

GRANDMA'S FLAXING TOO!

I have a slew of letters from readers who've embarked on omega-3 (w3) trials. A woman chiropractor in Berkeley writes: "I started chewing two teaspoons of organic flaxseed a day a few weeks ago, and my joints are very happy. Also, a 3-month-old slightly sore throat cleared up!"

A while back a reader from N.Y. City gave me a copy of a letter he had sent to very nice folks, Dave and Mildred Nelson of Omega-Life, Inc. who market Fortified Flax, a good flaxmeal product sold in health food stores and through vitamin catalogs. "Fortified Flax and a sharp reduction in saturated fats cleared my arthritis. This dietary regimen took six months to take hold. It was supplemented by swimming laps in a pool for about 30 minutes twice a week. As a result, the stiffness and discomfort in my left arm and right knee was reduced 100%. Pain in my fingers was cut about 95%...This improvement has held for about two years.."

A Santa Monica woman, who had been taking flaxmeal and flax oil regularly, still had red spots on her arms and a painful knee joint, until she decided to take emulsified cod liver oil. "I take a tablespoon a day -- 2 hours before or 4 hours after I eat -- no more red spots! My energy is up and I think my ankles are less swollen at the end of the day....I obviously can't make the chemical changes in flax." She refers to the forming of the highly polyunsaturated w3's, EPA and DHA, from Alena (alpha-linolenic acid), the parent w3 in flaxseed. Some of us may not be able to transform enough Alena into EPA and DHA, and may benefit from getting EPA and DHA directly, whether from seafood or supplements.

A university teacher of holistic healing studies writes that three students got rashes when first trying flaxmeal, but two were able to continue without further outbreaks. The third may have tried switching to flax oil but he hasn't heard from her yet. A number have reported quite beneficial effects. "An older student in menopause and getting hot flashes says that her hot flashes have all but disappeared. One male student who had been plagued by dry skin reports a huge improvement. One student said that he got his grandmother flaxing. She had stomach ulcers and was taking Zantac [prescription drug which inhibits gastric acid secretion]. With flaxing she found

she could stop taking Zantac. Others report an immediate increase in energy....Anyway, these reports are pretty anecdotal...and not publishable. I do believe them, but I think it is important to gather more substantiated data. I'm going to start collecting more formal reports, with documentation when possible. I'll keep you informed..."

My own flaxing m.o. is a rounded teaspoon each of flaxmeal and psyllium powder stirred into water or juice. Psyllium (as in Metamucil) is a concession to my lifelong spastic colon because flaxmeal alone moves things along a bit too briskly for me.

Prof. J. F. Carter, president of the Flax Institute of the U.S., informs me the 55th Anniversary meeting will be held at the end of January in Fargo, North Dakota. An update of research on flaxseed in human nutrition sponsored by the National Cancer Institute will be one of the featured presentations. Papers from past meetings have been invaluable; I'll be sure to report on the new ones. Until a few years ago, *human* use of flax wasn't on the Institute's agenda at all. A popular upsurge in consumption of flaxseed and flax oil has given new incentive to U.S. and Canadian scientists and flax growers. It couldn't happen to a nicer plant!

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BIRTH MEMBRANES & VITAMIN C

Potentially hazardous births sometimes occur because the amniotic sac ruptures while an infant is still preterm, not really ready to make its debut. Even with full term infants if the membranes rupture several days before a woman goes into labor, chances of infection go up for baby and mother.

The causes of premature rupture are not known, but a nutrition research group at a perinatal institute in Mexico City has a theory. Vitamin C is essential to the body's synthesis and repair of collagen, the marvelous protein that 'cements' our tissues. A pregnant woman has to make lots of collagen for the complex tissues supporting the fetus. In fact, amniotic tissue actively synthesizes collagen for its own growth and upkeep. However, membranes which break prematurely "are thin, have low elasticity and low collagen content, suggesting that [their] tensile property...is lower than in normal membranes," the researchers observe.¹

Aha! So what do smart scientists do? Of course! Look for a discernible nutrition connection. What they found was a "significant association" *between premature rupture and low concentrations of vitamin C in the women's leukocytes* (white blood cells). Moreover, there were more pregnancy-related infections among this group, compared with the women who had higher vitamin C levels and no premature rupture of membranes.

Most interesting of all, *the lowest vitamin C value in this study was far above the value that reflects deficiency*. None of the women had clinical signs of vitamin C deficiency. They all ate some fruits and vegetables, as many Mexican people do. Although no detailed dietary survey was done, it's entirely possible the women may have consumed the RDAs for vitamin C in pregnancy, a measly 70 mg/day. Clearly, the researchers imply, it may not be enough!

Forty-some years ago, when my first child was born, my husband and I were living with my parents on their orange and chicken ranch in California's Simi Valley. I had a glass of freshly squeezed orange juice every day (124 mg vitamin C per 8 oz.) plus other fruits and vegetables. The small town doctor I went to didn't prescribe vitamins. I was tired and worn from a ten-day heavy cold when "my water broke." Labor didn't begin until the next day. I was so exhausted afterwards

I had to stay in the hospital bed for a week and was still below par months later. I have news for the experts at the Food & Nutrition Board who prepared the Tenth Edition of the RDAs (1989): 70 milligrams ain't enuff! Not for pregnant women, not for unpregnant ones, not even for little kids and babies. Not if you want sturdy, resilient tissues and blood vessels, plus strong resistance to infections!

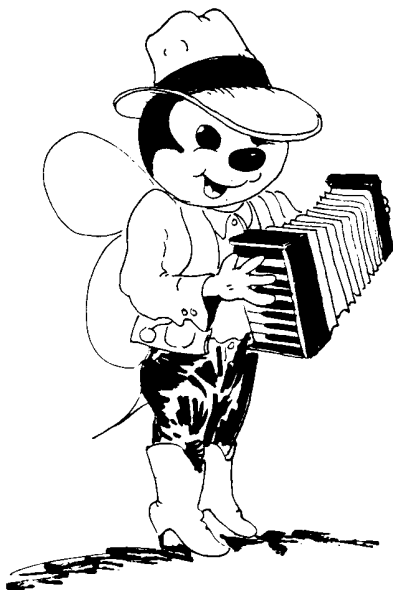
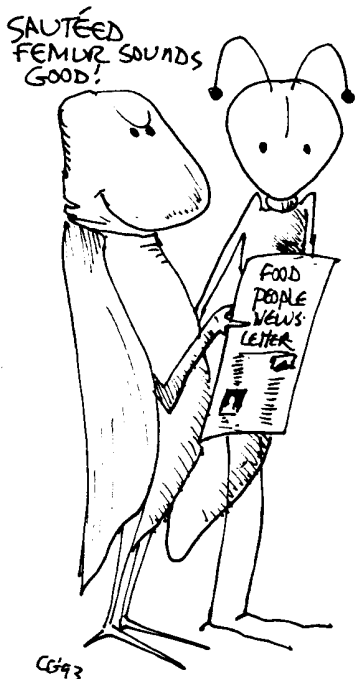
Dr. Linus Pauling wrote in his 1986 book *How to Live Longer and Feel Better* that an animal weighing as much as an average man will synthesize about 10,000 milligrams of vitamin C a day. (A small animal makes less, a large animal more, in proportion to its size.) Besides making their own vitamin C, most animals get goodly amounts of it in their diet. Are we so different, say, from small monkeys in laboratories who need up to 3500 mg a day to thrive because, like us and all primates, they can't synthesize vitamin C? (See FL #28.)

I've been taking between 2000 and 10,000 milligrams of vitamin C daily for many, many years. When I'm fighting off a cold or flu, I take lots more.* I'm convinced I've avoided a lot of illness and age-related stiffening and breakdown of tissues. I wish I had started before my first baby was conceived!

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*Caution: Individuals who have the inherited trait "G6PD deficiency" may suffer damage to red blood cells from vitamin C in amounts over 1000 milligrams. On the other hand, vitamin E in daily amounts of 400 to 800 IU has been shown to strengthen red blood cells and reverse anemia in these individuals.

(1) Esther Casanueva et al., *European Journal of Clinical Nutrition* (1991), 45, pp 401-405.



ARE YOU LISTENING, BURGER KING?

I've been receiving unsolicited but appreciated issues of *The Food Insects Newsletter*, a scholarly little publication from the Department of Entomology, University of Wisconsin, Madison, Wisconsin 53706, that leaves little to the imagination. Examples: "With a little soy sauce and a dash of paprika, a fried grasshopper tastes something like a little soy sauce and a dash of paprika." Or, "They taste like a huge sunflower seed," writes a consumer of four legless and headless hoppers. "I think McDonalds should pick these up. It could be like McGrasshopper."

Actually, there's serious stuff, such as rundowns on world populations where insects and grubs make sizable contributions to diet. A Peace Corps volunteer in Zaire found palm grubs, grasshoppers, and termites available in local markets and even in a "fashionable night hot spot" in Kinshasa, Zaire, where insects "are regularly sold as a bar snack." She reports that grasshoppers and termites fried in palm oil with a bit of hot pepper and salt "are a better complement to a cold beer than any 'Frito-Lay' product." Even though she hasn't tried *live* termites herself, she's been told they taste much like bacon.

Well, now that I've piqued your appetite (hah-hah), guess what insect eaters are getting, besides protein, minerals, etc.? W6 and w3 essential fatty acids, that's what. The March 1991 (Vol IV, No. 1) issue is devoted mainly to fats in major insect species. A notable feature "is the very high ratio of linoleic [w6] and linolenic [w3] acids, higher in general than found in poultry and fish." Also, many species apparently convert these parent fatty acids into longer-chain polyunsaturated ones and thus, like ourselves, contain EPA and DHA (w3) and arachidonic acid (w6). It seems insects use the fatty acids for the same membrane needs and prostaglandin functions that we do!

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MEDICINE'S STEPCHILD

I attended a meeting of the local celiac sprue support group, pigging out happily on a potluck luncheon of nongluten goodies as we listened to the invited speaker, a San Francisco specialist in bone metabolism. Celiac sprue is one of the names for an inherited intolerance to gliadins, a group of complex proteins from gluten in grains, that results in damage to the digesting and absorbing layers of the middle section of the small intestine (the jejunum). Many celiacs who were not diagnosed until middle age suffer from decreased bone density. During the years they were innocently eating the offending high gluten grains (mainly wheat, rye, and barley, and to a lesser extent, oats), they couldn't absorb nutrients properly including those needed to build and maintain a strong skeleton. In middle age especially in women the damage accelerates. Hence the speaker on bones.

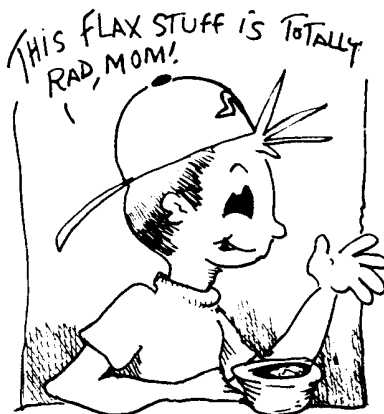
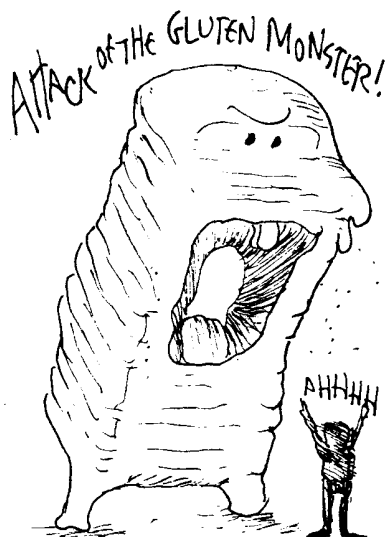
From questions directed to the doctor as well as my conversations with table companions, I had the impression many in the group of about 30 persons felt they've had a tough time finding physicians who are knowledgeable or, worse yet, even interested in gluten intolerance. Sadly, a number of them had been ill for many years, some developing life-threatening ailments like cancer and kidney failure, and were middle-aged before the possibility of celiac disease was raised and finally confirmed. (Cancer and kidney ailments show a statistical connection to untreated gluten intolerance.) The bone specialist himself admitted knowing little about their specific problem, nor could he recall offhand any doctors he knew to be experts in the field.

A reader who lived in England tells me there's more awareness in the U.K., where an estimated 1 in 300 are celiacs. Doctors there seem more willing to test for it in workups, at least when challenged with the kinds of soup to nuts ailments many celiacs present that defy diagnosis and treatment.

On a strict glutenfree diet the intestinal walls can be restored to normalcy. Most of the literature emphasizes the lifetime nature of inherited susceptibility to gluten. A 1991 study by Italian and British doctors, "Compliance of adolescents with coeliac disease with a gluten free diet," found that of 123 young folks, 65% were strict, 11% occasionally ate bread and cake, and 24% ate gluten foods regularly. Even though the "occasional" group had few clinical symptoms, they and the non-compliers had characteristic damage to the jejunum (*Gut*, 32, 881-885). I was intrigued by the Italian researchers' comment that the cost of glutenfree products should not be a barrier to compliance. "In Italy, any coeliac patient regardless of age receives glutenfree products free for life under the national health system." Hmm.

The ailment, identified only in the 1950s, has gotten short shrift in the U.S. medical community where much research on nutrition-related matters is funded by food industry giants. (My goodness, could there be a connection?) In FL #73 I explored the unlikelihood that our gatherer-hunter progenitors who got their starches from abundant large nuts, roots and tubers would have paid any attention to tiny seeds of grasses requiring tedious harvesting and preparation. Only after people in certain warm regions had to begin planting crops to feed their burgeoning numbers did the grains begin to be valued. Five to ten thousand years of agriculture is a blink of an eye in terms of evolution. Many folks undoubtedly adapted to the strange gliadins in grains which weren't in their foodstuffs before, but I wouldn't be surprised if many could not. I suspect some day we may learn there's a 'continuum' of sensitivity to gluten in people, ranging from problems arising only after years of relentless daily consumption (the rule today!) all the way to severe damage from even a speck, but until there are willingness and money to do extensive studies we'll have to fall back on common sense. Nowadays my rule of thumb is, if you've been plagued with ailments that resist all medical, nutritional, psychological or spiritual offices, try giving yourself a vacation from the high gluten grains for six months. If you can find a specialist who's willing to do necessary testing, great. Otherwise, keep in mind this dictum: Nobody has ever died of a gluten deficiency!

Check your library for lists of "safe" foods and those known to cause trouble in the gluten-sensitive. Incidentally, "spelt" and "kamut" are species of wheat, sorry. Local folks who're interested in attending monthly potluck (and recipe exchange) meetings of the Sprue Group of the Bay Area can call Ellen Switkes at 510/655-0215. *



GLA: A GOOD FAT

David F. Horrobin, M.D., in his review, "Nutritional and Medical Importance of Gamma-linolenic Acid" (*Progress in Lipid Research*, Vol. 31, 1992, pp 163-194, 402 references), explains why the latest research awards gamma-linolenic acid (GLA) a key role in the remarkable regulatory system conducted by the essential fats we get from food. GLA is an omega-6 (w6) fatty acid whose metabolites produce a dizzying bunch of effects. (The significant amounts in breast milk give us a hint of its importance.) In normal health, our bodies make it by removing hydrogen atoms from (desaturating) the primary w6, linoleic acid (LA).

I know I've written reams about the other family of essential fats, the w3's, but that's been in an effort to redress their long neglect by the medical community and alert us to the harm created by their disappearance from diet. I'm pleased that we're seeing a surge of medical interest in the w3's, a growing market for fish, fish oil supplements and flaxseed, and widespread availability of a respectable w3 source, Canola oil. One might call it the beginning of a turnaround.

Both families of w3 and w6 fats modulate membrane structure in each cell of the body. Both are the only fats that become the mighty prostaglandins, leukotrienes, etc. -- the short-lived regulatory molecules affecting functions in every tissue. The w6 play a more crucial role than the w3 in waterproofing the skin. Also, prostaglandin E1, a metabolite of GLA, has a unique cholesterol regulating action: It can inhibit cholesterol biosynthesis, as well as stimulate cholesterol's removal from the blood into cells where it's needed.

While LA is plentiful in whole grains, nuts and seeds, GLA is scarce. Vital functions, however, depend less on LA itself than on GLA and its metabolites DGLA and the E1 prostaglandins. When there's a hitch in transformation of LA to GLA, a host of disorders ensues. Unfortunately, factors known to interfere are legion: ageing, viral infections, high cholesterol levels, diabetes, high alcohol intake, and high levels of stress-induced adrenal hormones, e.g. cortisol and adrenaline. Nutritional antagonists include not enough B6, zinc, magnesium, biotin, and calcium, and too many *trans* fats.

Dr. Horrobin provides convincing evidence that supplements of preformed GLA are the simplest way to get around meagre or faulty GLA biosynthesis. Here are some clinical benefits of supplementation, most of them related to effects produced by the resulting increase of E1 prostaglandins:

- Improvement in atopic eczema.
- Progressive improvement in nerve function in diabetics.
- Relief of premenstrual syndrome and cyclical breast pain.
- Anti-inflammatory effect in arthritic disorders.
- Lowering of high blood cholesterol and high blood pressure; decreasing platelet aggregation.
- Improvement in viral illnesses, particularly when GLA + EPA (an w3) were taken together. After 3 months, 85% of patients with post-viral chronic fatigue syndrome improved, compared with only 17% on placebo.
- In double-blind placebo-controlled trials of alcoholics undergoing withdrawal, "GLA reduced the severity of...symptoms, reduced the requirement for tranquiliser use, and accelerated the return of liver function to normal." In those who remained abstinent, "there was a significantly better recovery of cerebral function, of memory and of visual-motor coordination."
- Evening primrose oil, a source of GLA, consistently inhibits cancer growth and development when fed to animals. Research trials in human cancer patients are under way.

Happily, the safety and lack of side effects of supplementation are well documented. A healthy adult can make 100 to 1000 mg/day of GLA from LA. Horrobin says daily supplemental GLA of at least 25 to 50 mg would make a useful contribution nutritionally. For therapeutic purposes, "one would perhaps aim in the region of 100-500 mg/day."



NOTE: AN ORPHAN DISEASE IS ONE THAT ENDANGERES MANY PEOPLE BUT IS SELDOM WRITTEN ABOUT.

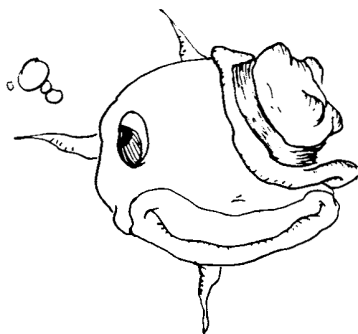
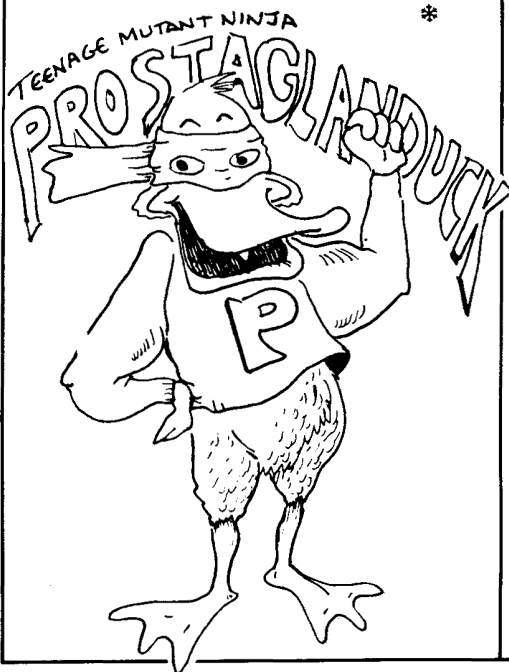
GLA & Infant Milk

Human milk is unusually rich in the w6's GLA, DGLA, and AA (arachidonic acid); and in the w3's EPA and DHA. A baby consuming a litre of breast milk a day will get 100-400 mg of GLA plus DGLA, and about 250 mg EPA plus DHA. A baby on formula gets essentially none of the above. I've written before about researchers' concern that formulas by not providing the long-chain polyunsaturates may be compromising the young infant's eye and brain development (*FL's* #69 & 71). Now that I've read Horrobin's enlightening review, I would include the importance also of adding GLA to formula. "In Japan, Snow Brand produce a baby milk to which Efamol evening primrose oil has been added to provide GLA; this product has approximately 30% of the Japanese infant formula market," Horrobin writes. One step, at least, in a good direction.

A Matter of Balance

While medical researchers don't agree on what an optimal w3 to w6 dietary ratio is, all concede that excessively high w6 intake suppresses w3 metabolism. But the reverse may be risky too – in non-Eskimo populations. Greenland's Eskimos, on whom the first research on fish oils was based, have the unique ability to maintain high levels of DGLA in spite of huge w3 intake. For non-Eskimo people, Horrobin says very high doses of fish oils may raise tissue levels of w3's EPA and DHA "at the expense of a serious lowering of the level" of DGLA. The result would be suppressed biosynthesis of E1 prostaglandins from DGLA. Without their benign actions described earlier, potential benefits from the w3's could be aborted or minimized.

The doctor has a sensible solution. A number of studies now show that by "giving evening primrose oil with fish oil" it's possible to elevate all three: DGLA and EPA and DHA! He says this comes much closer "to imitating the desirable situation in Eskimos" whose freedom from heart attacks is the new gold standard.



HANG ON TO YOUR TONSILS!

The yanking of tonsils and adenoids was pretty much routine when I was a kid. For many of us age 3 or 4, it was our first memory: being strapped to a hard white table while strangers in white coats hovered over us (where did Mommy go!), the suffocating ether mask clamped over nose and mouth, the weird ether-induced dreams, and afterwards an awful raw throat which even vanilla ice cream didn't soothe.

I thank my lucky stars I discovered Adelle Davis' books in time to enable my own three kids and little stepson to avoid this ghastly ordeal. My stepson came pretty close. Marc was just under five years old when I married his father. In the past he'd had frequent ear infections, chronically enlarged and infected tonsils, was a mouth breather, and had been scheduled for the surgery. Fortunately it was postponed because of chickenpox. By the time he was ready to be rescheduled, I'd had many months to ply him with vitamins A, B-complex, C, and E; calcium, magnesium, zinc and other minerals, and big changes in the family fare. I wrote in *FL* #2: "...there was also a fiendish high-octane Adelle Davis special called 'tiger's milk,' which blended blackstrap molasses, brewer's yeast, lecithin, milk, and bananas in a brown brew that could raise the dead. The kids hated it to a man. It took martial law to get it down. As solace, they got home-baked cookies in which similar nutritious time-bombs were so cleverly insinuated the children thought they were being rewarded."

Marc's colds, tonsillitis, and earaches stopped. His tonsils and adenoids cleared up and shrank to normal size. All the kids kept their tonsils and adenoids.

I saw a headline a few months ago that made me want to cheer: "Medical research suggests doctors leave tonsils alone." For generations, the article said, tonsillectomy was a childhood rite-of-passage, so routinely was the operation done, yet it's a potentially dangerous procedure because of anesthesia and bleeding problems. At best, it is painful and traumatic. Nowadays, since the recognition that tonsils and adenoids are important lymph glands in the body's immune defense system, the article said, the rate of tonsillectomy has dropped to 1 for every 1000 children under age 15. Antibiotic treatment, of course, which wasn't available when I was a child, is part of the reason. Still, the article

explains, surgery may be the only option if antibiotics can't keep tonsillitis from recurring.

Hold it, folks! I say try a little Adelle Davis on the kiddo first. Better yet, apply the nutrition and supplement advice of pediatrician Lendon Smith, M.D., whose books have brought Davis's great pioneering concepts up to date. Allergies to cow's milk and wheat (probably to gluten, actually, but it's seldom tested for) have been found to lurk as secret villains behind many a child's persistent ear infections, stuffy nose, and repeated bouts of inflamed tonsils. Let's practice *conservative* medicine, i.e., let's see what good, non-allergenic food and a trial of supplements and herbs can do for the child before we let the orderly wheel him or her down the hospital corridor into surgery.

Currently, there's a strong drive in the U.S. against routine circumcision of baby boys when no religious tradition is involved, and sometimes even when there is. Alice Walker and many others are writing passionately about the need to end another ancient practice, the gruesome circumcision of *female* children as well. I'm beginning to see it as all of a piece with the bloody business of routinely yanking out a child's tonsils and adenoids (thankfully decreasing now). What a relentless drive through the ages by the 'experts' to improve on nature! The truly wise are humbled by their awareness of the magnificent, ordered complexity of natural things....like tonsils. * *



Illustrations by Clay Geerdes and other artists as noted.

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