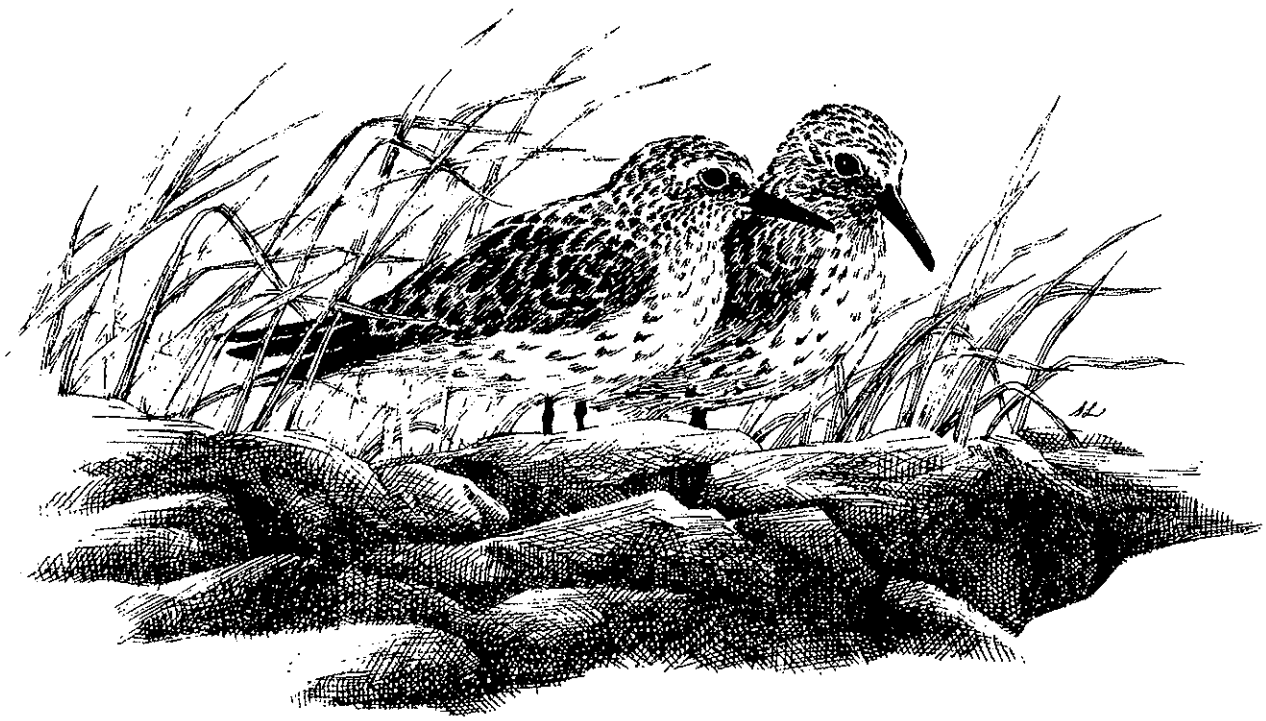
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EMERGENCY FORMULAS

The following formulas were formulated by Borden for EMERGENCY USE ONLY. They are less nourishing than Esbilac and KMR, and should only be used until you can obtain these products.

EMERGENCY FORMULA #1 FOR ESBILAC:

1 part boiled water
5 parts evaporated milk
1 teaspoon dicalcium phosphate per quart of formula

EMERGENCY FORMULA #2 FOR ESBILAC:

8 ounces homogenized milk
2 egg yolks

Each of these formulas should be mixed well and refrigerated; warm before use.

EMERGENCY FORMULA FOR KMR:

½ cup whole cow's milk
1 hard-boiled egg
1 teaspoon calcium carbonate
Liquid vitamins per package directions

Blend all of the above until smooth; refrigerate between feedings and warm before use.

NOMINATIONS FOR W.R.C. BOARD

There are currently three vacancies on the W.R.C. Board of Directors, and the three year term of three members will be up in the fall.

The nominating Committee is now accepting names with brief resumes to be considered for the ballot. To be eligible you must be a professional or organizational member, and be able to attend 75% of the board meetings each year. These meetings are normally held in northern California.

If you are interested or would like to recommend someone, send resumes no later than SEPTEMBER 20, 1982, to:

Susan Kelly
Nominating Committee
1915 Kentucky Street
Redwood City, CA 94061

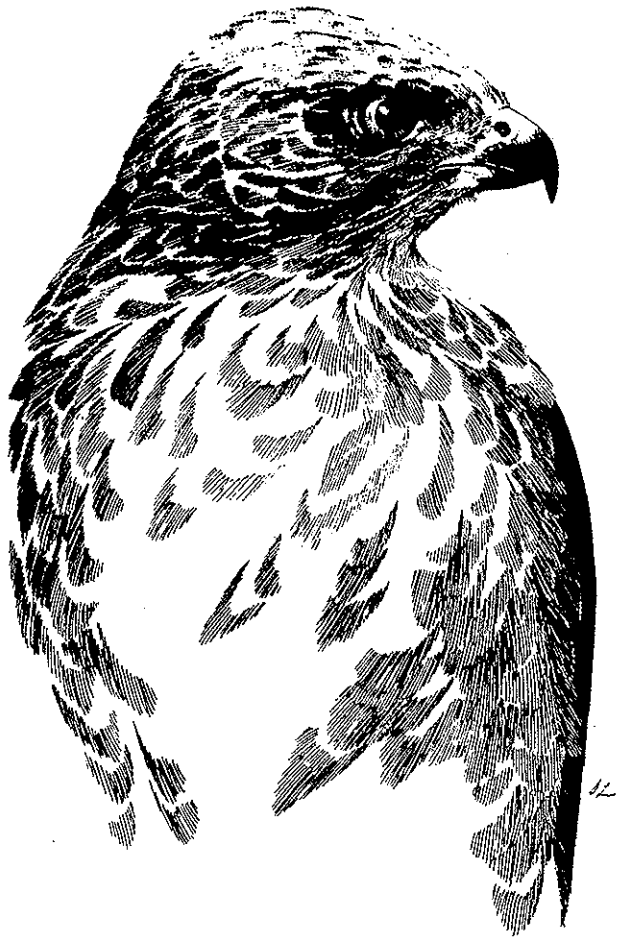
STEEL-JAWED TRAPS - A CASE STUDY

We received a call one evening around 8 p.m. from a man who lived along the San Gabriel River in the city of Norwalk. He said that his son had seen what he thought was a red fox while on his way to school at 7:30 a.m. that morning. The fox ran from the boy but had "something" on her feet. We gathered up our basic rescue equipment and headed for the place the boy last saw the fox - a commerical Christmas tree farm. It was dark and we "treas-passed" over a chainlink and barbed wire fence. The area was large and our chances of finding a fox were slim, to say the least. We had only searched for about 20 minutes when we heard what sounded like chains clanging. We sought out the source of the sound and found a young female fox pressed against the ground under a tumbleweed. On each front paw was a steel jaw trap. She was in shock so was easy to catch by the tail. Afraid of massive bleeding we did not attempt to remove the traps right there. We had a veterinarian waiting for us 10 minutes away so we gently placed the fox in a burlap bag and headed to the clinic.

The fox lost three toes on one paw and two on the other due to gangrene. We were not sure exactly how long she had been dragging those traps around but we knew for a fact that it was at least 12 hours. Her feet were treated and rebandaged every day for three weeks then every three days for another two weeks. It took many weeks for the rotting skin to slough off and new skin to take its place. The fox was vaccinated and five months later was released at the El Dorado Nature Center in Long Beach. We are happy to say that occasionally we see the tracks of a fox minus some front toes and we like to hope that they are "our" little red fox.

Jennifer Boley
AWARE
North Hollywood, CA

Reprinted from Alliance for Wildlife Rehabilitation and Education Newsletter



RAPTORS

February 5 - 6, 1983
San Francisco, California

The Barbara Sawyer Wildlife Conference to be held in 1983 will focus on raptor rehabilitation. Topics to be covered will include nutritional requirements, infant care and diet, rehabilitation techniques, captive management, and veterinary techniques.

Those persons interested in presenting papers should submit typed double-spaced abstracts to:

Susan Kelly
1915 Kentucky Street
Redwood City, CA 94061

Abstracts must be received no later than September 30, 1982.

MAIL-ORDER CATALOGUES

The following companies are sources of pet and wildlife supplies that rehabers and veterinarians may find useful:

Omaha Vaccine Company
P.O. Box 7228
3030 "L" Street
Omaha, Nebraska 68107

Petco Animal Supplies
P.O. Box 1076
8693 La Mesa Blvd.
La Mesa, California 92041

Wholesale Vet Supplies
P.O. Box 2256
4801 Shepard Trail
Rockford, Illinois 61103

Piedmont Veterinary Sales
Box 1582
Salisbury, North Carolina 28144
(specify Dog, Cat and/or Horse)

Star Professional Pharmaceuticals
11 Basin Street
Plainview, New York 11803

UPCO (wholesale prices)
306 Cherokee Street
St. Joseph, Missouri 64504

Animal Specialties, Inc.
P.O. Box 531
Camden, New Jersey 08101
(largest mail-order company in the world for dog and cat products; $1.00 cost, refundable)

Kansas City Vaccine Company
Stock Yards
Kansas City, Missouri 64102



NEW MEMBERS

Betsy Bracy, California
Carol Darick, Maryland
Sandy Frane, Texas
Lois Garlick, Washington
Julie Garrett, California
Beverly Nilsen, Colorado
Albert Shultz, Indiana
Kathie Shultz, Indiana
Lynette Sumpter, AHT, Indiana
Penny Tadman, Texas
David Thornton, DVM, Ohio
Helen Viramontes, California

ORGANIZATIONS

Bay Beach Wildlife Sanctuary
Green Bay Park & Rec. Dept.
City Hall, 100 N Jefferson St.
Green Bay, WI 54301

Essex County Humane Society
1375 Provincial Road
Windsor, Ontario, Canada N9A 6J3

Facility for Animal Care and
Treatment
CA State College
Bakersfield, CA 93309

Hawk Hideaway
7086 Haskell Rd., R.D. #2
Cuba, NY 14727

Humane Society of Rochester
and Monroe Counties
99 Victor Road
Fairport, NY 14450

Humane Society of Santa Clara
Valley, Wildlife Program
3001 Ross Ave., Rm 15
San Jose, CA 95124

Phoenix Bird Rehabilitation Center
1821 Kenwood
Arlington, TX 76013

Preservation and Wildlife Society
RD #1, Hainesport-Mt. Laurel Rd.
Mt. Laurel, NJ 08054

Raptor, Inc.
2073 Harrison Ave.
Cincinnati, OH 45214

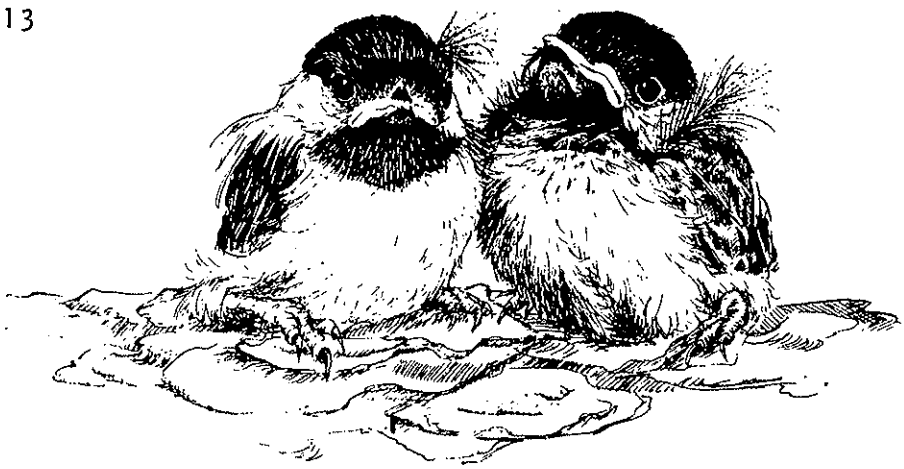
Salmonier Nature Park
P.O. Box 190
Holyrood, Newfoundland
Canada, A0A 2R0

Texas Wildlife Rehabilitation Coalition
108 Glenwood
Houston, TX 77007

Wilderness Research Rehabilitation Center
5004 S. Hamlin Gulch
Fort Jones, CA 96032

Wildlife Rescue Inc. of New Mexico
11200 Menaul Blvd.
Albuquerque, NM 87112

University of Guelph
Serials Section, Library
Guelph, Onatario, Canada N1G 2W1



WRC QUARTERLY MEETING

Date: October 9, 1982

Place: Palo Alto Jr. Museum,
Wildlife Rescue, Inc.
1457 Middlefield Rd.
Palo Alto, CA
(415) 329-2610
From Highway 101, take the Embarcadero Rd. exit west for approx. 2 miles. Turn right on Middlefield Rd. Museum is on the right hand side.

Time: 10:00 a.m. Business meeting
11:00 a.m. General meeting

Topic: Problem Sharing. Some of the subjects to be discussed are housing woodpeckers without tail damage, keeping shrikes wild and others.

Editorial staff: Ann Brice, Susan Kelly, Kathy Hobson, Tina Papenhause, Carol Hamilton.

Informational Literature

Copies may be ordered at a cost of 50¢ each unless otherwise noted. There is also a postage and handling fee of 50¢ for 1-5 copies, 75¢ for 6-10 copies, and $1.00 for more than 10 papers.

"Raptor Care"
"Care and Feeding of Orphaned Birds"
"Emergency Care of Birds and Squirrels"
"Vector Borne Disease Potential in California Mammals"
"Care of Sick and Injured Birds"
"Gardening to Discourage Deer Damage"
"Care and Feeding of Bushtit Babies"
"Necropsy Precautions and Procedures"
"Substitute Diets for Orphaned Birds"
"Substitute Diets for Orphaned Mammals"
"Care and Feeding of Orphaned or Abandoned Tree Squirrels"
"Fluid Therapy in Birds"
WRC Logo Sticker ($1.00)
"Hand-Raising Non-Domestic Mammals"
"A New Method For Exercising And Rehabilitating Raptor" ($1.00)
"Water Turtle Care Sheet"
"Initial Care of Injured or Oiled Water Birds"($2.00)
"Raptor Care and Rehabilitation" (Bound, $15.00)
"Avian Drugs and Dosages" ($4.25)
"Opossum Rehabilitation" ($2.50)
"Raccoon Rehabilitation" ($3.50)
"Goldfinches" ($2.50)
"Immobilization of Simple and Compound Fractures in Songbirds and Raptors" ($2.00)
"Immobilization of Simple and Compound Fractures in Mammals" ($2.00)

WILDLIFE REHABILITATION COUNCIL APPLICATION: (Please Print) DATE: _____

NAME: _____ OCCUPATION: _____ PHONE: (area) _____ Hm: _____ Wk: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____

ORGANIZATION: _____ YOUR TITLE: _____

TYPE OF MEMBERSHIP: ASSOCIATE($7.50)___ PROFESSIONAL($15)___ ORGANIZATION($20)___ RENEWAL___

Mail to: Wildlife Rehabilitation Council, P.O. Box 3007, Walnut Creek, CA USA 94598