

# A Mexican Curandera in Arizona

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A curandera is a person who cures using medicinal plants, charms, massage, faith healing, or a combination of these. The practice of a curandera is a provincial one that is generally passed from generation to generation. It is a practice which is still common among Mexican-Americans.

The modern curandera's expertise is a result of the customs and knowledge of medicinal plants passed from generation to generation, modified by European influence and an increasing general knowledge of modern medicine. Today, a number of popular books on the use of medicinal plants are sold in Mexico (e.g., Cuevos, 1913; Martinez, 1969; see also Krochmal et al., 1954). With increased immigration to the southwestern United States much Mexican culture is being adapted and modified to a new life in the United States, and the traditional use of native plants is no exception.

For a period of four years I observed a curandera practice her trade in a small central Arizona town. She immigrated from Mexico over 50 years ago, but still has a thriving practice in provincial medicine and midwifery.

The curandera, Maria de la Luz<sup>1</sup>, was born in the vicinity of Monterrey, Mexico about 78 years ago. She was orphaned at the age of seven and subsequently lived with an aunt. She learned much of what she knows about medicinal plants and midwifery from her aunt. By the time she was thirty, she and her family were migrant farm workers in the western United States. It is not hard to imagine the important role she may have played among the transient Spanish-speaking farm workers. Many were without medical insurance, and being in the United States illegally, were unable to take advantage of inexpensive or free medical treatment because of the fear of deportation. It was not until the mid 1960's that her family settled in central Arizona. In addition to her knowledge of medicinal plants she is a skilled midwife, having participated in numerous deliveries in Mexico and the United States. She also delivered six of her own seven children.

Despite readily available medical treatment in the United States, her services are still sought by many Mexican-Americans in her community. Clarke (1959) has attributed the continued use of provincial medical practices to the persistence of Mexican cultural beliefs in causal factors of disease. Persons visiting curanderas frequently believe that illness can be caused by a disruption of social relations, or "evil eye." Other factors might also contribute to the continued use of the provincial curandera. Paramount among these is that the curandera communicates well in Spanish. Often a trip to a monolingual English-speaking doctor by an equally monolingual Spanish-speaking patient is frightening to the patient, as well as ineffective. The patient may not understand what is being said or done. No communication gap exists in the case of the curandera. Also, many of the treatments used by the curandera are known to the patient, as well as the effects that the treatment should have. Finally, the curandera and the patient often share religious beliefs. Prayer commonly accompanies the administering of herbal medicine and is often considered an essential part of the treatment. Finally, the curandera offers an explanation of the illness, whether scientific or otherwise. Providing an acceptable explanation for the cause of an illness may psychologically diminish its seriousness. If an illness is difficult to explain, evil eye (i.e.,

<sup>1</sup>This is a fictitious name substituted for the real one to protect the curandera's identity. In the United States some of her work might be construed as practicing medicine without a license.



disruption of social relations) is often invoked as an explanation. Evil eye is the only non-scientific belief in Maria's diagnoses, most ailments being attributed to some rational cause.

The diminished use of charms and non-scientific diagnoses in Maria's healing is due to her exposure to modern medicine. In fact, some of her treatments are modified or supplemented with manufactured pharmaceuticals. It is interesting that despite her use of pharmaceuticals, her clients have generally not sought professional doctors. The use of modern pharmaceuticals is an admission that the illness is physical and requires no incantation, insight by the curandera, or charm, to right the socially disruptive situation before health returns. This seems to reduce the importance that Clarke (1959) has placed on the continued belief in social disruptions as a primary cause of illness.

Visits to the curandera are a relatively simple procedure. Whether or not the patient is known to the curandera (more often than not the patient is known or has been referred by an established client) the curandera is approached usually at home and informed of the problem. The patient is then given herbal medicine, massage, prayer, a charm, or a combination of the above. At the end of each visit small monetary remuneration can be given, more a symbol of appreciation than payment.

The following is a list of the most common herbal treatments used by Maria. The general headings are direct translations from Spanish. The Spanish name used by Maria and the scientific name are given for most herbs. Alternative treatments for a particular illness are also given, i.e., if one does not work the other is tried. In compiling the present list, any treatment that has been greatly modified or supplemented by modern pharmaceuticals has been eliminated. It must be kept in mind that many of the treatments are administered with prayer, even when pharmaceuticals are given. In some cases prayer is merely supplementary and not considered essential to the healing process. On the other hand, prayer may be considered by the curandera to be an essential part of a specific treatment, in which case it is so listed below as a part of the specific treatment.

All treatments listed are for the historical record only, and are NOT given for treatment purposes or as recommendations. Persons using herbal remedies run the risk of using a misidentified or inappropriate plant, with the result that serious damage to the body or death may occur.

#### ASTHMA

1 purple Cebolla = Onion (*Allium cepa*)  
1 quart fresh tomato juice  
1 teaspoon vinegar  
2 quarts water  
Blend and use as a drink.

#### ATHLETE'S FOOT

½ cup hojas de Gobernadora = leaves  
of Creosotebush (*Larrea tridentata*)  
1 gallon water  
Boil the leaves in the water. Let cool. Soak feet as desired.

#### BURNS

1 hoja de Zabala  
= leaf of Medicinal Aloe (*Aloe vera*)  
Remove the pulp of the Zabala leaf and apply directly to the burned

area.

#### CANCER

1 quart tomato juice  
1 purple Cebolla = onion (*Allium cepa*)  
1 tablespoon vinegar  
1 tablespoon limewater  
(as used for preparing Maize)  
Blend the above ingredients and drink 2–3 times daily until there is noticeable improvement.

#### CHARMS

The only charms that Maria uses are Alum (described below) and a whole egg (see section below on headache due to evil eye). When alum is used, a crystal of it is placed in a sock or small cloth. The patient is then lightly rubbed from head to toe while Maria prays (usually the Roman Catholic Creed, recited three times). This is done each day for three days. Each night (and subsequent to the three days) the alum (in the cloth or sock) is then placed under the head of the patient when preparing to sleep. This is done until health returns (usually no longer than 8–9 days). When the patient has recovered the charm is then placed on a flat griddle and melted. The form that the alum takes after it is melted and cooled is interpreted with regard to the illness and then discarded in no special manner. This charm is used for a wide variety of ailments, especially for evil eye.

#### COUGHS

1 hoja de Zabala  
= leaf of Medicinal Aloe (*Aloe vera*)  
Remove pulp from inner part of leaf. Discard the remaining part of the leaf and eat the pulp.

#### CRAMPS

For cramps, a tea can be made from any of the following herbs. Before drinking the tea the Roman Catholic Creed should be recited three times.

- Anise de Estrella = follicles and seeds of Star Anise (*Illicium verum*).
- Yerba Anise = leaves and branches of Star Anise (*Illicium verum*).
- Albacar or Albahacar = Basil (*Ocimum basilicum*)
- Yerba Buena = Spearmint (*Mentha spicata*)

#### CONTRACTION OF JOINTS

Yerba del Negro (*Sphaeralcea coulteri*)  
Hojas del Alamo = Poplar (*Populus* sp.)  
Boil the ingredients in equal proportions in water. Then apply warm to the joint or allow the joint to soak.

#### MUSCLE CONTRACTIONS (CRAMPS)

- Apply a soaking poultice of Hojas del Alamo = leaves of Poplar (*Populus* sp.) for 25 minutes every three days. Do not allow the solution to get cold. After each soaking, massage with petroleum jelly.
- Alternatively, apply a similar poultice made from Yerba del Negro (*Sphaeralcea coulteri*).
- Or apply a poultice of both of the above, combined with Palma Bendita = blessed foliage of Mexican Fan Palm (*Washingtonia robusta*), with a pinch of Antepolgestine (a commercial salve).

#### EAR-ACHE

2 small branches Ruda = Rue (*Ruta graveolens*)  
3–4 ounces olive oil  
Bring the Ruda to a boil in the olive oil. Cool and apply two drops to the ear.



### EMPACHO (INDIGESTION) AND LOSS OF APPETITE

Injierto de Mesquit = young branches of Mesquite (*Prosopis velutina*)  
Rosa de Castilla = petals of Rose (*Rosa* sp.)  
Roots of Cebolla = Onion (*Allium cepa*)  
Brew a tea from equal parts of the above ingredients and let cool.  
Give 2–3 cups per day for three days.

### FEVERS, COUGHS, AND STOMACH ACHE

- A tea is brewed from Flor de Sauco = flowers of Elderberry (*Sambucus mexicana*).
- Alternatively, a tea is brewed from Rosa de Castillo = petals of Rose (*Rosa* sp.).

### FEVER AND VOMITING

Place 4 orange seeds in 1 cup of water. Blend. Strain. Add sugar or honey to taste and drink twice a day. Prior to drinking the tea, massage the stomach and spinal column, also behind the knees and the elbow.

### FLATULENCE

A tea is made from one teaspoon of Salvia (*Salvia leucantha*) in one cup of water. Drink as desired.

### FRIGHT

A tea is made from Yerba de Anise = stems and leaves of Star Anise (*Illicium verum*).

### FRIGHT AND NERVES

- A tea is made from Flor de Tilo = flowers of Basswood (*Tilia* sp.).
- A tea is made from Flor de Asar (*Asarum caudatum*)

### HEADACHE WITH NAUSEA AND VOMITING

3 leaves Bay (*Laurus nobilis*)  
½ whole nutmeg (*Myristica fragrans*)  
½ teaspoon Manzanilla = Chamomile (*Matricaria matricarioides*, collected wild, or *M. chamomilla*, purchased)  
Brew the ingredients above in 1½ cups of water and drink as a tea.

### HEADACHE

4 flowers Rosa de Castilla = petals of Rose (*Rosa* sp.)  
2 small branches Malva = Cheeseweed (*Malva parviflora*)  
2 teaspoons Manzanilla = Chamomile (*Matricaria matricarioides*, collected wild, or *M. chamomilla*, purchased)  
Bring the above ingredients to a boil in one quart of water, brew for a while, cool. Apply as an enema.

### MIGRAIN HEADACHE, SHARP PAINS

2 small branches Ruda = Rue (*Ruta graveolens*)  
Chocolate (*Theobroma cacao*)  
Prepare chocolate to taste. Add the branches of Ruda and brew. Prepare three cups.

### HEADACHE AND NERVES

3 leaves Marrubio = Horehound (*Marrubium vulgare*)  
1 cup water  
Brew a tea, three leaves for each cup of water, for an hour. Cool and drink. The left-over leaves are placed with more water, brewed, then stored in a jar (with leaves) for later use.

### HEADACHE, WEAK JOINTS, BITTER TASTE IN MOUTH DUE TO FRIGHT

1 tablespoon anise  
1 slice orange, lemon, and grapefruit

2 small crosses of Palma Bendita = blessed leaves of Mexican Fan Palm (*Washingtonia robusta*) saved from Easter.  
Cook the above ingredients in 1½ quarts of water. Take as a tea for nine days.

### HEADACHE DUE TO EVIL EYE

A whole egg is placed in a cloth and the client (usually a child) is rubbed from head to toe while the Roman Catholic Creed is recited three times, each day, for three days. After the third day the egg is broken and placed under the bed or crib. The next day the egg is examined. If the egg is round and cooked it is a female evil eye. If the egg is oval and raw it is a male evil eye.

### HEMORRHOIDS

Flor de Sauco = Flowers of Elderberry (*Sambucus mexicana*)  
Yerba de la Golondrina = Spurge (*Euphorbia*, prostrate type)  
Bring ingredients to a boil. Cool. Use as a sitz bath or as an enema.

### INFECTION (PREVENTION)

- Boil equal parts of Yerba del Burro (*Calliandra* sp.), Yerba del Negro (*Sphaeralcea coulteri*), Hojas de Alamo (*Populus* sp.) and apply as a soaking poultice to the concerned area. Apply four soaks, followed with massage using petroleum jelly. Also good for injury to nerves.
- Alternatively, apply a poultice made from Yerba de Ormiga = Red Spiderling (*Boerhaavia coccinea*) to the concerned area.

### KIDNEY PROBLEMS

- Brew a tea from equal parts of Yerba de la Hormiga = Red Spiderling (*Boerhaavia coccinea*) and Retama (*Leguminosae*).
- Alternatively, combine equal parts Yerba de la Ormiga, Retama, and Cabello de Elote (corn silk). Bring one quart of water to a boil, then add ingredients. Turn off heat and allow to infuse. Strain. Drink at least two cups a day.

### MENSTRUATION

Prepare a tea from 2–3 small branches of Ruda = Rue (*Ruta graveolens*).

### MUSCLE SORENESS (GENERAL)

General muscle soreness is treated with a form of massage called "ventosas." Usually a medium to small wide-mouth jar is used and a candle. The candle is lit, covered with the jar, with the mouth of the jar on the sore area. As the candle burns the oxygen and produces a vacuum, the skin is drawn into the mouth of the jar. This suction jar is then moved over the sore area for one to three minutes. The procedure is repeated several times over the entire sore area.

### NASAL CONGESTION

Two or three seeds of Trompillo = Silverleaf Nightshade (*Solanum elaeagnifolium*) are crushed and added to a commercial nasal spray or to Manzanilla tea (see above). In the former case, the solution is allowed to stand for several hours and is then strained and sprayed into the nostrils.

### UTERINE PROBLEMS, PREGNANCY AILMENTS

A tea is made from Cascara de Encino = bark of Oak (*Quercus*, various species).

### VARICOSE VEINS FROM PREGNANCY

A tea is made from Yerba del Golpe = Evening Primrose (*Oenothera* sp.).

### CHILDBIRTH (PRE-DELIVERY)

Flor de Pena = Resurrection Plant (*Seselinella* sp.)



Yerba Buena = Spearmint (*Mentha spicata*)

Manzanilla = Chamomile (*Matricaria matricarioides*, collected wild, or *M. chamomilla*, purchased)

Cominos = seed of Cumin (*Cuminum cyminum*)

Brew the ingredients above and take as a tea.

#### IMPROVING EASE OF DELIVERY

$\frac{2}{5}$  Yerba del Negro (*Sphaeralcea coulteri*)

$\frac{1}{5}$  Anise de Estrella = Star Anise (*Illicium anisatum*)

$\frac{1}{5}$  Flor de Tilo = flowers of Basswood (*Tilia* sp.)

$\frac{1}{5}$  Lele (*Bombax ellipticum*)

Brew the above and take as a tea.

#### STOMACH ACHE

a) Three small branches of Epazote = "Mexican Tea" (*Chenopodium ambrosioides*) are boiled in water and three cups are drunk.

b) Alternatively, a tea is made of one teaspoon Manzanilla = Chamomile (*Matricaria matricarioides*, collected wild, or *M. chamomilla*, purchased).

c) Or a tea is made of three small branches of Yerba Buena = Spearmint (*Mentha spicata*).

#### STOMACH THIRST

Boil three small branches of Escobilla (*Bahia virgata*) in water and drink as desired.

#### STOMACH ACHE, FEVER, COUGH, INFECTION OF THE STOMACH, SWELLING

Boil three small branches of Flor de Sauco = flowers of Elderberry (*Sambucus mexicana*) and drink as a tea or apply topically.

#### SWELLING (GENERAL)

a) Boil Alfilerillo = Heron's Bill (*Erodium* sp.) in water and apply topically.

b) Alternatively, boil Hojas del Alamo = leaves of Poplar (*Populus* sp.) in water and apply topically.

#### TEETHING WHEN INFANT SWALLOWS SALIVA

Let the infant teeth on the root of Nopal = Prickly Pear Cactus (*Opuntia ficus-indica*).

#### TEETHING

a) Make a tea for the child to drink from equal parts of Rosa de Castillo = petals of Rose (*Rosa* sp.), root of Nopal = Prickly Pear Cactus (*Opuntia ficus-indica*), root of Tasajillo = Cholla Cactus (*Opuntia*, various species), and Cominos = seed of Cumin (*Cuminum cyminum*).

b) Alternatively, crush the following ingredients and rub on the gums of the child: 2-3 fruits of Trompillo = Silverleaf Nightshade (*Solanum elaeagnifolium*), 2 small roots of Nopal = Prickly Pear Cactus (*Opuntia ficus-indica*), Cominos = seed of Cumin (*Cuminum cyminum*), root of Cebolla = Onion (*Allium cepa*).

#### TONSILITIS

Rosa de Castilla = petals of Rose (*Rosa* sp.)

Palma Bendita = blessed foliage of Mexican Fan Palm (*Washingtonia robusta*)

Lemon juice

Glycerine

Make a tea and use as a gargle.

#### ULCER PAIN

Spoon out the pulp of one leaf of Zabala = Medicinal Aloe (*Aloe vera*), mix with lemon juice and honey (to taste) and drink.

#### WEIGHT LOSS

A tea is made from Cacao = Chocolate (*Theobroma cacao*).

Even after a casual perusal of the above list it is possible to recognize a number of common European plants: mint, anise, horehound, and cumin to name a few. Many of these are known spices or ingredients in herbal teas and were used in the pharmacopoeia of western Europe. Many of the plants that our drugs were first isolated from were originally used in provincial medicine. When the origins of our modern drugs are viewed in this light, the use of many subtropical and tropical plants by various peoples for curing, our curandera included, suggests that they might yield efficacious official drugs. The recent discovery of an antimalarial agent isolated from *Artemisia annua* is a case in point (Klayman, 1985). Although *Artemisia annua* is a widespread taxon of Compositae (also found in Arizona), this species is used as an antimalarial agent only in the Chinese pharmacopoeia. This new drug should prove useful for those allergic to other antimalarial drugs. Many scientists are in fact engaged in research on medicinal plants, searching for new drugs that may be efficacious in the cure of cancer or active against viruses and bacteria (DeVries, 1976). Although many of the plants used by Maria have been little studied with regard to their medicinal properties, a few show promise. The plant genus *Boerhaavia* has been found to contain an anti-viral agent, yet to be identified (Verma and Awasthi, 1980). This plant is commonly used by Maria, but is found less frequently in the pharmacopoeias of other curanderas. One of the more interesting reports is the hypoglycemic affect of Nopal = Prickly Pear Cactus (*Opuntia ficus-indica*; Ibanez-Camacho and Roman-Ramos, 1979). This may find use in the oral treatment of diabetes. Maria's husband was a diabetic who faithfully consumed nopales or their mucilage each day for the past 30 years, specifically for the treatment of his diabetes. He ate the young *Opuntia* pads, diced and fried in butter or oil, tomato sauce, onions, garlic and chile, or alternatively drank mucilage from *Opuntia*. He also took insulin injections but ignored the dietary restrictions that normally accompany treatment.

Much of the research on medicinal plants has centered on the isolation and identification of new drugs. However, one aspect of provincial medicine that has attracted little attention is methodology. Methodology is of particular importance in midwifery. Maria, as mentioned, is a skilled midwife. In the numerous births she has attended, there is a low occurrence of laceration of the perineum, which Maria attributes to her method of delivery, which includes use of herbs. The episiotomy, a surgical intervention, has become a standard medical procedure in hospital child birth to prevent laceration of the perineum. Avoiding the use of an episiotomy would reduce the risk of infection, the tearing of muscle, and formation of scar tissue: a situation that does warrant further research. Maria also uses massage (manipulation) in cases where the baby is not oriented properly for a normal birth. This method was only described to me by Maria, which unfortunately detracts

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## References

- Berenbaum, M. 1981. Patterns of furanocoumarin distribution and insect herbivory in the umbelliferae: plant chemistry and community structure. *Ecology* 62(5):1254–1266.
- Bowers, W. S., T. Ohta, J. S. Cleere, and P. A. Marsella. 1976. Discovery of insect anti-juvenile hormones in plants. *Science* 193: 542–547.
- Bowers, W. S., and M. Aregullin. 1987. Discovery and identification of an anti-juvenile hormone from *Chrysanthemum coronarium*. *Mem. Inst. Oswaldo Cruz, Rio de Janeiro* 82 (Suppl. III):51–54.
- Cotter, D. J., D. T. Sullivan, and R. E. Gomez. 1980. *Baileya in Landscapes*. New Mexico Coop. Ext. Service Guide H-704.
- Cotter, D. J., L. Finkner, and D. Sullivan. 1982. Germination and transplanting of *Baileya multiradiata*. *New Mexico St. Univ. Agric. Exp. Sta. Res. Report* 489:1–4.
- Grote, A. R. 1881–2. Moths collected by Prof. Snow in New Mexico with list of eudriini. *Papilio* 1:174–177; 2:64–65.
- Hill, D. W. Kim, H. L., and Camp, B. J. 1979. Quantitative analysis of hymenoxon in plant tissue *Hymenoxys odorata*, *Helenium hoopesii*, and *Baileya multiradiata*, poisonous range plants. *J. Agric. Food Chem.* 27(4):885–887.
- Hardwick, D. F. 1958. Taxonomy, life history; and habits of the elliptoid-eyed species of *Schinia* (Lepidoptera: Noctuidae) with notes on the Heliothidinae. *Can. Entomol. Suppl.* 6:1–116.
- Hardwick, D. F. 1972. The life history of *Schinia pallicincta* (Noctuidae). *J. Lepidop. Soc.* 26(1):29–33.
- Hardwick, D. F. 1983. A new species of *Schinia* (Noctuidae) from central Florida, with description of its life history. *J. Lepidop. Soc.* 37(2):148–154.
- Holland, W. J. 1937. *The Moth Book*. Doubleday, Dovan & Co. Garden City, New York.
- Kearney, T. H. and R. H. Peebles. 1960. *Arizona Flora*. 2nd Ed. Univ. Calif. Press. Berkeley. 1085 pp.
- McGinnies, W. G. 1980. *Native Desert Plant Flowering Seasons, Tucson Vicinity*. Office of Arizona Lands Studies. University of Arizona. Tucson.
- Pettit, G. R., C. L. Herald, G. F. Judd, G. Bolliger, L. D. Vanell, E. Lehto, C. P. Page. 1978. Antineoplastic agents. 52. *Baileya multiradiata*. *Lloydia* 41(1):29–36.
- Schmutz, E. M., B. N. Freeman and R. E. Reed. 1960. *Livestock-Poisoning Plants of Arizona*. Univ. Ariz. Press. Tucson.
- Welsh, S. L., N. D. Atwood, S. Goodrich, and L. C. Higgins (eds.) 1987. *A Utah Flora*. Great Basin Naturalist Memoirs. No. 9. 894 pp.

## A Mexican Curandero

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somewhat from its credibility. However, I witnessed an Italian midwife perform a similar procedure on a breech presentation with success. The attending doctor was preparing for a Caesarean section at the time. There seem to be threads of consistency among methods in provincial medicine that transcend cultural boundaries. Unfortunately, the value of such procedures and their possible applications to modern medicine have been little studied by professionals. Knowledge of methods used by curanderas and midwives rarely reaches the modern physician and when it does it is in the form of an anecdote, which detracts from its credibility. In many cultures these procedures are often associated with ritualistic incantation or preparation, an aspect of provincial medicine that makes it difficult, if not undesirable, to study by a professional. Nonetheless, the modern physician is confronted by many of the same problems facing curanderas and midwives. The curandera and midwife have the benefit of the experience of numerous generations. Experience, when finally studied, may prove to have been of more value than previously comprehended. Attention should be given to the medicinal plants used by cultures that inhabit tropical and subtropical regions of the world. Such regions have the most diverse of all floras and have had countless generations of provincial experience. Nevertheless, the plants and their medicines have been little studied scientifically. It is not

mere coincidence that plant families singled out as having medicinal properties by diverse cultures of the tropics are often the same, and used for similar ailments. The medical effects are real and have been repeatedly discovered and re-discovered by unrelated peoples.

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### Literature Cited

- Clarke, M. M. 1959. The social functions of Mexican-American medical beliefs. *California's Health* 16: 153–155.
- Cuevos, B. 1913. *Las Plantas Medicinales de Yucatán*. Mérida.
- DeVries, J. 1976. Ancient Aztec remedies were effective, doctor says. Newspaper article. *Arizona Republic*. June 1, 1976, page 8–26.
- Ibanez-Camacho, R. and R. Roman-Ramos. 1979. Hypoglycemic effect of *Opuntia cactus*. *Arch. Invest. Med. (Mex.)* 10: 223.230.
- Klayman, D. L. 1985. Qinghaosu (Artemisinin): An antimalarial drug from China. *Science* 228: 1049–1055.
- Krochmal, A. S., S. Paur, and P. Duisberg. 1954. Useful native plants in the American Southwest desert. *Econ. Bot.* 8: 3–20.
- Martinez, M. 1969. *Las Plantas Medicinales de Mexico*. Ediciones Botas. Mexico City. 657 pp.
- Verma, H. N. and L. P. Awashti. 1980. Occurrence of a highly antiviral agent in plants treated with *Boerhaavia diffusa* inhibitor. *Canad. J. Bot.* 58: 2141–2144.