

**SELECTED NOXIOUS AND POISONOUS PLANTS  
OF CONCERN TO NEW MEXICO**

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## INTRODUCTION

Noxious and poisonous plants are a significant problem facing the livestock industry in New Mexico today. These plants lower productivity of rangelands and subsequently decrease red meat production.

Some noxious and poisonous plants are more competitive than palatable plants in the quest for water and nutrients, thereby reducing palatable forage for livestock. Those that are poisonous cause losses through actual livestock deaths; but the most serious problem to the rancher is the loss of livestock weight gains due to sickness and lowered vigor caused by plant poisoning.

Noxious and poisonous plants have always been present on New Mexico rangelands, but many are increasing in distribution and in density. Along with the spread of native noxious and poisonous species, New Mexico is being invaded by exotic noxious and poisonous plants. Some of these newly introduced species may have the potential to invade waterways and croplands as well as rangelands.

Under the Federal Noxious Weed Act of 1975 (P.L. 93-629), the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service, Plant Protection and Quarantine Programs, was delegated the responsibility of designating certain foreign plants as weeds and preventing their entrance into the United States. The USDA also has the responsibility of surveying for noxious introduced weeds that may have been present in the United States at the time the act was passed or may have entered since passage of the act. A survey was conducted from May through September of 1979 by the New Mexico Department of Agriculture in cooperation with the USDA to ascertain the presence of certain introduced noxious weed species in New Mexico and to delimit the infestation of those present. Concurrent with this survey, selected species of native noxious weeds were also surveyed to provide information to ranchers, land managers and scientists detailing the extent and location of areas infested with these plants.

After consulting with range, agronomy and botany specialists within the state, a list of nine exotic noxious species of primary concern and a list of 17 native noxious species was compiled.

### Methodology:

After compiling the two lists of noxious plants, letters were written to range and agronomy specialists in New Mexico informing them of the purpose and objectives of this project and asking for available information concerning the listed plant species. A literature and herbarium search was also conducted utilizing herbariums from New Mexico State University, the University of New Mexico, Western New

Mexico University and various herbariums of the Federal range management agencies. Using information collected from these sources, the survey was conducted in the following manner.

In 1979, New Mexico consisted of 32 counties having a total land area of approximately 121,412 square miles. Because four people were required to cover this large area in a period of three months, it was felt that major roadways and other areas of high risk should receive the most attention. These high risk areas were defined as roadways, ports of entry, railroad right-of-ways, mines, wildlife reserves, cattle rest stops, feed yards, farm and ranch improvements, rivers and irrigation channels, agricultural experimental stations, disturbed sites, and areas adjacent to the Mexican border.

Using the collected information and information on the physiology and habitat requirements of the species in question, counties were surveyed in a manner that would maximize the probability of finding the plants. A proportional amount of time was spent in each county, with an average of 65 stops per county. A total of 2,080 stops were made during the summer. Each survey technician worked one county at a time, stopping at 5-mile intervals on interstate highways and 10-mile intervals on other improved roads. At each roadside stop, an area of approximately 2 acres was visually examined for the weeds in question. The survey was conducted both within and outside the right-of-way. The area inside the right-of-way was scrutinized to detect any noxious plants growing there because of additional runoff from the road or the high risk nature of the site. The survey on rangelands was to detect any native species in question and to note the spread of any introduced species away from the road. Deviations from this basic plan were made by the technician when necessary to sample all habitats. In addition to the regular roadside points, stops were made at the other high risk areas. Alfombrilla has been noted in Mexico reasonably close to the New Mexico border, so the search for alfombrilla was much more intense, taking in both sides of the border and using the same survey procedure at each stop.

Locations were recorded and specimens for positive identification were taken from the site of each finding. The survey findings are shown in graphic form on distribution maps for each species found in New Mexico. Herbarium mounts of each plant species were made and are on file with New Mexico Department of Agriculture and in the herbarium of the New Mexico State University, biology department.

Consult the New Mexico Department of Agriculture, the county extension agent or New Mexico State University College of Agriculture and Home Economics researchers for control of these various weeds. No one herbicide will always provide satisfactory results for all species under various environmental conditions, but research is being conducted to continually improve the effectiveness of herbicides and other methods of control.

SELECTED NOXIOUS AND POISONOUS PLANTS  
OF CONCERN TO NEW MEXICO

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Peganum harmala

African Rue

Zygophyllaceae

Description:

African rue is a much-branched perennial herb of the caltrop family (Zygophyllaceae). The alternate, finely dissected, succulent leaves are glabrous. The flowers have five white petals. The fruit is a two, three, or four-celled, many-seeded capsule (Cory 1949).

Distribution and Habitat:

African rue is a native of north African and Asiatic deserts. The first report of its presence in North America was in 1935 near Deming, New Mexico (Kingsbury 1964). It is found on salty clay, clay loam, and sandy soils. African rue has spread to Texas and Arizona and is scattered throughout much of southern New Mexico.

Toxic Principle and Clinical Symptoms:

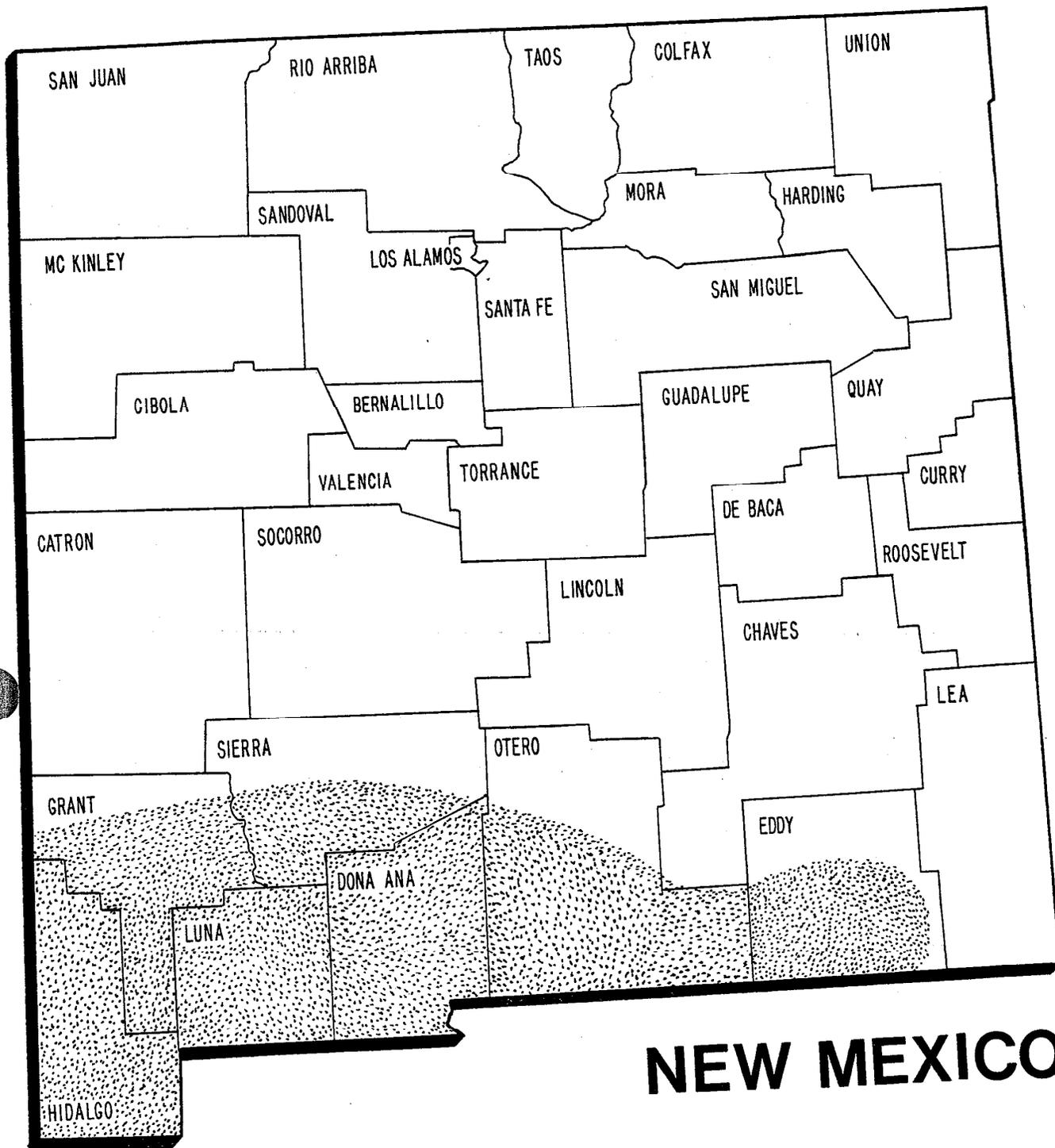
African rue has been proven to be poisonous by experimental feeding to domestic ruminants. The seeds are more toxic than the leaves or stems. The leaves of young plants are more toxic than leaves of the mature plant. This plant contains the alkaloids vasicine, harmaline, harmine, and harmalol. Signs of chronic poisoning include loss of appetite, listlessness, weakness of hind legs and knuckling of the fetlock joints. In acute cases of poisoning, usually caused by eating the seeds, stiffness, trembling, incoordination and frequent urination occurs. The temperature is subnormal, there is excessive salivation and the lower jaw and muzzle may be wet. There is severe gastroenteritis and a congestion of the kidneys. Hemorrhages are present under the capsule of the liver. The lungs are congested and usually there are hemorrhages on the heart (Cory 1949).

Survey:

African rue was found in all southern counties of New Mexico (Hidalgo, Grant, Luna, Sierra, Dona Ana, Otero, Eddy, and Lea). The northern most extremities of African rue were around Truth or Consequences and Alamogordo. Greatest concentrations were from Alamogordo to Deming and south of Deming to the Mexican border. African rue was found along roadsides and in various disturbed sites. A nearly pure stand was found growing in an abandoned field near Deming. Distribution of African rue is shown in Figure 1.

Possibility of Spread in New Mexico:

This desert species is distributed throughout southern New Mexico. It is likely that it will invade additional disturbed sites within this area. The possibility of spread to the northern parts of New Mexico is unknown. However, it has not spread beyond the desert areas in the 47 years it has been reported in New Mexico.



# NEW MEXICO

Figure 1

Distribution of African rue, *Peganum harmala* in New Mexico, 1979

Description:

Halogeton is a fleshy annual, 5 cm to 6 dm high, branching from the base and closely resembling young tumbleweed (Salsola kali L.). The small, somewhat fingerlike immature leaves end in a sharp point. Mature leaves of halogeton are soft and end in a white hair-like bristle instead of a ridged spine. It has tufts of kinky, whitish hairs in the leaf axils, which are not present in tumbleweed. The five, dry flower parts enlarge, and at maturity form showy yellowish to reddish fan-like wings. The flower parts are usually thought of as the fruits, but they actually enclose the tiny one-seeded fruit. The flower parts are about 6.4 mm across and may be so abundant in the fall as to hide the stems and leaves. The tiny seeds, like those of tumbleweed, have a coiled embryo (Parker 1972).

Distribution and Habitat:

Halogeton, a native of Russia, was first identified in Nevada about 1930. Halogeton is widely distributed in the cold desert regions of Nevada, Utah, and Idaho, covering millions of acres in these states. It is also found to a limited extent in Montana, Wyoming, Oregon, Colorado, California and New Mexico.

This annual weed grows in disturbed areas or where plant cover is inadequate or decreased by overgrazing. Therefore, halogeton density varies from an occasional plant on better ranges to increasing amounts on poorer ranges and pure stands on disturbed sites. Halogeton produces more than 70 seeds per inch of stem, of which one-third are brown and two-thirds are black. The brown and black seeds are physiologically, as well as morphologically distinct. Some black seeds will germinate as soon as they fall from the plant in early fall, a higher percentage will germinate after a short ripening period. Survival of black seeds for more than a year is questionable. The brown seeds are produced during early flowering. A low rate of germination helps brown seeds survive ten or more years in the soil. These long-lived, brown seeds provide the species with a mechanism for surviving adverse periods of low seed production, low seedling survival, or both (Kingsbury 1964).

Toxic Principle and Clinical Symptoms:

The toxicity of halogeton results from a chemical compound called oxalate. Microorganisms in the rumens of sheep and cattle have the ability to detoxify small amounts of this oxalate, but poisoning occurs when this amount is surpassed. Allowing livestock to graze small amounts of halogeton for 2 to 3 days permits the adaptation of the rumen microflora to the oxalate and consequently increases

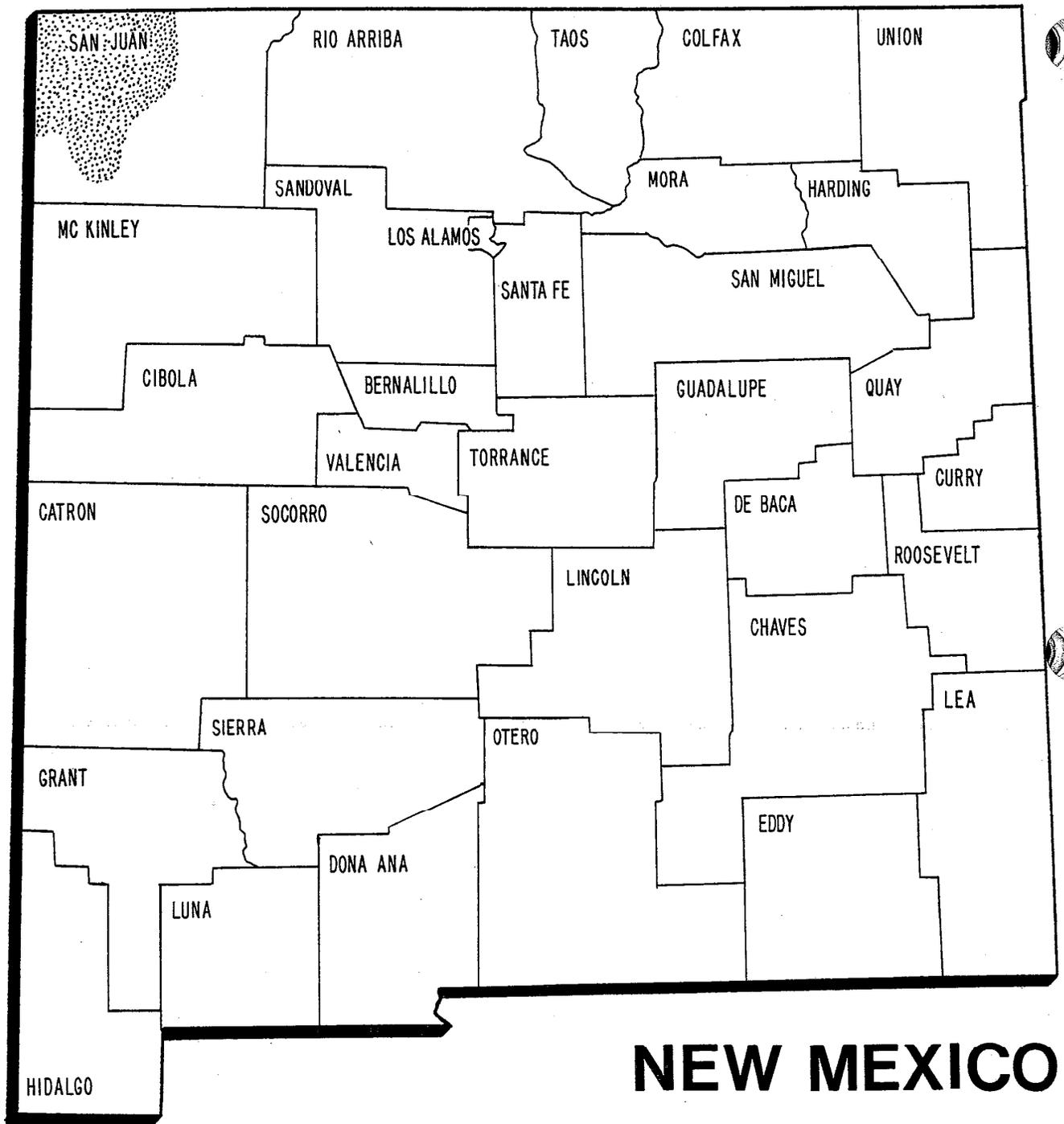
protection against oxalate poisoning. This adaptation lasts only for short periods of time (2 to 3 days), and if livestock are removed from halogeton infested areas and then later reintroduced, they must go through the adaptation period again (James and Cronin 1974).

Survey:

Halogeton was found only in the cool desert areas of San Juan county. This area has climatic conditions and soil types similar to the areas in Nevada and Utah where halogeton is found in abundance. Populations were found 10 miles north and 6 miles south of Shiprock on U.S. 666, at the Shiprock airport, near Newcomb, and at the San Juan mine near Fruitland. Locations of halogeton occurrence in New Mexico are shown in Figure 2.

Possibility of Spread in New Mexico:

At present, halogeton is confined to soil types of the cool desert region in San Juan county. Favorable conditions also occur in northern McKinley county.



# NEW MEXICO

Figure 2

Distribution of halogeton, Halogeton glomeratus in New Mexico, 1979

Drymaria arenarioides

Alfombrilla

Caryophyllaceae

Description:

Alfombrilla is a prostrate, short-lived perennial in the pink family (Caryophyllaceae). The stems branch profusely to form a somewhat tufted plant with a tap root. The linear-lanceolate to narrowly elliptic leaves are fascicled. The petals of the white flowers are two-cleft or parted (Kingsbury 1964).

Distribution and Habitat:

Alfombrilla is a native of northern Mexico. A specimen was collected near Chihuahua City, Mexico, in 1886. This plant is well adapted to soils and climates within Bouteloua-Aristida types. It has been found at altitudes ranging from 700 feet in Sonora to 6,000 feet in Chihuahua, being most abundant at about 4,700 feet (Gonzales 1979). Alfombrilla was found 5 1/2 miles from the border south of Antelope Wells, New Mexico, in 1960, and 1/4 mile south of the border in 1974. Alfombrilla grows best in sandy soils of acid nature (pH 5.6 to 7.2), but has been found in soils with pH as high as 9.

Economic Importance:

Alfombrilla (Spanish word for rug or carpet) is a Drymary that is poisonous to all classes of livestock and reportedly causes millions of dollars of loss to ranchers in Mexico each year. It is related to Drymaria pachyphylla (inkweed), which is also toxic to all classes of livestock, and found in southern New Mexico and the Trans Pecos area of Texas (Gonzales 1979, personal communication).

Toxic Principle and Clinical Symptoms:

Feeding trials at Marfa, Texas showed that a quantity of the weed amounting to as little as 0.1 percent of the body weight of a sheep would kill the animal, and all animals receiving 1/2 to 1 percent died. The toxic dose, symptoms, and lesions produced by this plant are similar to those of inkweed. Signs develop rapidly and usually there is only a short time from the appearance of the first signs of poisoning until death. This period may be as short as 2 hours. Animals have a normal or subnormal temperature, dropping as low as 94 degrees F before death. They tremble, have muscular spasms, salivate, and develop labored breathing. Poisoned animals assume a recumbant position, are reluctant to move, and struggle before death (Sperry et al. 1964).

Survey:

Three trips were made to the New Mexico-Mexico border, centering around Antelope Wells. After thoroughly searching the U.S. side of the border for alfombrilla, the search was continued south into Mexico in an attempt to find the nearest infestation to the United States border. A small infestation was found approximately 3 1/2 miles south of the border (5 miles southwest of Antelope Wells) on the San Francisco Ranch, Chihuahua, Mexico. The location of this area is shown in Figure 3.

Possibility of Introduction into New Mexico:

The introduction of alfombrilla into New Mexico is possible due to the close proximity of the infestation to the border. The fact that it has not been found in New Mexico, even though native to the areas just south of the border, indicates the possibility of widespread invasion is slight. However, occurrence of the species warrants continued review.

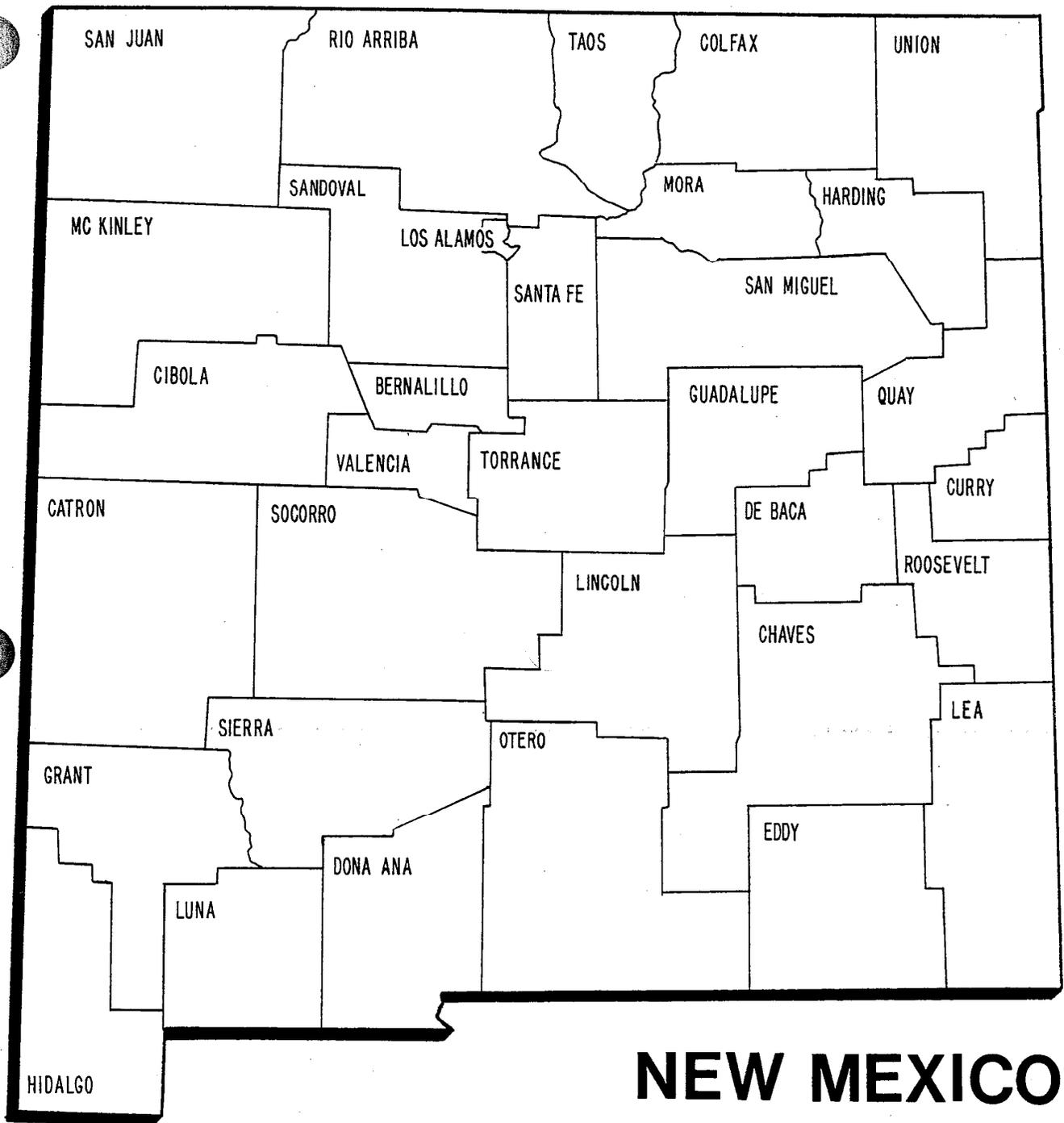


Figure 3

Distribution of alfombrilla, Drymaria arenarioides near New Mexico, 1979

Description:

Black henbane is an annual or biennial herb with clammy, hairy, much branched stems that grows 3 to 10 dm high. The very coarsely toothed, shallowly lobed leaves are covered with dense, short, sticky hairs, which give off an offensive odor. The flowers are sessile in one-sided leafy spikes. The nearly regular, funnel-form, five-lobed corolla is a brownish-yellow color with a purple center and prominent purple veins. The two-celled, many seeded capsule is enclosed by a persistent calyx (Kingsbury 1964).

Distribution and Habitat:

Black henbane, a native of Europe, was introduced to the United States as an ornamental, and was released into roadsides, waste places and pastures. Henbane is a weed of rather dry or sandy soils. It is now locally common in some areas of the northern states and Canada, especially the northwest United States (Kingsbury 1964).

Black henbane was first found in New Mexico in 1968. At that time the population consisted of only a few plants in a small area of Taos County along a roadside. The plant was spread by vehicles, road graders, and runoff in the barrow ditches over an area of 19 miles during the next 6 years. There was a decline in the population from 1976-1979 and the population has fallen back to within 6 miles of where it was first sighted. The opportunity exists for this area to be reinvaded in a good year for seedling establishment.

Toxic Principle and Clinical Symptoms:

The poisonous principle of black henbane is chiefly hyoscyamine. All parts of the plant are poisonous. Symptoms of poisoning are similar to those of Datura, which are subnormal temperature, paralysis, muscular incoordination, delirium, and death (Reed 1970).

Survey:

Black henbane was found in only one area of New Mexico, 14 1/2 miles south of the Colorado border in Taos County at the junction of highway 285 and Bureau of Land Management road 1041, with a continuous population for 6 miles east on 1041. Distribution of black henbane in New Mexico is shown in Figure 4.

Possibility of Spread in New Mexico:

It is probable there are other favorable sites for black henbane, especially in northern New Mexico, but it will probably be contained to roadsides and waste places.

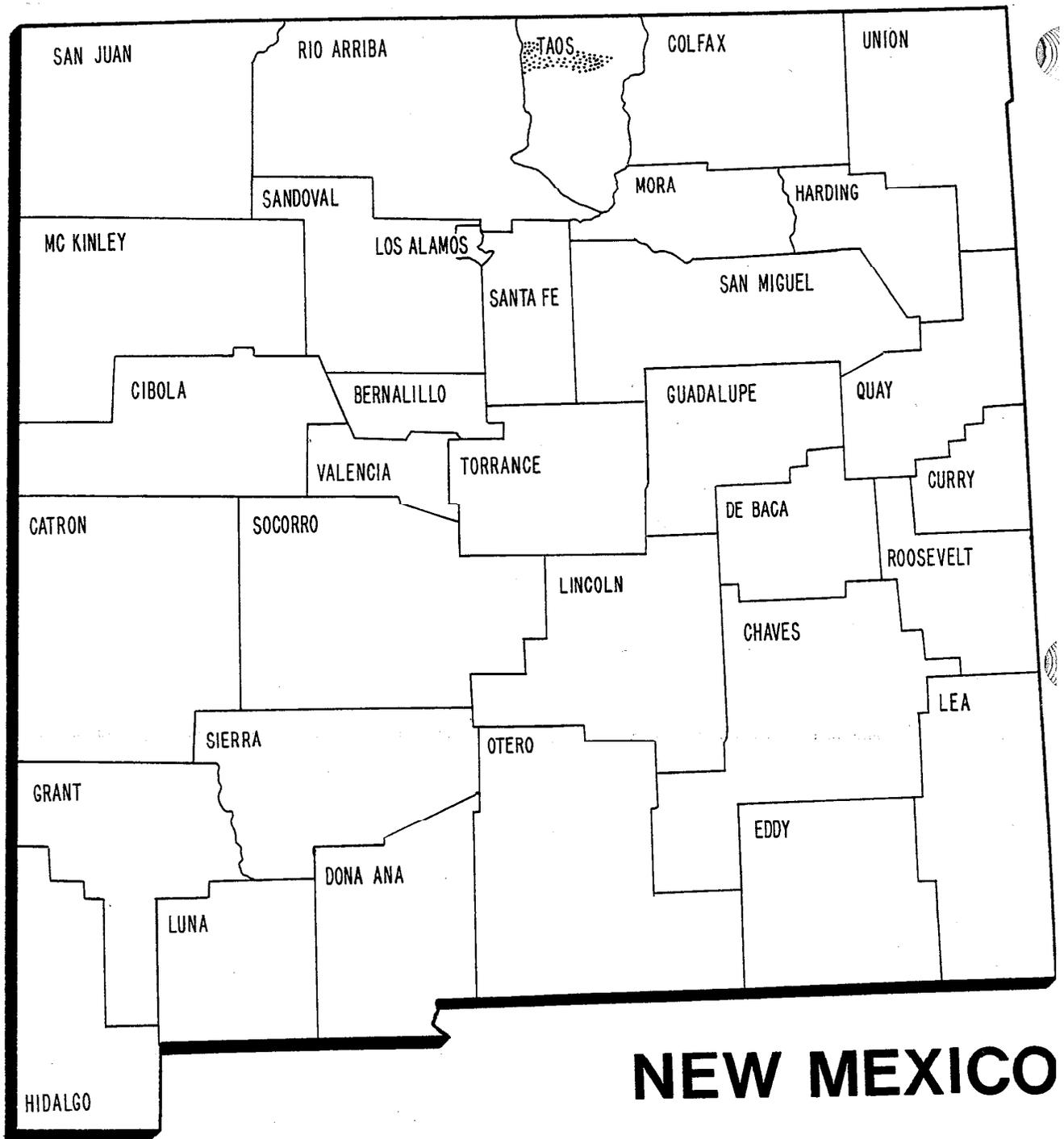


Figure 4

Distribution of black henbane, *Hyoscyamus niger* in New Mexico, 1979

Description:

Ripgut brome is a short lived annual with rather weak, but thick culms, usually 20 to 70 cm tall. The sheaths and blades are pilose. The blades are flat and soft, usually 4 to 7 mm wide. The open, nodding, few flowered panicle is 7 to 15 cm long. The five to seven flowered spikelets are 3 to 4 cm long, excluding awns. The stout, retrorsely barbed awn is 3 to 5 cm long with 3 to 4 mm long teeth. Glumes are smooth, the first 1.5 to 2 cm long and the second 2.5 to 3 cm long. Lemmas are scabrous or puberulent (Hitchcock 1950).

Distribution and Habitat:

Ripgut brome was introduced into the United States from the Mediterranean Region. It is a common weed of open ground and waste places of southern California, forming dense stands over great areas in the lowlands. It is occasionally found north to British Columbia and east to Idaho, Utah, Arizona, and New Mexico, but is rare in the eastern states--Maryland, Virginia, Mississippi, and Texas (Hitchcock 1950).

Economic Importance:

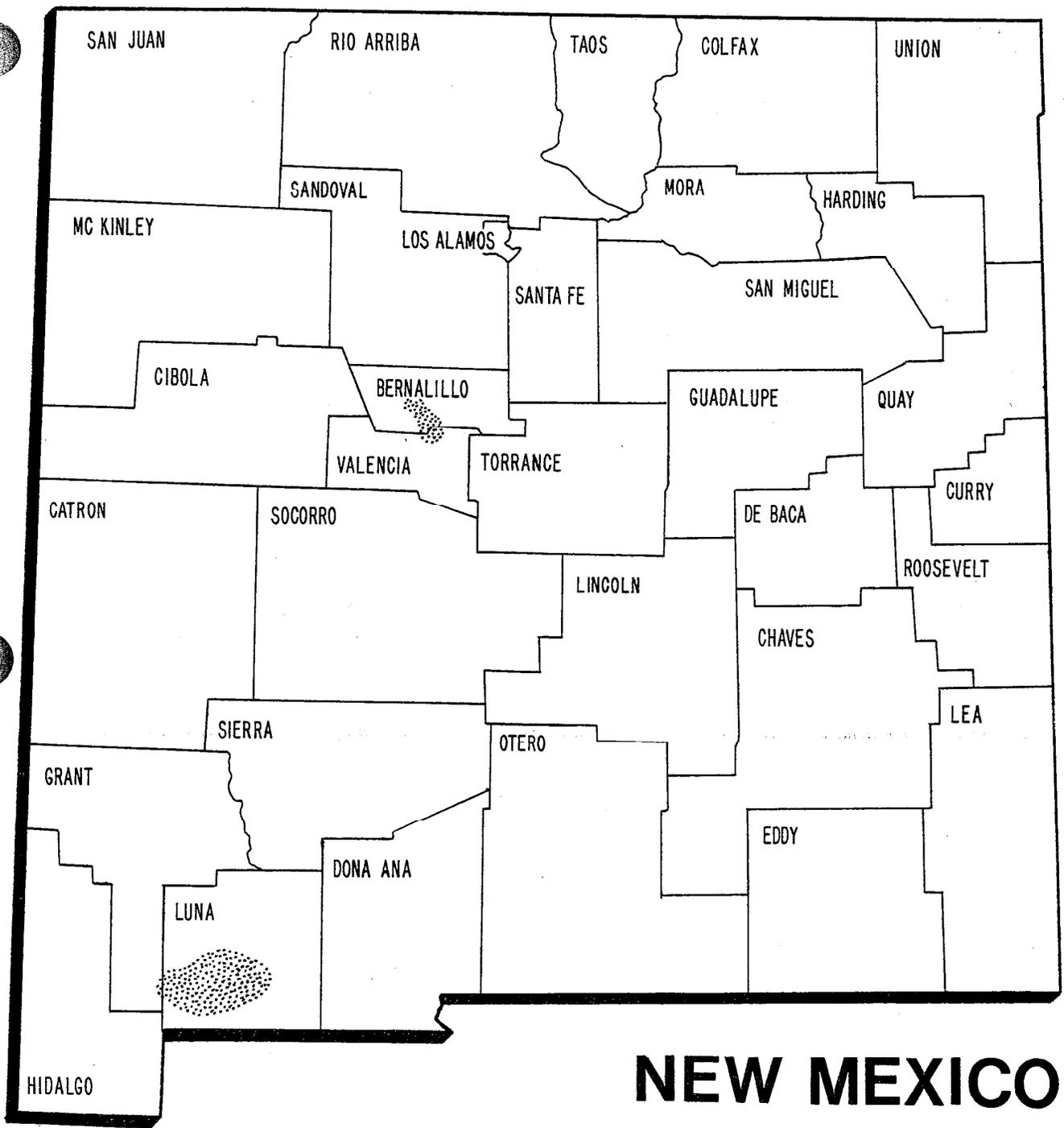
Ripgut brome is an annual species with great seed producing capabilities that allow rapid establishment on disturbed sites before desired forage has a chance to become established. Long, retrorsely barbed awns cause mechanical injury to the mouths, throats, eyes, and skin of livestock. When the plant matures, the panicle disarticulates and blows with the wind, sometimes working itself through the wool and into the skin of sheep causing sores.

Survey:

Ripgut brome was found only in Bernalillo and Luna counties. The infestations in Bernalillo County were in depleted sites south of Albuquerque. The populations in Luna County were found in the barrow ditches along I-10 west of Deming, occasionally intermixed with foxtail brome. Specimens have been previously collected in Catron and Dona Ana counties. Distribution of ripgut brome in New Mexico is shown in Figure 5.

Possibility of Spread in New Mexico:

Ripgut brome has been found in widely scattered areas of the United States, indicating it could occupy various habitat types in New Mexico. It is probable that it will spread to depleted sites throughout the state.



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Figure 5

Distribution of ripgut brome, Bromus diandrus in New Mexico, 1979

Description:

Foxtail brome is a tufted annual, usually 20 to 50 cm tall, but may be 15 cm or less on dry soils. The lower sheaths and blades are pubescent. Blades are normally 1.5 to 3 mm wide, occasionally to 7 mm wide. Panicles are short, dense, and bristly, usually 4 to 8 cm long and typically dark brown or tinged with purple at maturity. Spikelets are 1.5 to 2.5 cm long, excluding awns. The awns are retrorsely barbed, 1.5 to 2.2 cm long. Glumes are unequal, lanceolate-acuminate, with broad membranous margins, the first one-nerved, the second three-nerved. Lemmas average 1 cm long and are scabrous to pubescent with membranous margins, and 3 to 5 mm slender apical teeth (Hitchcock 1950).

Distribution and Habitat:

Foxtail brome, like ripgut brome, was introduced to the United States from the Mediterranean Region. It is distributed from Washington to southern California, and east to Idaho, Utah, Arizona, and New Mexico on dry hills, disturbed sites, roadsides, and cultivated lands. It is occasionally abundant over extensive areas (Hitchcock 1950).

Economic Importance:

Foxtail brome is an annual invader that is highly competitive with more desirable grasses utilizing limited soil moisture and preventing establishment of the more desirable species. Like ripgut brome, it has long retrorsely barbed awns which may cause mechanical injury to livestock.

Survey:

Foxtail brome was found in Catron, Hidalgo, Grant, Luna, and Dona Ana counties of southwestern New Mexico. Most specimens were found along roadsides or on disturbed sites. Small areas of relatively dense stands were found in each of the above counties. Distribution of foxtail brome in New Mexico is shown in Figure 6.

Possibility of Spread in New Mexico:

Foxtail brome is widely distributed in the drier parts of the western United States including southern New Mexico. There is a high potential for spread in New Mexico, especially in the drier southern portion of the state.

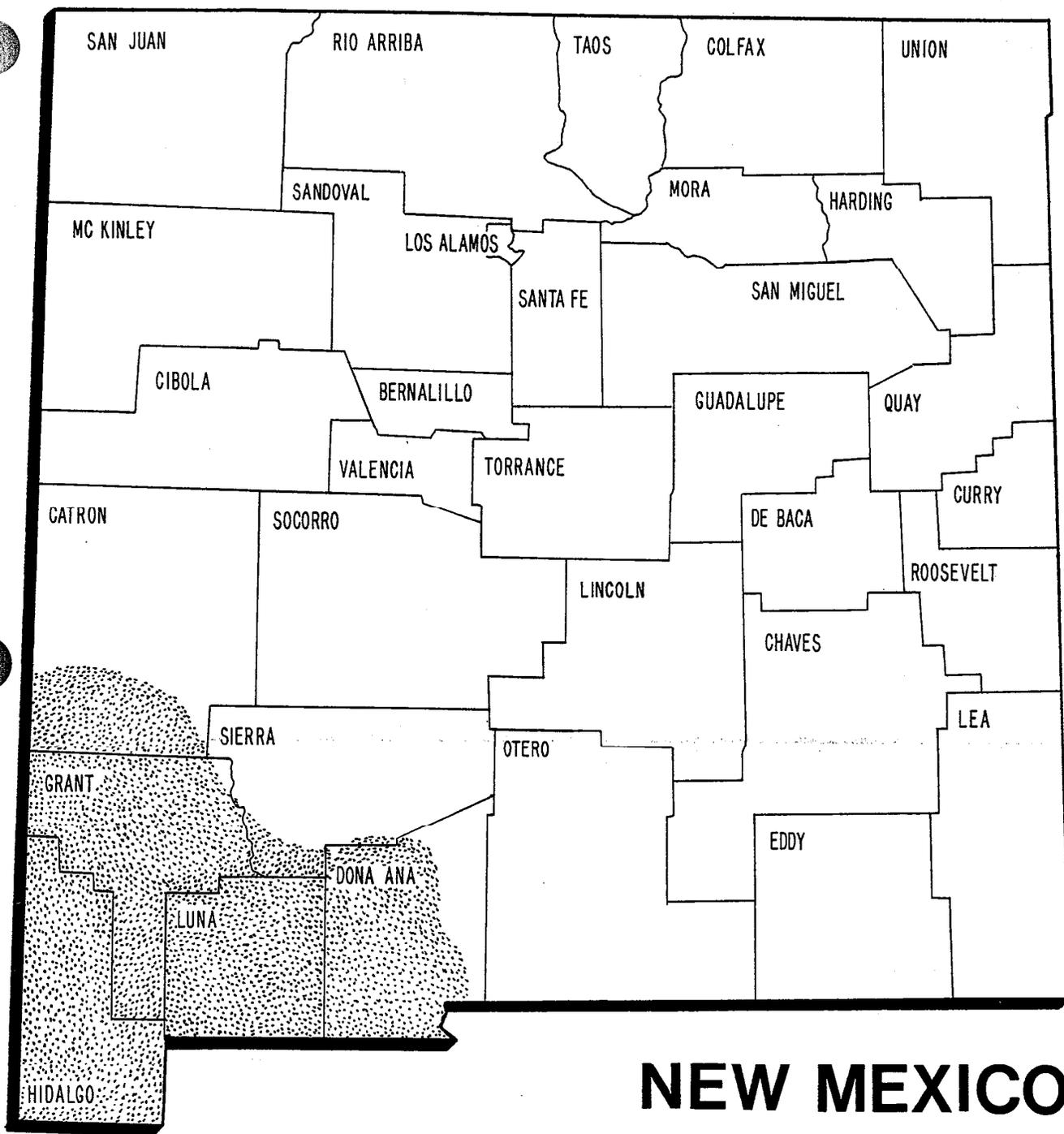


Figure 6

Distribution of foxtail brome, Bromus rubens in New Mexico, 1979

Description:

Witchweed is an annual herb usually 20 to 30 cm tall, sometimes up to 45 cm. This parasitic plant has white, watery roots with no root hairs. The plant is bright green above ground with square stems above the third node. It has multiple branches both near the ground and higher on the plant. The leaves are nearly opposite, linear lanceolate, slightly hairy, and alternating at about 90 degrees in pairs. The upper and lower surface are alike. Flowers are 6 to 9 mm wide, usually brick-red or scarlet, but may vary to red, yellow, or almost white. It blooms from July until frost, and continues setting capsules throughout the season. The capsules are five-sided with each side terminating in a characteristic spur; each capsule contains about 1,350 tiny brown seeds (.2 mm long and 1.2 mm wide) with up to 500,000 seeds per plant. Seeds may be dormant for 15 to 20 years (Parker 1972).

Distribution and Habitat:

Witchweed, a serious pest in Africa, is native to India and has been introduced into the United States. It was first discovered in this country in 1956 in the eastern parts of North and South Carolina, where it is now confined to 31 counties. Information obtained from USDA's witchweed methods and control facility at Whiteville, North Carolina, shows that witchweed can grow in the soil types and climates of New Mexico.

Economic Importance:

Witchweed is a parasitic weed that attacks more than 60 species of grasses in 28 genera, including corn, sugarcane, sorghum, wheat, oats, barley, rice, and many broad-leafed plants. In tests, over a 10 year period at Little Rock, South Carolina, Witchweed reduced the yields of dryland rice by 85 percent, sorghum 42 percent, and sugarcane 46 percent. This damage occurs primarily before witchweed emerges from the ground.

Survey:

Witchweed was not found by this survey and is not known to be present in New Mexico.

Possibility of Introduction into New Mexico:

The possibility of introduction of witchweed into New Mexico is remote at the present time due to strict Federal quarantine regulation.

Description:

Water hyacinth is a floating aquatic perennial, the aerial leaves forming rosettes usually 3.5 dm to 6 dm high. There are two kinds of leaves: submerged leaves are long and narrow while aerial leaves are usually broad to nearly circular with leaf stalks enlarged into oval bulbs filled with air-cells. The flower stalk is about 3.5 dm long with a single leaf and several sheathes at and above the middle. Each flower stalk bears about eight flowers in a loose, terminal spike. The flowers are funnel-shaped, blueish purple in color, with six lobes. Three long and three short stamens are inserted on the inside of the funnel-shaped corolla. The mature fruit is a three-celled, egg-shaped capsule (Robbins et al. 1951).

Distribution and Habitat:

Water hyacinth was introduced from South America into Florida, probably as an ornamental, and has now spread throughout the southeastern states as far north as the Potomac River. It has also become established in the lower Sacramento and San Joaquin Valleys of California (Robbins et al. 1951).

Economic Importance:

Water hyacinth clogs ponds, streams, and rivers and thus causes problems in irrigation and navigation.

Survey:

Water hyacinth is not found in New Mexico, or in a similar climate, but was included in this survey because authorities felt it could be introduced into New Mexico.

Possibility of Introduction into New Mexico:

It is believed by some that water hyacinth could not withstand the cold winters of New Mexico and would be unable to maintain itself if introduced. Research is needed to determine if it will overwinter in impounded bodies of water under New Mexico's climatic conditions.

Description:

Hydrilla is a submerged aquatic perennial. Its branched stems are about 1 mm thick and up to 3 mm long. The sessile leaves are linear-lanceolate, 7 to 40 mm long in whorls of three to eight. The plants are monoecious or dioecious with imperfect flowers. The male spathe is 1.5 mm long, subsessile, solitary in the leaf axils, flattened, globose and spiny. The solitary male flower is on a 1 to 2 mm pedicel. Female spathes are about 5 mm long, sessile, solitary in the axils, cylindrical, and membranous containing a solitary female flower with three imbricate, white sepals up to 3 mm long and 1 mm wide (Robbins et al. 1951).

Distribution and Habitat:

Hydrilla is widely distributed in the warmer regions of the old world in rice fields, pools, lakes, slow streams, and some tidal waters. It has been introduced to the United States and grows wild in Florida, California, Georgia, Alabama, Mississippi, Arkansas, Texas, and Wisconsin.

Economic Importance:

Hydrilla clogs irrigation ditches, ponds, and navigable streams. It can be a pest in rice fields. Since hydrilla was found in Florida in 1960, it has spread to 200,000 acres of waterways. It is expected that in 5 to 10 years 90 percent of Florida waterways will have hydrilla problems. Partial control of 5 percent of the infested Florida area costs 10 to 12 million dollars annually. Hydrilla can reduce irrigation canal flows from 40 to 90 percent (Robbins et al. 1951).

Survey:

Hydrilla was not found in New Mexico and is not known to exist in the state.

Possibility of Introduction into New Mexico:

If introduced and established in New Mexico, hydrilla could become a serious pest in tanks, rivers and irrigation canals. Introduction could occur through the use of this plant in fish aquariums or its release into waterways by wildlife.

## Poisoning By Locoweeds

All classes of livestock are susceptible to loco poisoning, but most animals will not graze loco when better forage is available. Several ways to prevent loco poisoning are; practice good range management; keep the range in top condition and not introduce new animals to infested areas.

Some animals become addicted to loco after eating it and will continue to graze it even when more palatable forage is available. Animals become unthrifty when eating small amounts of loco, and death occurs when larger amounts are consumed. Poor health, lowered vigor, and reduced weight gain cost the livestock industry more than actual death losses due to loco poisoning.

Poisoning by Astragalus and Oxytropis are similar and are of three types. Some species cause typical loco poisoning. Others pick up poisonous minerals and cause mineral poisoning. A third type of poisoning causes respiratory problems in addition to other loco symptoms and death by asphyxiation (Schmutz, et al. 1968). With typical loco poisoning, symptoms appear in cattle and sheep after ingestion of about 90 percent of their body weight of loco in a period of 2 months. Death will result from ingestion of about 320 percent of body weight in 3 months. Horses are more susceptible and death occurs after ingestion of 30 percent of their body weight over 1 1/2 months. Under range conditions symptoms usually appear in 6 to 8 weeks, and death occurs in an additional 4 to 6 weeks if the diet is not changed.

Some species of Astragalus have the ability to accumulate minerals such as selenium and thus cause mineral poisoning. Animals will not normally consume plants with high selenium content unless there is little else to eat. Symptoms appear in a few hours to a day or two and consist of anorexia, depression, rapid and weak pulse, coma, and death through respiratory and myocardial failure. Selenium poisoning is associated with "blind staggers" and the poisoned animal wanders aimlessly. This wandering may be accompanied by excitement or failure to distinguish immovable objects.

Description:

Wooly loco is a perennial herb, reproducing by seed. It has a deep penetrating woody root system. The plants are nearly stemless, with few and short internodes. The stems are less than 10 cm long and somewhat bushy. The 10 to 20 cm long alternate and pinnately compound leaves are composed of 21 to 31 leaflets. These 10 to 25 mm long leaflets, (oval to obovate) are covered with long silky soft hairs. The bluish-purple to rose-purple flowers form dense almost spikelike racemes while in flower, but elongate in fruit. The calyx is 10 to 15 mm long, the corolla 17 to 21 mm long, and the legume (pod) 13 to 20 mm long, narrowly oblong and glabrous (Reed 1970).

Distribution and Habitat:

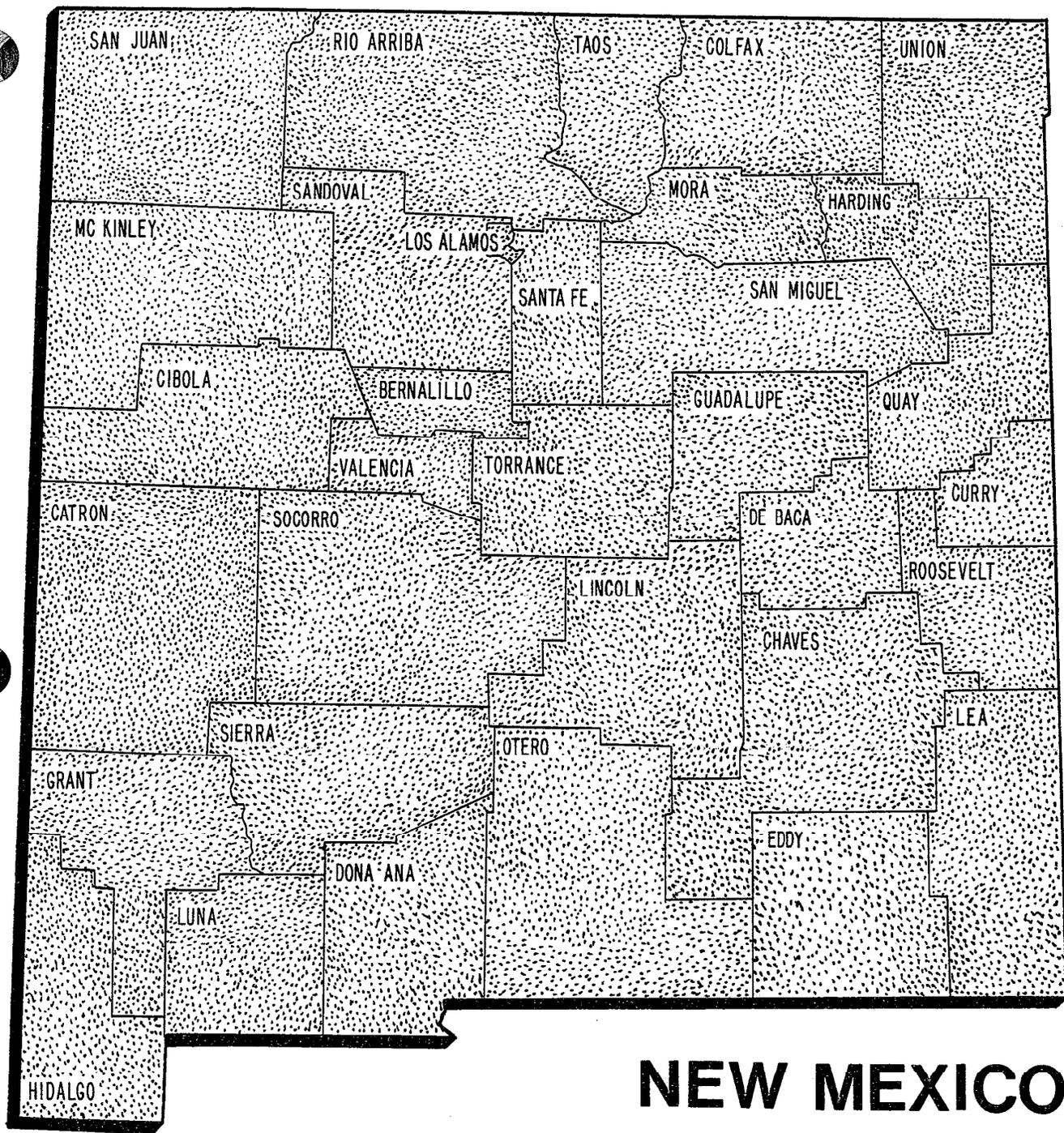
Wooly loco grows from Texas to Arizona and northward to Wyoming and South Dakota (Reed 1970) and is found throughout New Mexico.

Toxic Principle and Clinical Symptoms:

Horses are particularly susceptible to poisoning from wooly loco, but cattle, sheep and goats also develop loco poisoning. Most animals will not eat loco when other plants are available, but occasionally acquire a habit of eating loco weeds, causing permanent craziness, unthriftiness and death. Tests show that loco symptoms do not manifest themselves until 30 to 300 percent of body weight has been consumed and death occurs 4 to 6 weeks later.

Survey:

Wooly loco was found throughout New Mexico on most soil types, in all vegetation zones, except ponderosa pine and fir zones of higher elevations. The distribution of A. mollissimus is shown in Figure 7.



# NEW MEXICO

Figure 7

Distribution of wooly loco, Astragalus mollissimus in New Mexico, 1979

Description:

Rattlesnake loco is a spreading annual, biennial, or perennial plant with a thick taproot. The weak stems are branched from the base, erect and bushy at first, but sprawling on the ground with age. The leaves are divided into four tall pairs of small narrow grayish leaflets 3.2 mm wide. The pealike flowers are reddish purple, fading paler, 6.4 to 8.6 mm long. The flower stalks, 2.5 to 6.4 cm long arise in the leaf axils and bear three to ten flowers. The yellowish thin walled pods are papery, and greatly inflated when mature. These pods are nearly straight on one edge and sharply curved on the other, 1.6 to 3.3 cm long. The reddish-brown, flattened seeds are broadly kidney-shaped, about 3.2 mm long and have a notch on one edge (Parker 1972).

Distribution:

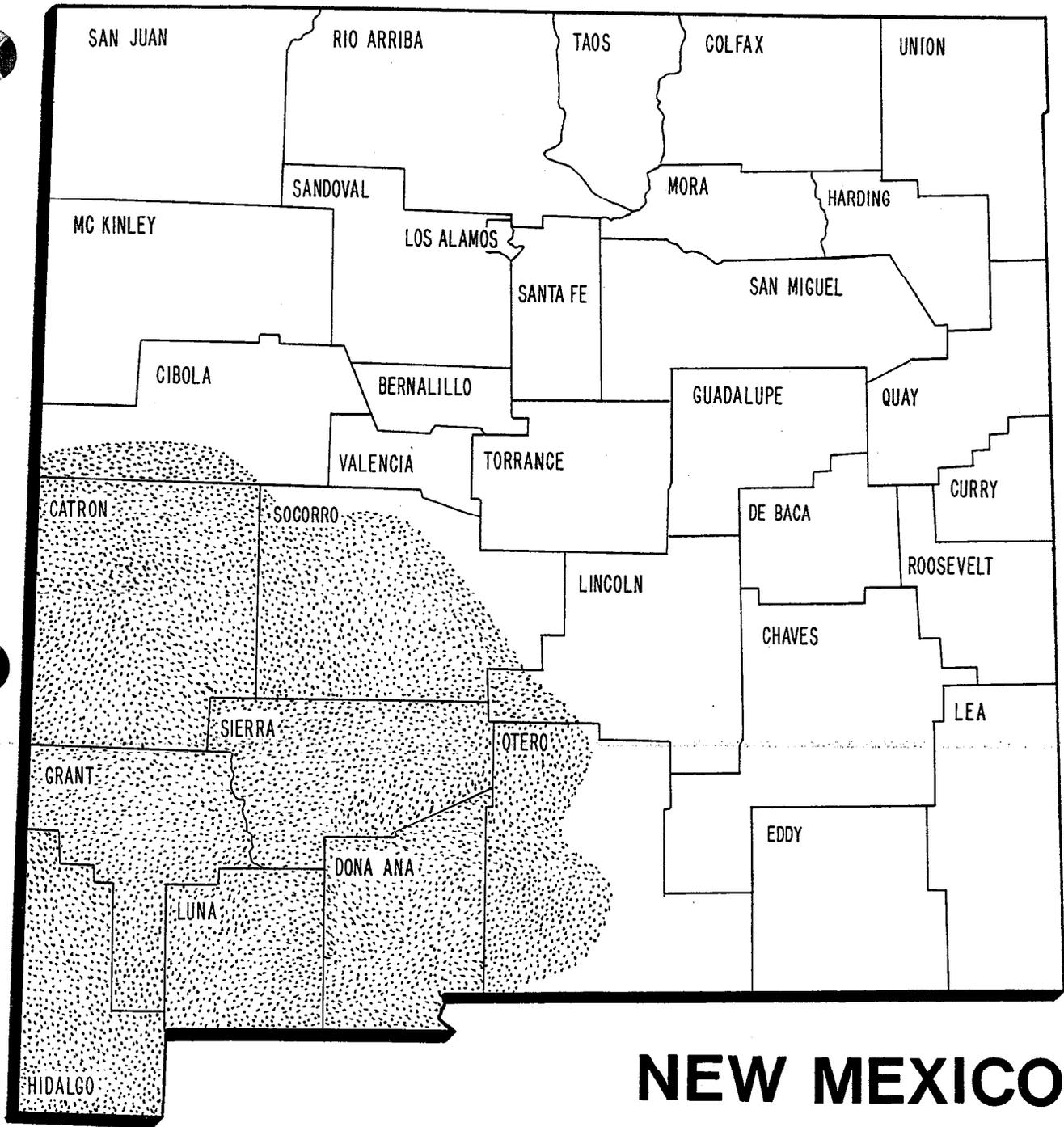
Rattlesnake loco is a common weed in the low rainfall areas of southern New Mexico, eastern Arizona, northern Mexico and Trans-Pecos, Texas. Rattlesnake loco is most abundant on sites where additional runoff is received such as valleys, and narrow ditches. It occurs as reduced plants on rocky slopes and hills. It is associated with dense growth of buffalo grass, curly mesquite and gramma grasses (Sperry et al. 1964).

Toxic Principle and Clinical Symptoms:

The toxic principle and clinical symptoms are those of typical loco poisoning. This plant is less palatable than most loco, but cattle, horses, sheep and goats are poisoned by rattlesnake loco (Sperry et al. 1964).

Survey:

This plant was found mostly in dry sandy areas of southern New Mexico, but was also found in oak and juniper woodlands. Plants are more dense and larger in areas with additional water such as along ditches or in low spots in desert rangeland and woodlands. The distribution of rattlesnake loco is shown in Figure 8.



# NEW MEXICO

Figure 8

Distribution of rattlesnake loco, *Astragalus wootonii* in New Mexico, 1979

Astragalus lentiginosus

Specklepod Loco

Leguminosae

Description:

Specklepod loco is a perennial plant growing in tufts with decumbent or diffusely spreading stems. The 11 to 19 leaflets are obovate to elliptic, 8 to 12 mm long with few short stiff hairs or smooth with age and a short and dense raceme. The calyx is strigose, the flower tube is 3 to 4 mm long, and the corolla is whitish or yellowish and 8 to 9 mm long. The seed pod is about 2 cm long and usually mottled (Booth and Wright 1959). There are many varieties of this species (Barneby 1945).

Distribution and Habitat:

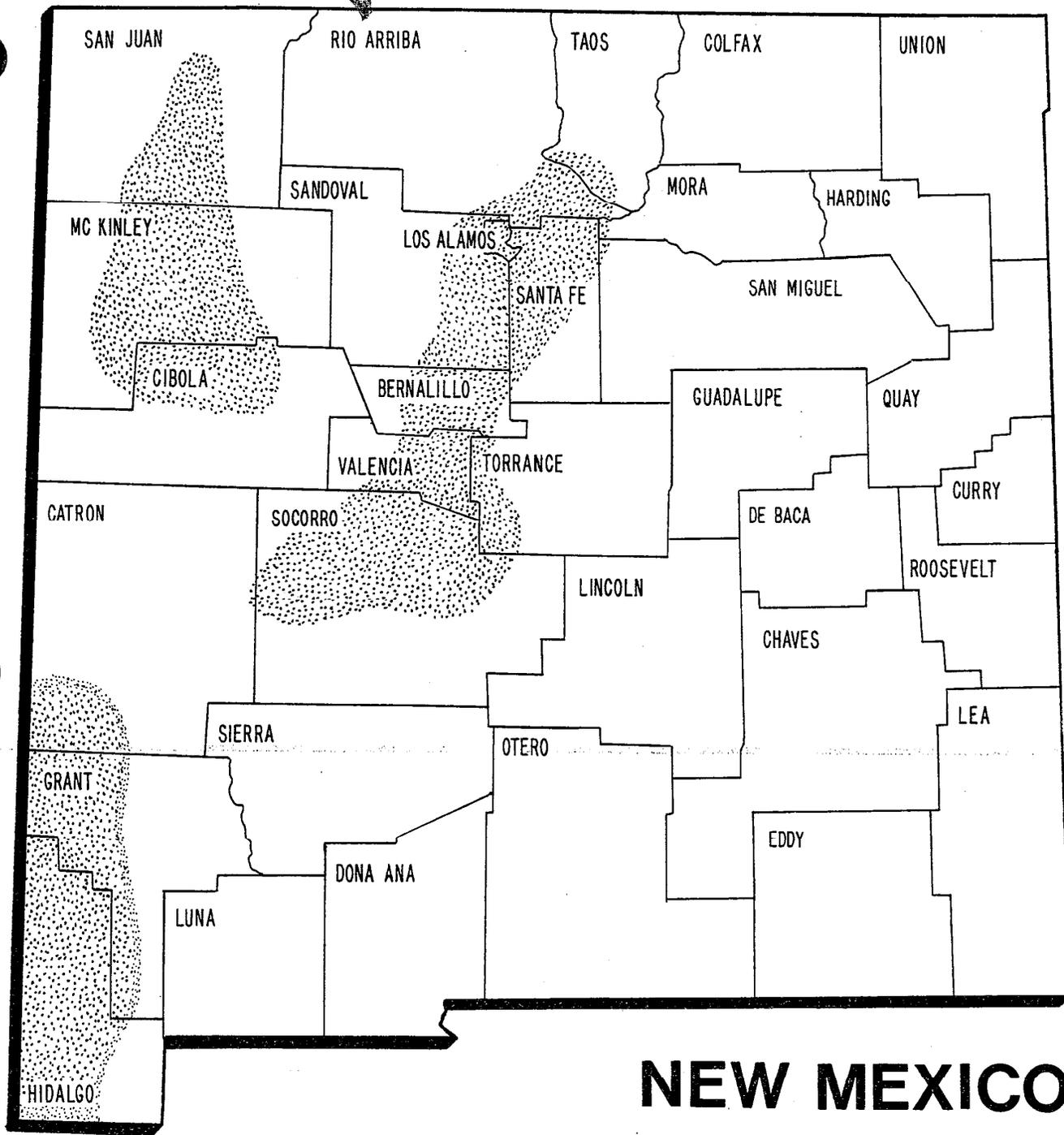
Specklepod loco grows from Idaho and Washington, south to New Mexico, Arizona, California and adjacent Mexico (Kearney and Peebles 1960). In New Mexico it grows throughout the western half of the state from 3,500 to 7,000 feet, usually in sandy soil.

Toxic Principle and Clinical Symptoms:

The same as those described in typical loco poisoning.

Survey:

This plant was found in the western portions of New Mexico, and was distributed from the desert floor to the lower mountains and mesas. The distribution found in this survey is shown in Figure 9.



# NEW MEXICO

Figure 9

Distribution of specklepod loco, *Astragalus lentiginosus* in New Mexico, 1979

Description:

Emory loco is an annual legume with slender decumbent stems branched at the base and bearing odd-pinnate leaves with pointed leaflets. Its glabrous seed pods are two-celled and contain about 12 seeds. The tap root is slender. This plant is closely related to A. nuttallianus, which has truncate or emarginate leaflets while emory loco has acute leaflets (Sperry et al. 1964).

Distribution and Habitat:

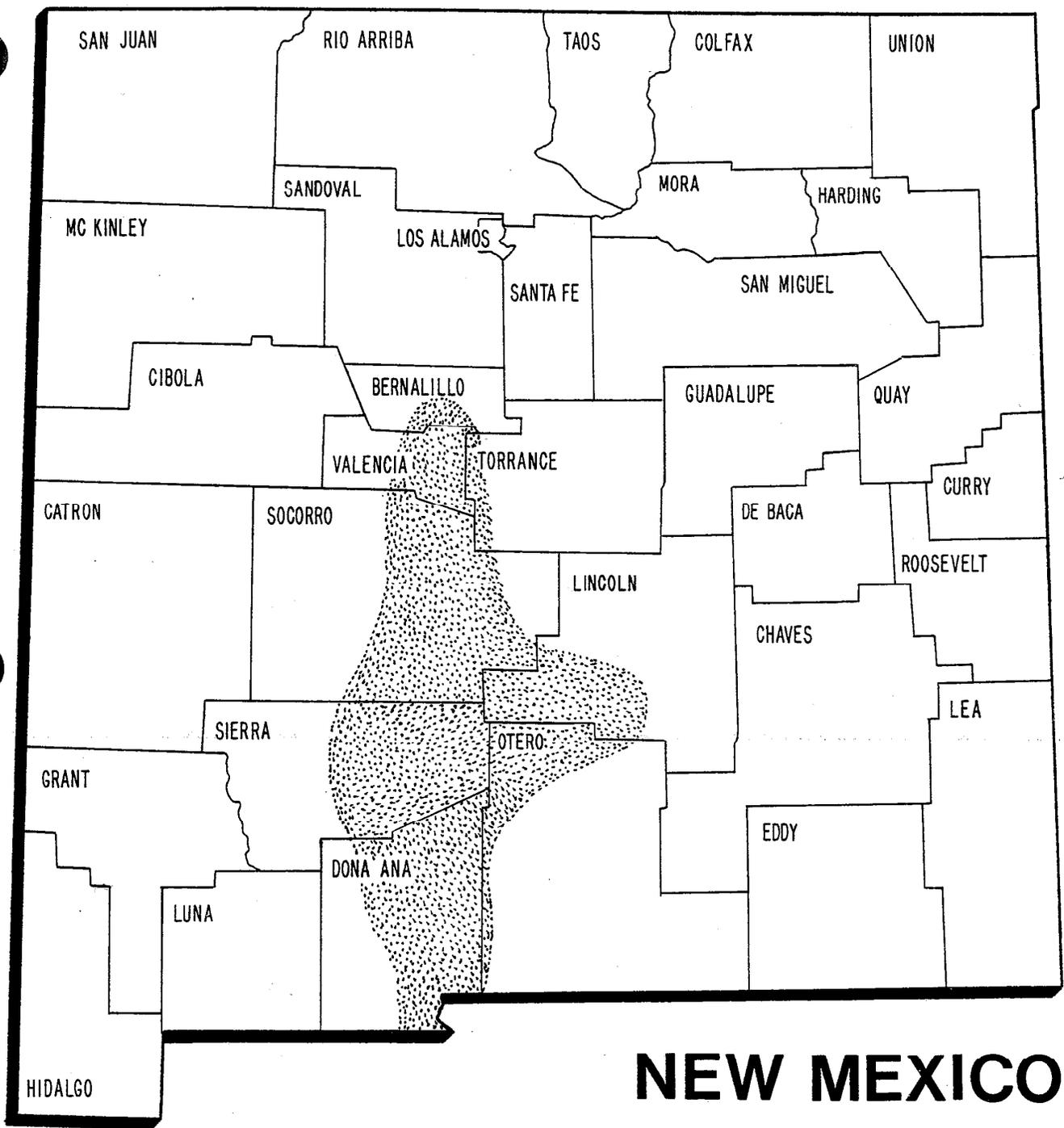
Emory loco is distributed from Texas to California and Mexico. It grows in short-grass areas and open ground usually assuming a prostrate habit, but occasionally upright in moist grassy areas.

Toxic Principle and Clinical Symptoms:

The toxic principle in emory loco is a mineral poisoning. Emory loco is poisonous when growing on certain soil types but is a good forage plant on other soil types. Limestone and red sandy soils have been reported to cause emory loco to be poisonous. Plants growing on soils of igneous origin have not been found to be poisonous. However, cattle may die from bloat after eating emory loco growing on any soil (Sperry et al. 1964).

Survey:

A. emoryanus was found in Lincoln County and the southern Rio Grande drainage of New Mexico. Figure 10 shows the distribution of this plant as found by the survey.



# NEW MEXICO

Figure 10

Distribution of emory loco, *Astragalus emoryanus* in New Mexico, 1979

Description:

Peavine is a slender annual plant growing prostrate to almost erect and profusely branched from a somewhat woody taproot. Peavine is thinly covered with straight grayish hairs. The leaves are divided into three to eight pairs of small narrow leaflets, with rounded, pointed or slightly notched tips. The flowers are small pea-like and light purple to nearly white in color, then drying blue. Two to six flowers are clustered near the end of stiff threadlike stalks, 2.5 to 7.6 cm long. The pods are narrow and flat, 13 to 19 mm long and 2 to 3 mm wide, hairy, curved upward and slender-pointed at the top. Seeds are flattened and squarish with a deep notch in one edge and about 2 mm long (Parker 1972).

Distribution and Habitat:

A. nuttallianus is distributed from Arkansas and Texas to California and northern Mexico (Parker 1972). In New Mexico it grows on barren, dry or disturbed soils along roadsides, waste places, river bottoms, mesas, slopes, and canyons. It can be a common lawn pest, particularly in new lawns, yards, ditches and fields.

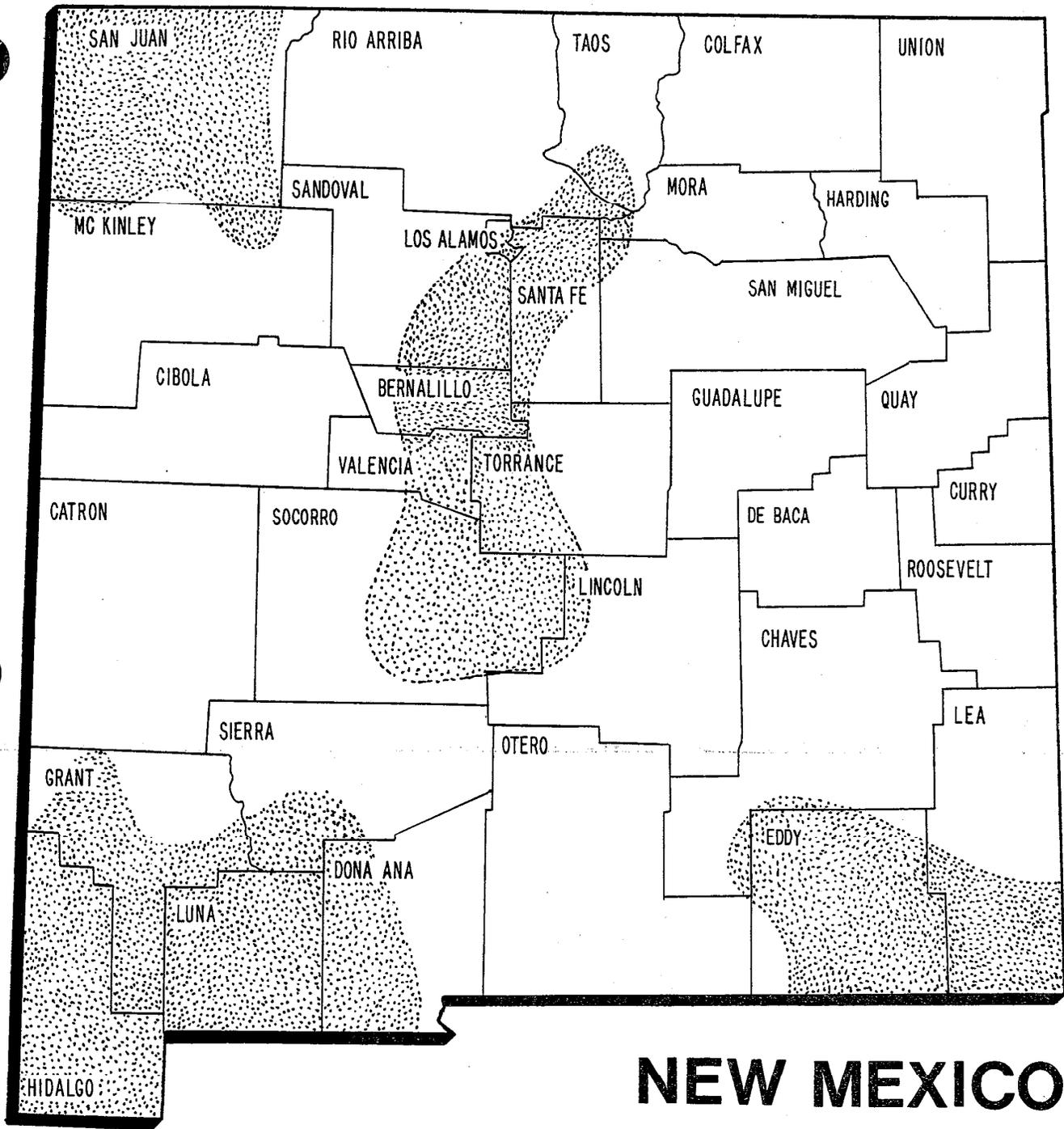
Toxic Principle and Clinical Symptoms:

Peavine is believed to be poisonous under the same conditions as A. emoryanus, which varies with soil type and environmental conditions (Sperry et al. 1964) The poisonous principle is mineral poisoning.

Survey:

Peavine is found in both the southern and northern desert rangelands, mostly associated with barren dry or disturbed sites and is also found in pinyon-juniper foothill sites between. It is found in towns around old lawns and cattle pens and along rivers and ditches.

Because of its early growing season (usually February-May), this survey may not have found as much A. nuttallianus as occurs in New Mexico. The distribution of peavine found by this survey is shown in Figure 11.



# NEW MEXICO

Figure 11

Distribution of peavine, *Astragalus nuttallianus* in New Mexico, 1979

Description:

Lambert loco is a stemless, hairy perennial from a woody taproot system which reproduces by seed only. All the leaves (formed from 5 to 15 linear to lanceolate or ovate leaflets) come from the base of the plant. The 13 to 25 mm long leaflets are covered with silky hair. The flowering stems are erect 5 to 25 cm long. Racemes have 10 to 25 flowers with pink to purple, sometimes white petals. The cylindrical calyx is 7 to 11 mm long and often purplish in color. The oblong woody seed pods are hairy, 1.9 to 3.2 cm long including the slender beak about 6.3 mm long. The reddish-brown, flattened, kidney-shaped seed is about 13 mm long (Booth and Wright 1959).

Distribution and Habitat:

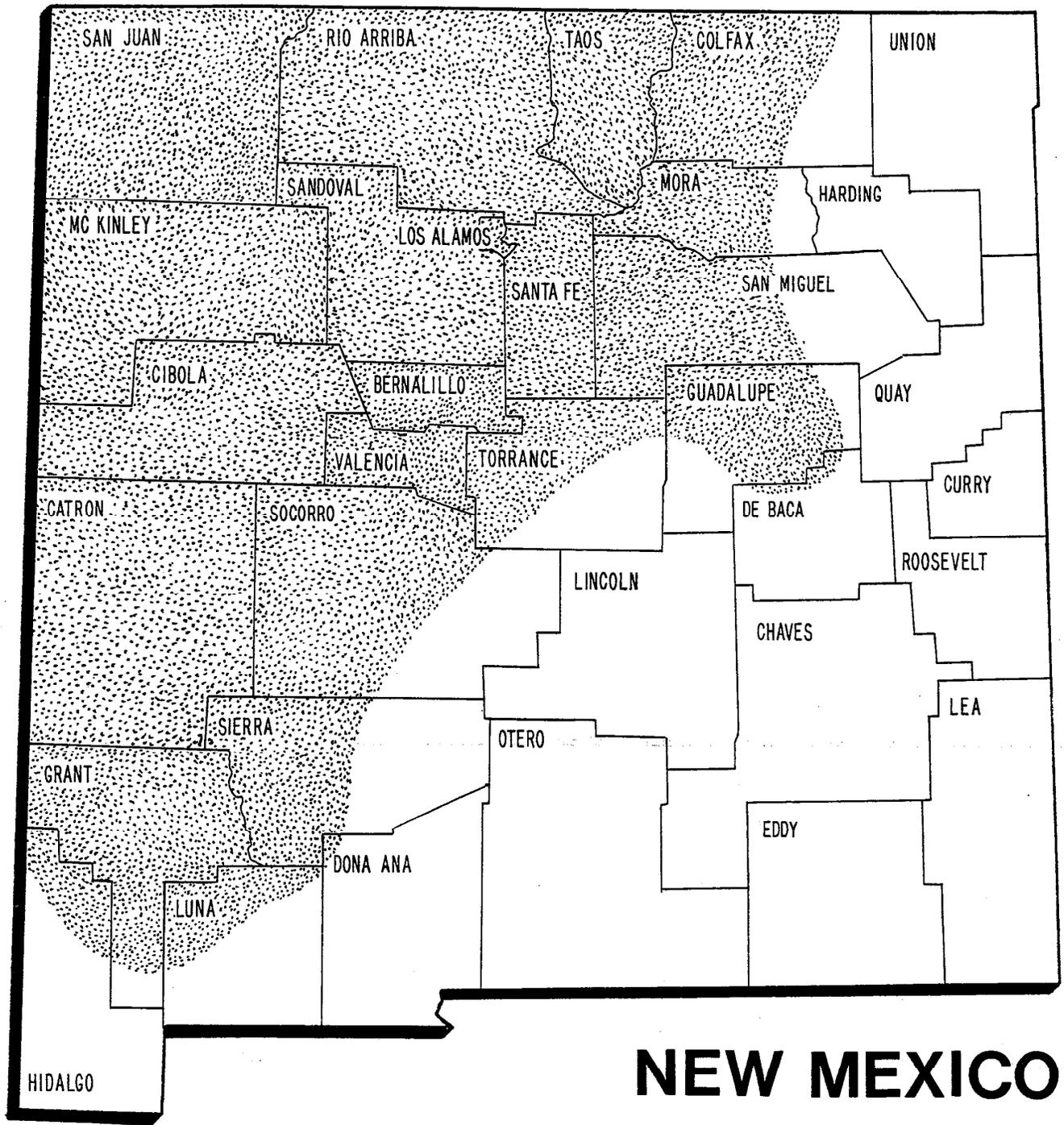
Lambert loco grows from Minnesota west to Idaho and south to Arizona, Texas and New Mexico. It grows on mountain slopes, pasture lands, and range lands (Reed 1970). It is found on well-drained sandy or gravelly soil and frequently in rocky areas.

Toxic Principle and Clinical Symptoms:

Horses, cattle and sheep are susceptible to poisoning. The toxic principal is an alkaloid and clinical symptoms are similar to those of Astragalus. These symptoms develop after about 90 percent of the animal's body weight has been ingested over a 2 month period. Animals become dull and weak, with a loss of muscular control. The animal then loses its sensibility and becomes shaggy and thin, stops eating and dies.

Survey:

Lambert loco was found most abundantly in pinyon-juniper areas between 5,000 to 6,500 feet, usually on well drained soils. Some plants were found at lower elevations in the transition zone to the pinyon-juniper zone and on the high plains. Figure 12 shows the distribution of lambert loco in New Mexico.



# NEW MEXICO

Figure 12

Distribution of Lambert loco, *Oxytropis lambertii* in New Mexico, 1979

Description:

Silky loco is a caespitose perennial with numerous crowns from a taproot. The leaflets are opposite, ovate to elliptic, 1 to 4 cm long, with silky-pilose hairs attached at the base. The flowering stems are erect, 7 to 30 cm long. The 6 to 27 flowered raceme is dense at first but more open when in seed. The calyx is bell-shaped, 8 to 12 mm long and hairy. The petals are white or yellowish with or without a purple spot on the keel or sometimes lilac tinted throughout (Booth and Wright 1959).

Distribution and Habitat:

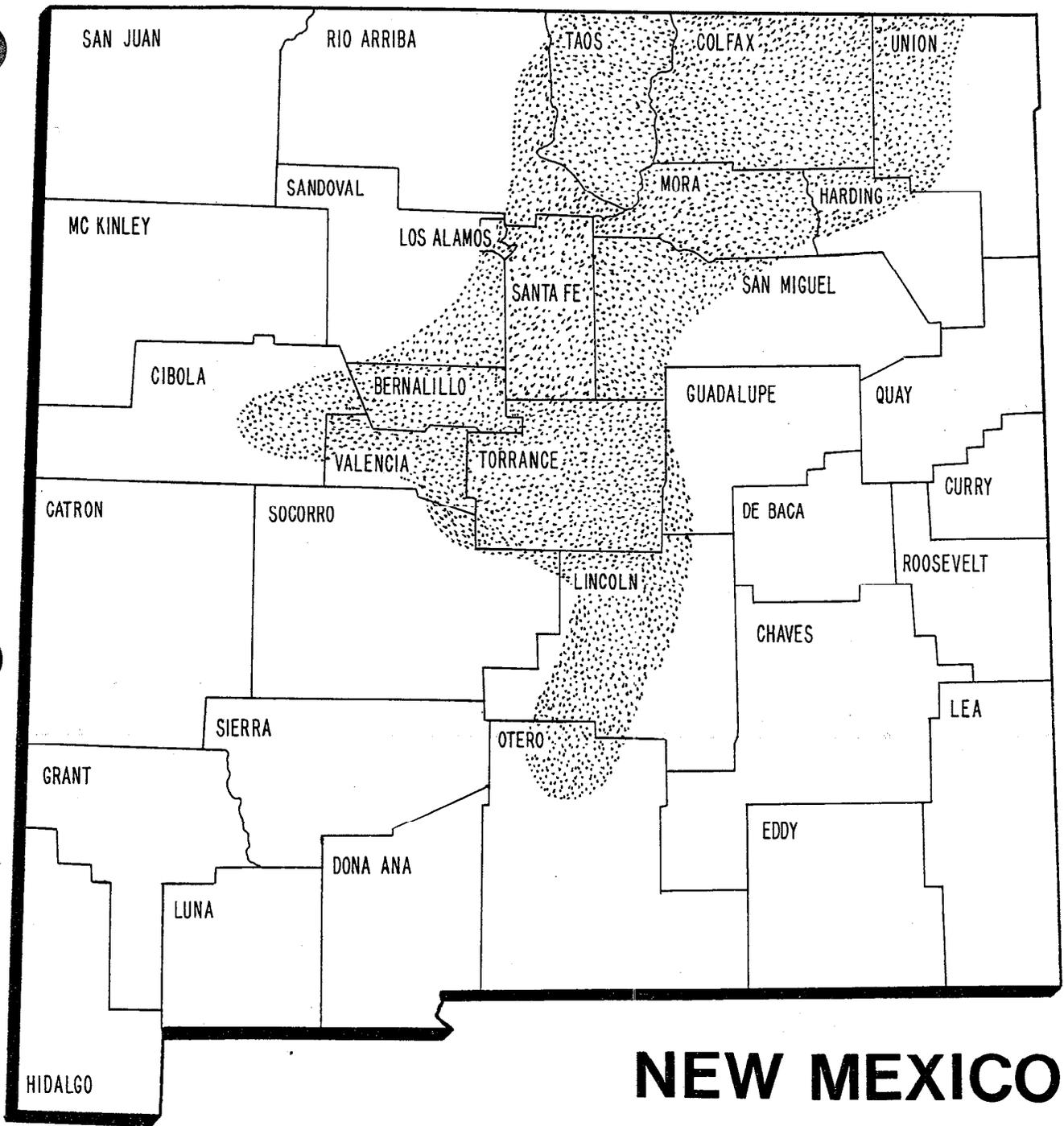
Silky loco is found from Canada to central Idaho, south to Oklahoma, Utah, and New Mexico (Davis 1952).

Toxic Principle and Clinical Symptoms:

Like Astragalus species, silky loco is poisonous to all classes of livestock. The toxic principle is an alkaloid and symptoms of poisoning are dullness and weakness, loss of muscular control, loss of sensibility and then death. These symptoms develop after 90 percent of the animal's body weight has been consumed over a 2 month period.

Survey:

Silky loco was found mostly in the foothills and the high plains areas of New Mexico. Figure 13 shows the distribution of silky loco as found by this survey.



# NEW MEXICO

Figure 13

Distribution of silky loco, *Oxytropis sericea* in New Mexico, 1979

Asclepias latifolia

**Broadleaf Milkweed**

Asclepiadaceae

Description:

Broadleaf milkweed is a robust, leafy perennial 46 to 107 cm high, reproducing by seeds or from horizontal roots. Its single, stout stem is often hollow and unbranched or few branched. The leaves are large, oval, conspicuously veined, and almost stalkless. The tip is broadly rounded and often indented. The flowers are yellowish with five hoodlike structures that have horned crests above the five reflexed petals. Seedpods are smooth, brown, woody, and about 3 cm broad and 8 cm long when mature. The many flattened seeds are distinctly margined, 8 1/2 mm long, 6 1/3 mm broad, with a tuft of fine silky white hairs at the narrow end (Parker 1972).

Distribution and Habitat:

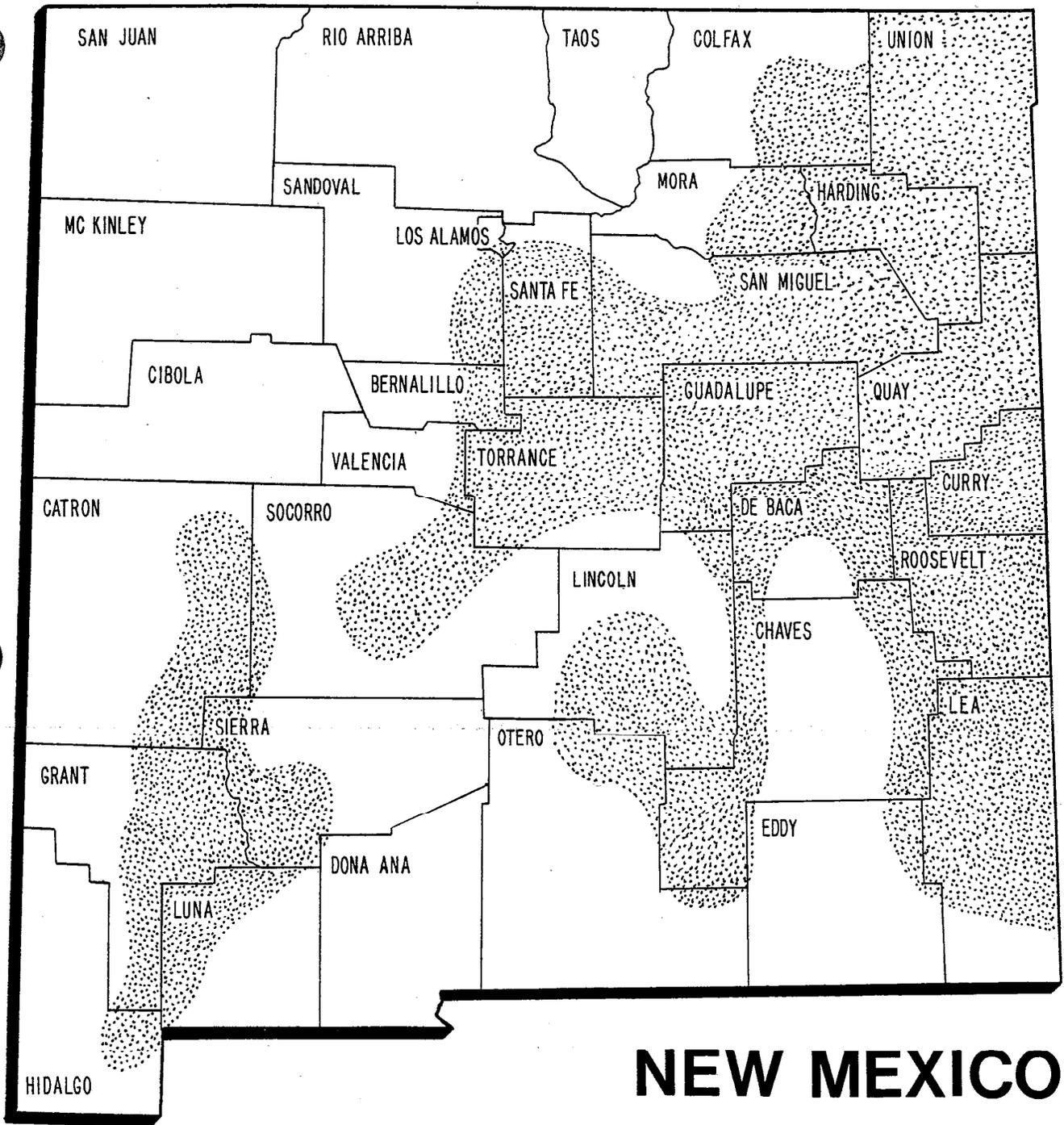
In the United States broadleaf milkweed is found from Texas to Arizona and north to Nebraska and Utah. It is a common rangeland weed frequently growing along trails and roads. In New Mexico broadleaf milkweed is most common in grasslands of the high and central plains and occasionally in the southern deserts.

Toxic Principle and Clinical Symptoms:

The toxic principle of milkweed is a resinoid. Cattle may be poisoned by as little as 0.5 percent of their body weight, and sheep or goats have been poisoned by less than 0.15 percent of their body weight (Mathews 1932).

Survey:

This plant inhabits grasslands and mountain foothills in the eastern part of New Mexico, but not rocky or hilly country. It was present on mesas and hilltops, but rarely enters pinyon-juniper areas. In southern New Mexico it was found mostly along roadsides and streams. Distribution of A. latifolia is shown in Figure 14.



# NEW MEXICO

Figure 14

Distribution of broadleaf milkweed, *Asclepias latifolia* in New Mexico, 1979

Asclepias subverticillata

Poison Milkweed

Asclepiadaceae

Description:

Poison milkweed is an erect, bushy, hairless, perennial plant with a milky juice. Reproduction is by seeds or from its wiry, creeping roots. Unbranched stems arising close together from the horizontal roots are 3 to 12 cm high. The leaves are whorled at each stem joint. Leaves are nearly stalkless 7.6 to 12.7 cm long, and 8.5 mm broad. The small, greenish-white flowers occur in umbels. Seedpods are slender and spindle-shaped, 5.1 to 10.2 cm long on erect stalks. The seeds are flat, 6.4 mm long with corky margins and a tuft of silky hairs at the tip (Parker 1972).

Distribution and Habitat:

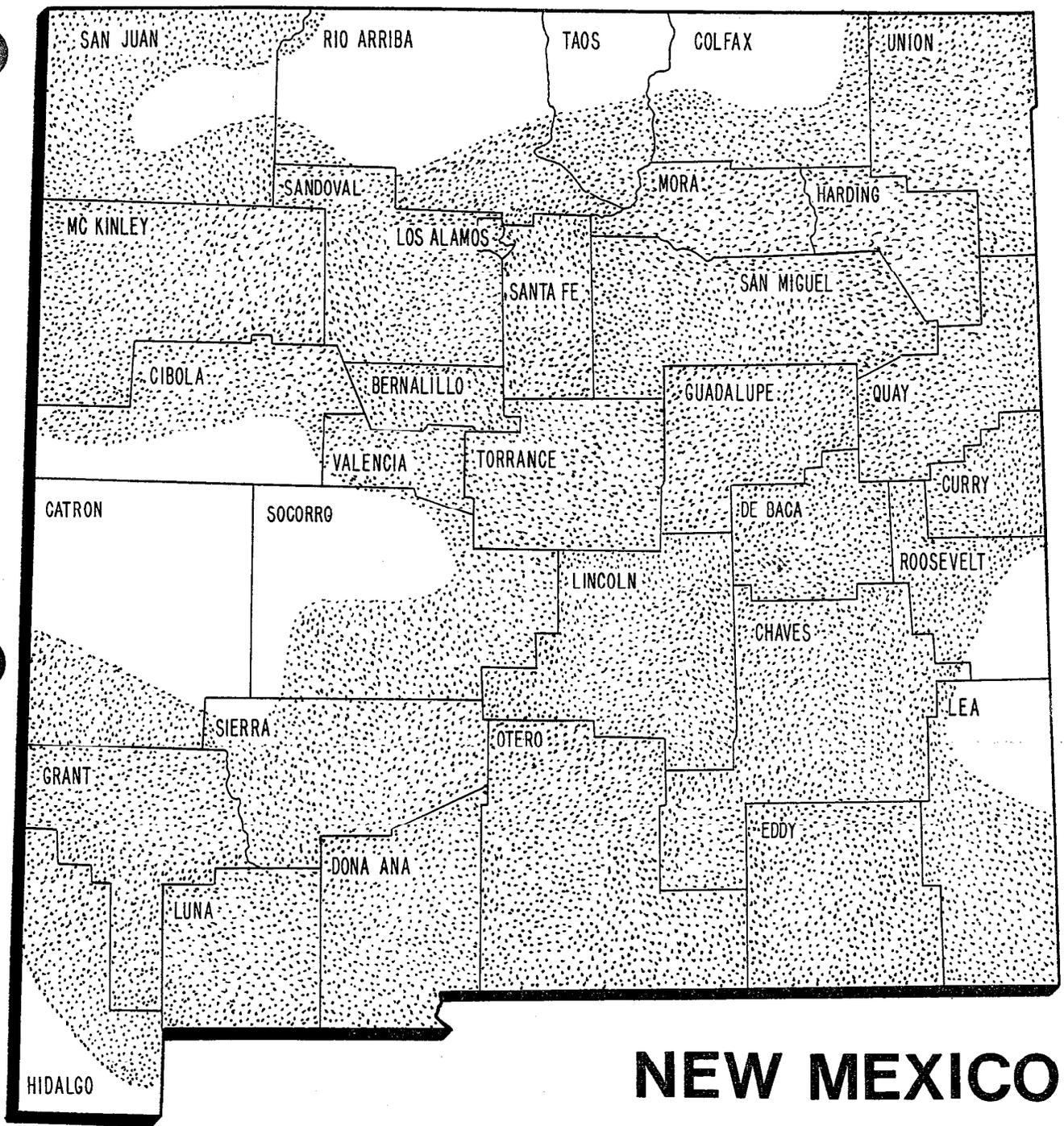
Poison milkweed is distributed from Texas, New Mexico, and Arizona, and northern Mexico to Utah and Colorado (Sperry et al. 1964).

Toxic Principle and Clinical Symptoms:

Poison milkweed is poisonous to all classes of livestock. Fifty-six to 85 grams can kill a sheep (Sperry et al. 1964). The poisonous principle is a resinoid found in all parts of the plant, even when dry. Signs of poisoning may appear a few hours after ingestion. Symptoms of poisoning are equilibrium disorders, muscle spasms, aeroneurosis, bloating, dilated pupils, staggering and respiratory paralysis resulting in death.

Survey:

Poison milkweed is uncommon in New Mexico before June or July. Habitats include dry soils along roadsides, edges of fields and pastures, ditch banks, dryland crops, plains, mesas and slopes. It was most common in New Mexico at elevations of 4,500 to 8,000 feet in the northwestern portion of the state, occurring especially on bottomlands. Distribution of A. subverticillata in New Mexico is shown in Figure 15.



# NEW MEXICO

Figure 15

Distribution of poison milkweed, *Asclepias subverticillata* in New Mexico, 1979

Asclepias verticillata

Whorled Milkweed

Asclepiadaceae

Description:

Whorled milkweed is a perennial herb producing a milky juice and reproducing from seeds and creeping rootstocks. The stems of this plant are slender and erect, 3 to 9 cm high, smooth, and branching at the top of the plant only. The leaves are linear, light-green and arranged in groups of three to seven, or in whorls around the stem. They are 2 to 5 cm long, 1 to 2 mm wide and rolled backwards and downward. The flowers are in umbels which are borne in clusters at the top of the stem or in the axils of the upper leaves. The five greenish-white petals are ovate, 4 to 5 mm long. The pods (follicles) are erect on erect stalks, 4 to 5 cm long. The pods contain numerous flat, brown seeds with a tuft of fine hairs at the tip (Kingsbury 1964).

Distribution and Habitat:

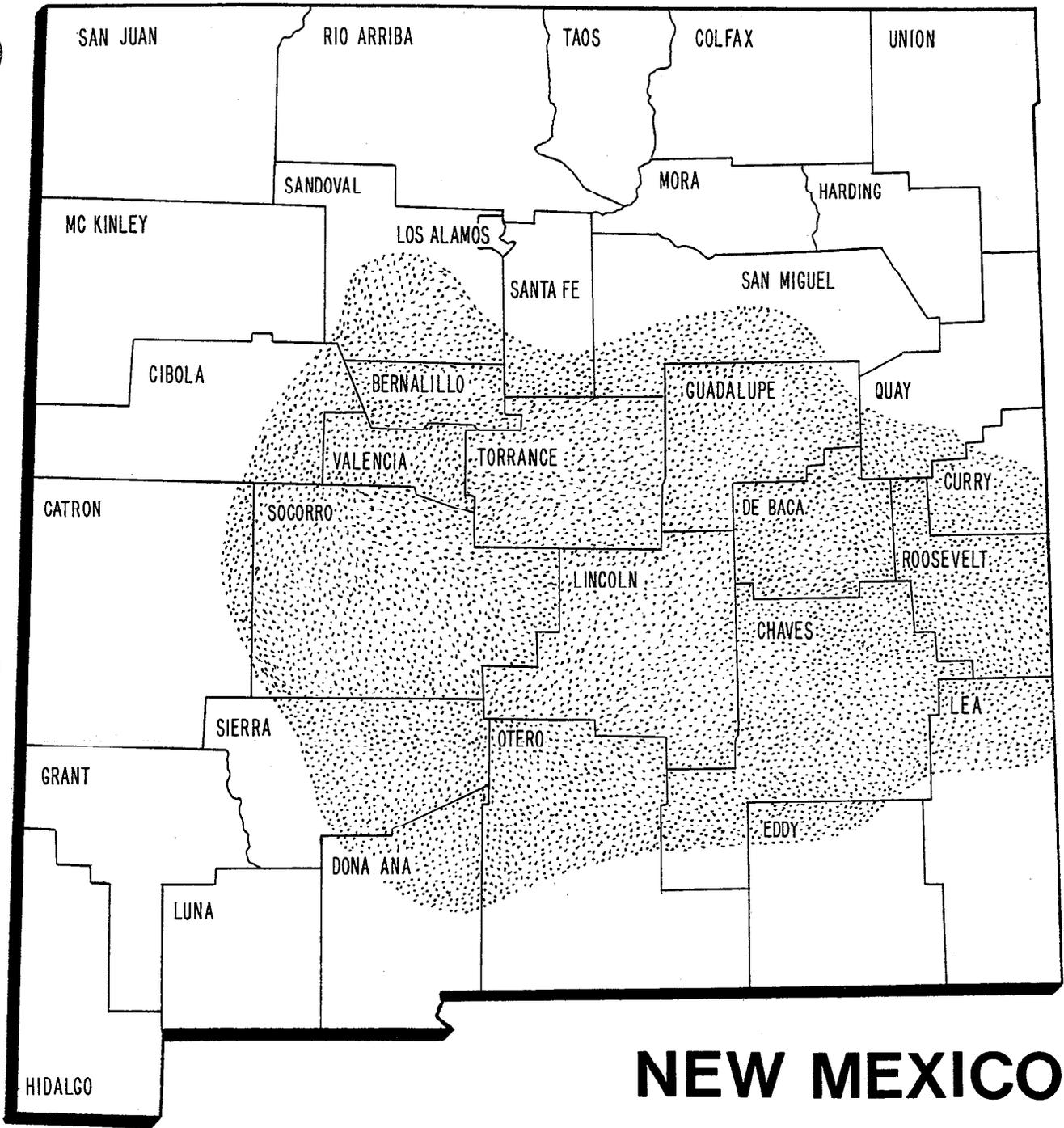
Whorled milkweed is found throughout the eastern and central United States and Canada, in meadows, pastures, barren, waste and sterile places. It is also found in New Mexico.

Toxic Principle and Clinical Symptoms:

The toxic principle is a resinous substance that is found in all parts of the plant, but is especially concentrated in the tops. Dry plants retain the toxic factor and can be a problem if present in hay. Signs of poisoning may appear in ruminants within 5 hours after the plants have been eaten. Signs of poisoning are disturbance in equilibrium, muscle spasms, nervousness and weakness, bloating, staggering, dilated pupils and respiratory paralysis resulting in death (Evers and Link 1972). Whorled milkweed is poisonous to all classes of livestock.

Survey:

Whorled milkweed was found in scattered areas of New Mexico, but it was uncommon. The distribution of A. verticillata is shown in Figure 16.



# NEW MEXICO

Figure 16

Distribution of whorled milkweed, *Asclepias verticillata* in New Mexico, 1979

Delphinium nelsonii

Nelson Larkspur

Ranunculaceae

Description:

The stems of Nelson larkspur are 30 to 50 cm tall, rather stout and sparsely to densely hairy and arise from tuberform or fascicled roots. The few leaves, basal and cauline, are early withering. Leaves are palmatisect into three or five primary divisions and these are usually trifid, and sparsely hairy. The flowers are few, showy, blue-purple to pale blue; sepals are 11 to 15 mm long, with the spur about the same and nearly straight (Davis 1952).

Distribution and Habitat:

Nelson larkspur grows from South Dakota to eastern Idaho, south to New Mexico, Arizona and Nevada (Kearney and Peebles 1960).

Toxic Principle and Clinical Symptoms:

Nelson larkspur is poisonous to cattle, horses, and slightly toxic to sheep. It is most poisonous in early stages of growth.

The poisonous principles in Nelson larkspur are complex alkaloids, one of which is delphinine. Experimental work has shown that some species of larkspur are toxic at 0.5 percent of the animals body weight and lethal at 0.7 percent of body weight.

Symptoms appear to be largely the result of general weakness brought about by the action of alkaloids on the nervous system. Symptoms include uneasiness, muscular twitching, a straddled stance, sudden collapse, rapid and weak pulse, constipation and bloat. In fatal cases death results quickly from asphyxiation or respiratory paralysis.

Survey:

This is an early blooming plant and probably was gone from many sites before northern counties were sampled. Plants found were in moist meadows at higher elevations and along roadsides. This larkspur was found at elevations above the pinyon-juniper zone. Figure 17 shows the distribution of Nelson larkspur found by this survey in New Mexico.

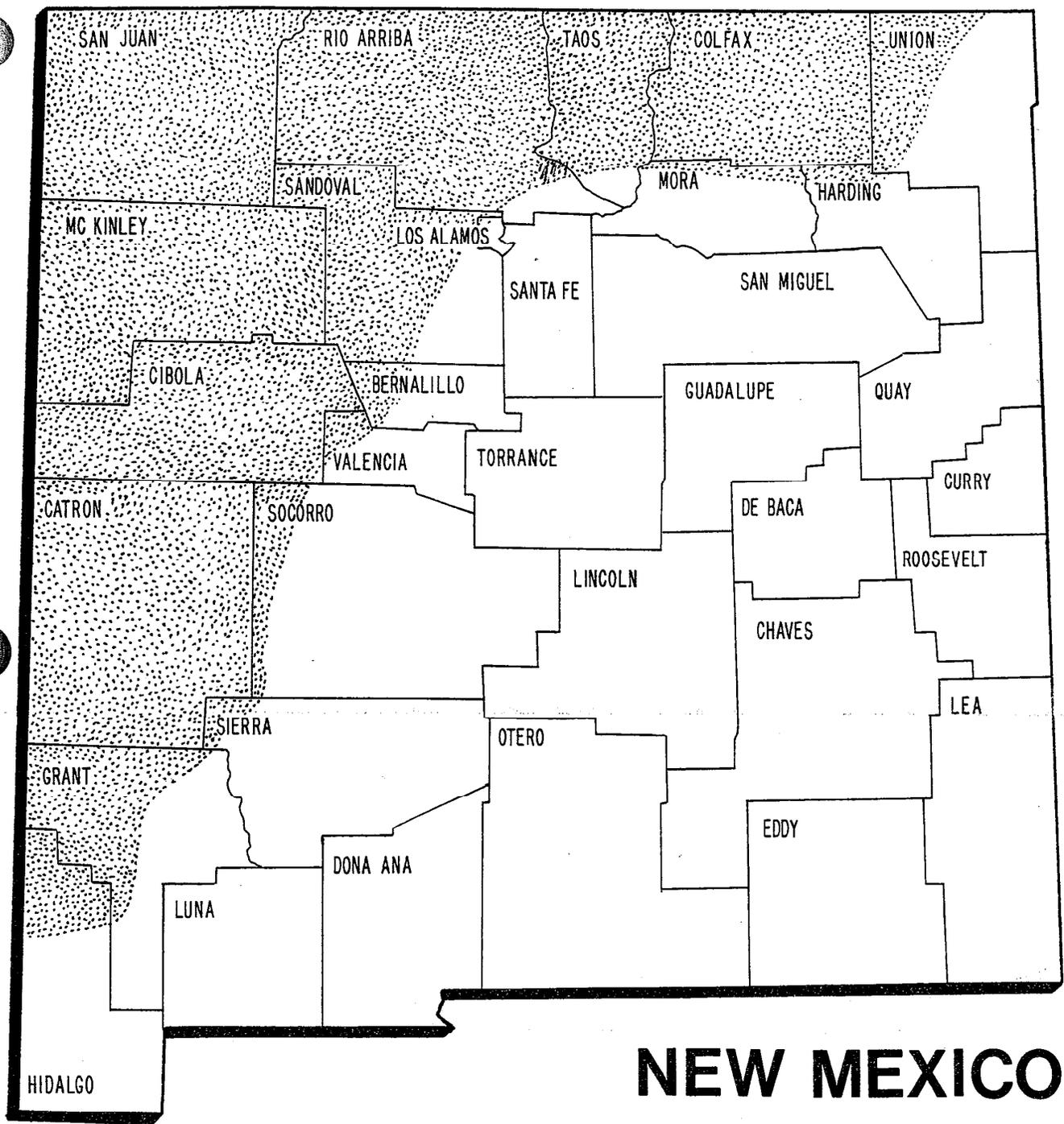


Figure 17

Distribution of Nelson larkspur, *Delphinium nelsonii* in New Mexico, 1979

Delphinium virescens

Larkspur

Ranunculaceae

Description:

Larkspur is a perennial herb with stems to 30 cm tall, puberulent with fine, curling, white hairs; the leaves are basal. The sepals of the flower are whitish or pale lavender-blue; the spur slender, 15 to 20 mm long. The lower petals are white, conspicuously white-pilose, deeply notched at the apex into acuminate triangular lobes, the sinus is 4 to 6 mm deep (Kearney and Peebles 1960).

Distribution and Habitat:

Larkspur grows in open flats, valley floors and gentle foothill slopes up to 6,000 feet in New Mexico and also occurs in other states west of the Mississippi from Canada to Mexico.

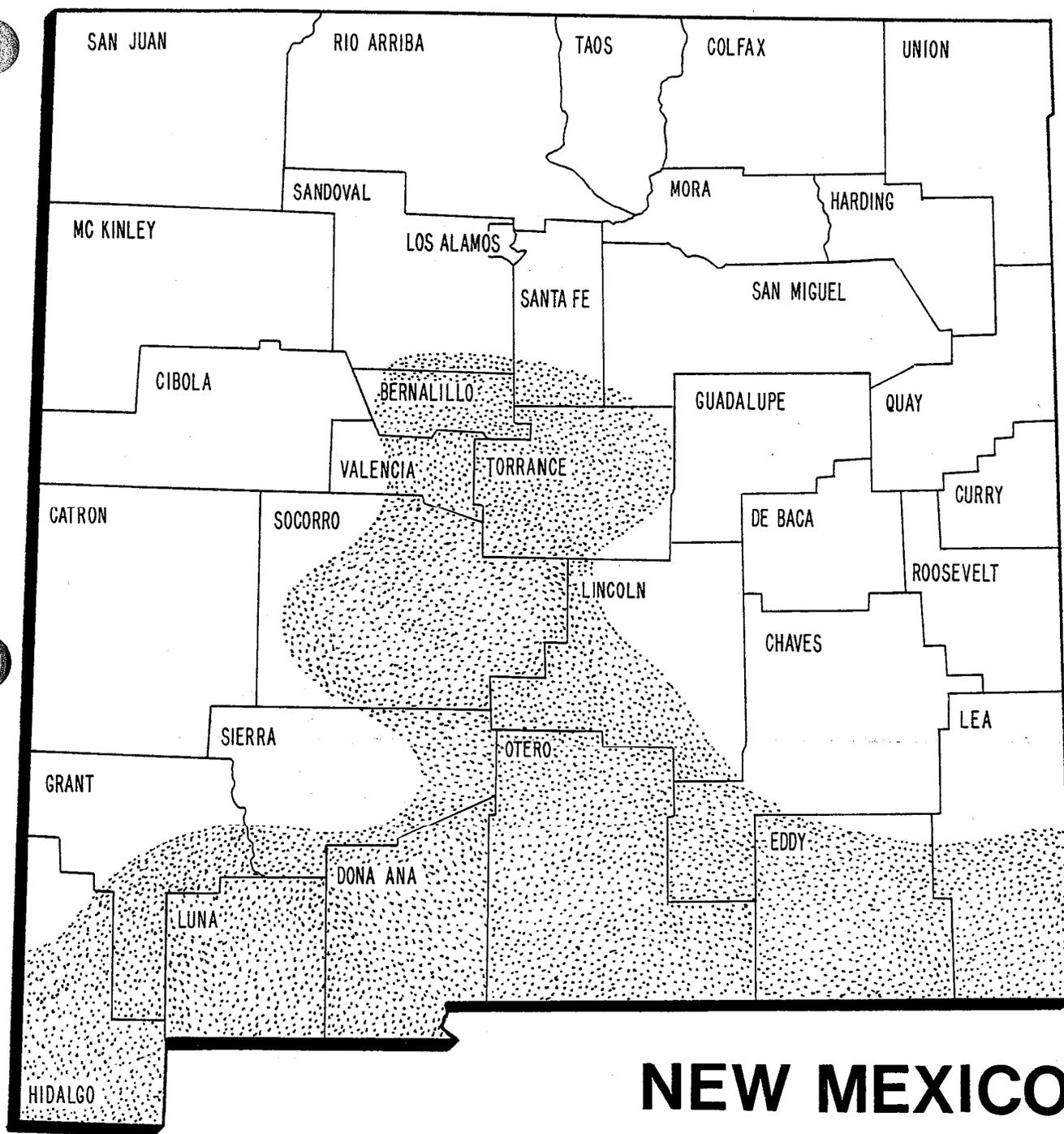
Toxic Principle and Clinical Symptoms:

Larkspur is poisonous to cattle, horses, and to a lesser degree in sheep. The poisonous principles in larkspur are complex alkaloids, one of which is delphinine. Some species of larkspur are toxic at 0.5 percent of the animal's body weight and lethal at 0.7 percent body weight.

Symptoms of poisoning appear to be largely the result of general weakness brought about by the action of alkaloids on the nervous system. These symptoms include uneasiness, muscular twitching, straddled stance, sudden collapse, rapid and weak pulse, constipation and bloat. In fatal cases death occurs quickly and is due to asphyxiation or respiratory paralysis.

Survey:

Because of its early flowering, this survey probably does not indicate the extent to which larkspur occurs. The survey found it in heavy textured soils in the desert and on slopes and hillsides, as well as heavy soils in higher rainfall areas. The distribution of this plant is shown in Figure 18.



# NEW MEXICO

Figure 18

Distribution of larkspur, *Delphinium virescens* in New Mexico, 1979

Description:

Water hemlock is a herbaceous perennial resembling garden parsnips. Stems are hollow, branch freely, and grow to 6.1 to 18.3 dm from a vertical or horizontal chambered tuberous base. The leaves are one to three-pinnately divided and composed of 3 to 10 cm long narrow sawtooth-edged leaflets. The several flower bracts are ovate to linear, 2 to 15 mm long with rays 2 to 6 cm long. These small greenish-white flowers form a broad umbel at the top of the stems. The fruit is ovoid to globose, 2 to 4 mm long (Booth and Wright 1959).

Distribution and Habitat:

Water hemlock grows from Alaska south to New Mexico and Arizona (Davis 1952). Water hemlock is commonly found in wet mountain meadows and pastures and along the banks of streams.

Toxic Principle and Clinical Symptoms:

Water hemlock is probably the most poisonous plant in the United States and is poisonous to livestock and humans. Animals seldom eat water hemlock if good forage is available. Most losses occur in early spring or after herbicidal treatment when the plant is more palatable. The poisonous substance cicutoxin, an unsaturated alcohol, is found principally in the roots, but is present in the leaves and stems during early growth (Reed 1970). Symptoms of poisoning are muscular twitching, frothing, dilated pupils, abdominal pain and severe convulsions. Death results in 15 minutes to 2 or 3 hours. Treatment is ineffective when lethal doses are ingested (Schmutz et al. 1968).

Survey:

Water hemlock was found in higher elevations, normally along streams, seeps, or permanently wet meadows. The distribution of this species is shown in Figure 19.

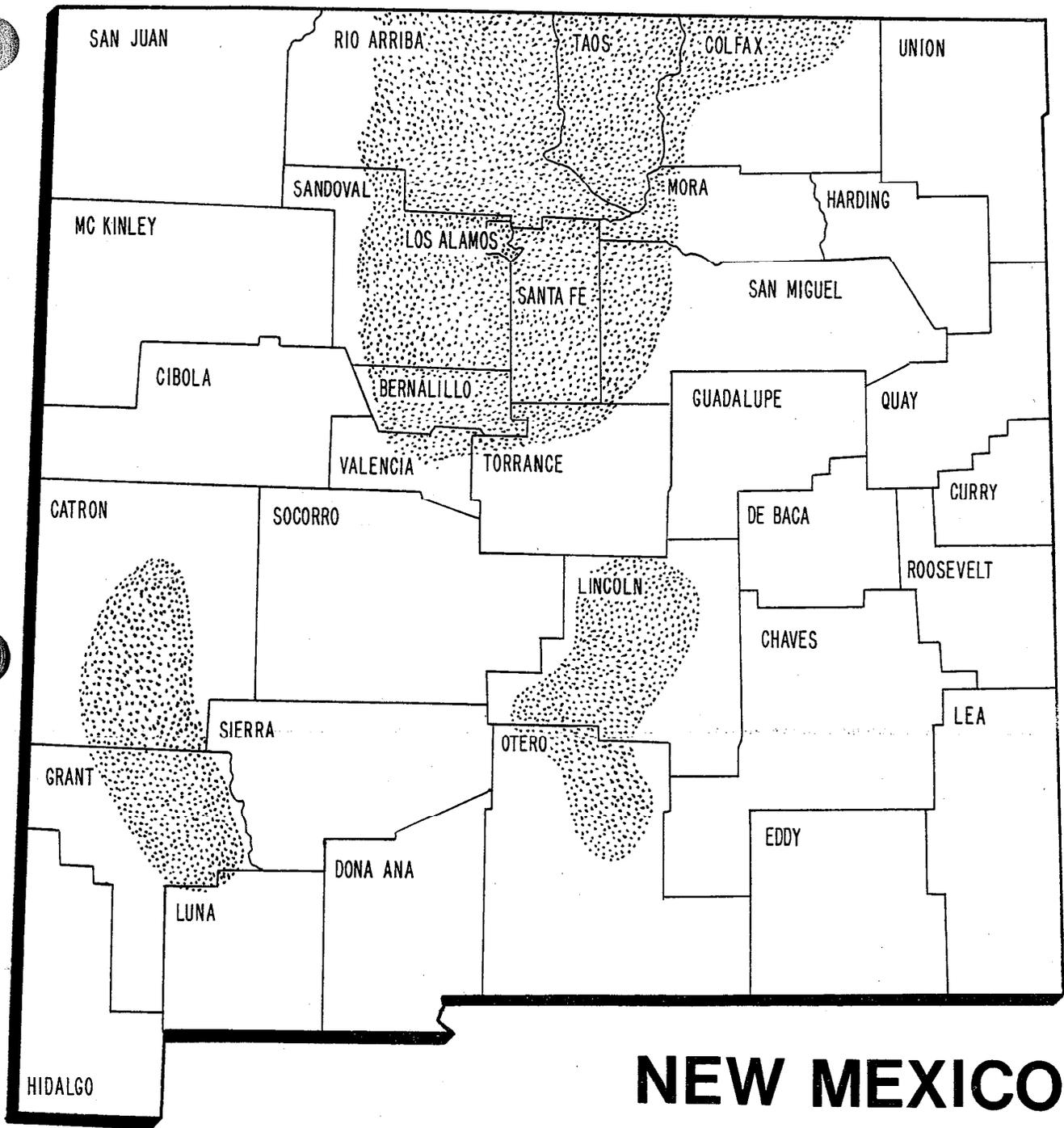


Figure 19

Distribution of water hemlock, *Cicuta douglasii* in New Mexico, 1979

Description:

This erect, much branched perennial plant grows 12.2 to 24.4 dm high from a white, fleshy, usually unbranched taproot. The stout stems are hollow except at the nodes, and are usually spotted with purple, especially in the lower portions. The leaves are large and smooth, triangular in outline and pinnately divided three to four times into wedge-shaped leaflets. The small white flowers are in umbel-shaped clusters. The fruit consists of two dry, ribbed, one-seeded capsules joined by their faces. The herbage has a disagreeable odor (Schmutz et al. 1968).

Distribution and Habitat:

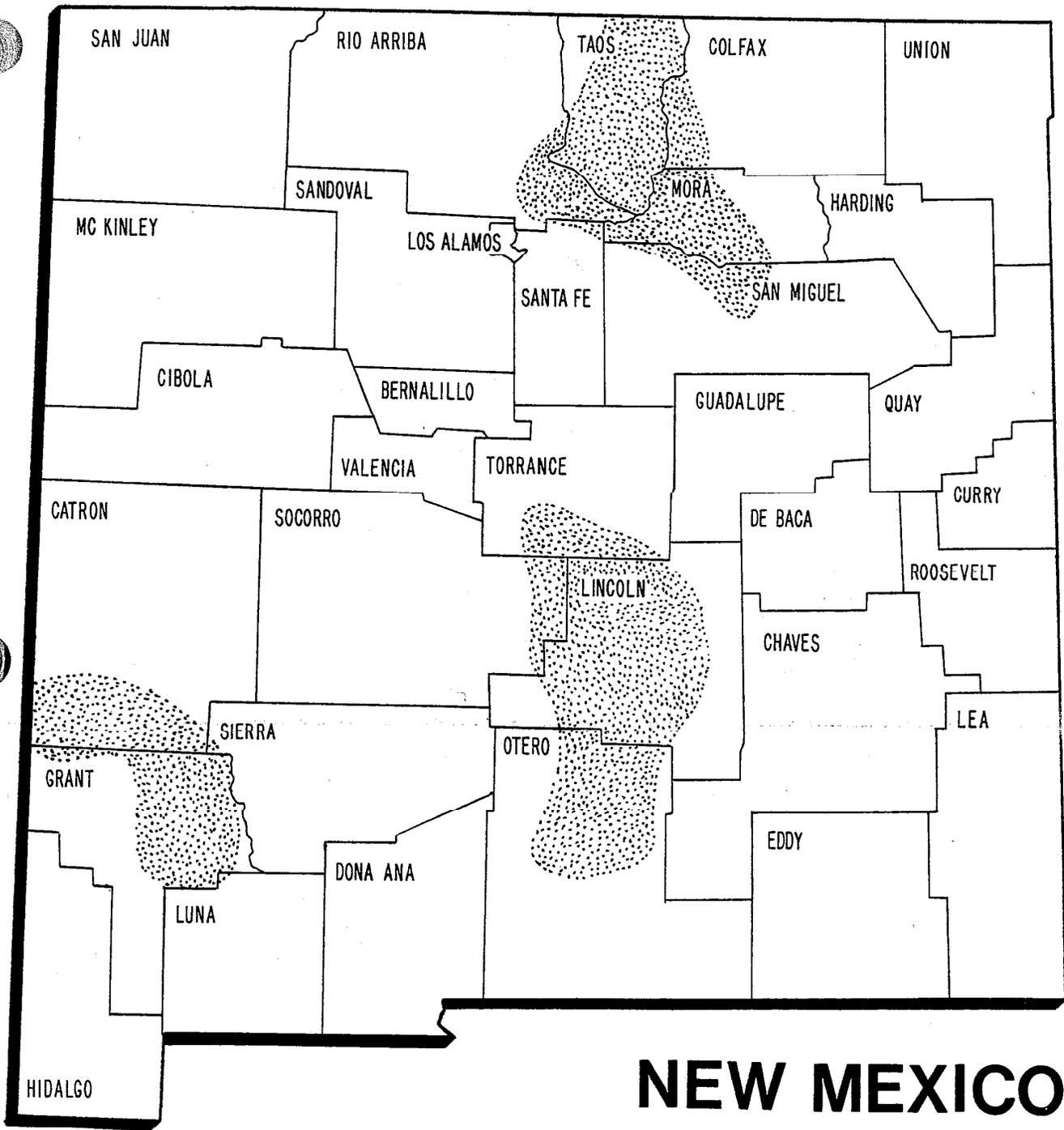
Poison hemlock is a native of Europe that has become naturalized in North America. It is found in nearly every state of the United States and grows in field borders, pastures, meadows, stream banks and waste places in rich, moist, gravelly or loamy soils (Reed 1970).

Toxic Principle and Clinical Symptoms:

The toxic principle of poison hemlock is coniceine and coniine. The toxic principle slowly disappears when the plant dries. All animals are equally poisoned by poison hemlock. Signs of poisoning usually develop soon after the animal eats the plant. There is an initial transitory stimulation followed by severe depression of the central nervous system that results in paralysis, coma, slowing of the heart and death from paralysis of the respiratory muscles. Other symptoms are trembling, incoordination and abdominal pain (Evers and Link 1972).

Survey:

Poison hemlock was found from 4,000 to 8,500 feet along creeks in shaded areas, along rivers and around margins of high elevation fields or moist areas. This late season plant grows from mid-June to September. The distribution of poison hemlock found by this survey is shown in Figure 20.



# NEW MEXICO

Figure 20

Distribution of poison hemlock, *Conium maculatum* in New Mexico, 1979

Datura stramonium

Jimsonweed

Solanaceae

Description:

Jimsonweed is an annual herb reproducing by seed. The thick root is shallow and extensively branched. This stout, erect, spreading plant is 3 to 15 dm tall, green to purplish in color and glabrous. The alternate leaves of this strongly scented plant are simple, oval and unevenly toothed. The dark green glabrous leaves are about 7 to 20 cm long with stout petioles. The white to pinkish funnel-shaped flowers are 5 to 12 cm long. The elongated, globular capsule is covered with short, sharp spines. The four-valved, four-locular capsules contain dark brown to black, flattened, kidney-shaped seeds (Kearney and Peebles 1960).

Distribution and Habitat:

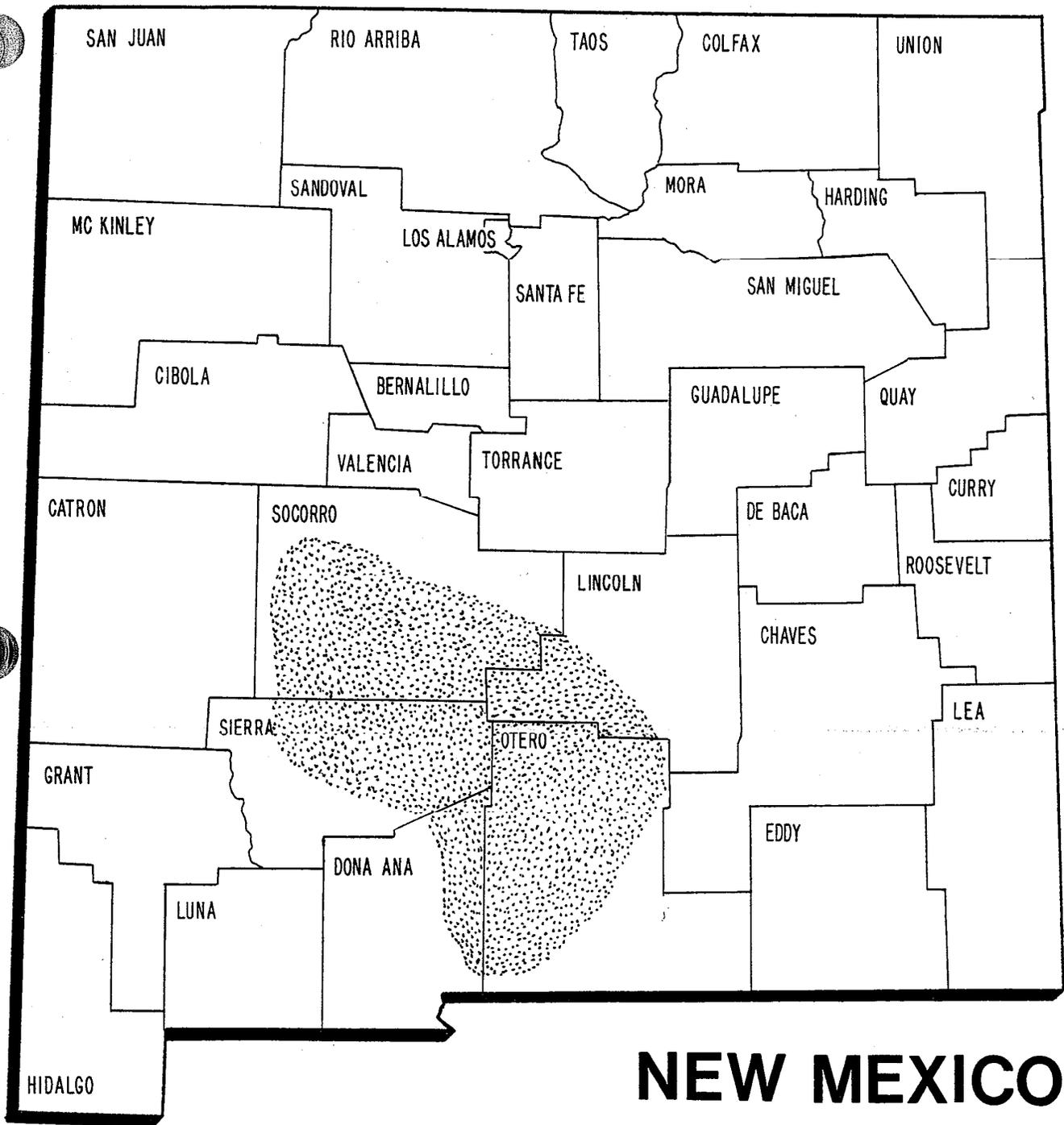
Jimsonweed is naturalized throughout the United States (Kearney and Peebles 1960). It is a weed of waste places and poor condition ranges.

Poisonous Principle and Clinical Symptoms:

All parts of the plant are poisonous to humans, horses, cattle, sheep and pigs. The odor of the plant discourages grazing to a great extent. Jimsonweed contains various alkaloids, including atropine, (daturine,) scopolamine and hyscyamine (Sperry et al. 1964). These toxic substances produce subnormal temperature, restlessness, muscular twitching, incoordination, paralysis, delirium, respiratory paralysis and death (Hulbert and Oehme 1961).

Survey:

Jimsonweed was found growing in waste places, disturbed sites, and along roadways. Figure 21 shows distribution of jimsonweed found by this survey.



# NEW MEXICO

Figure 21

Distribution of jimsonweed, *Datura stramonium* in New Mexico, 1979

Description:

Sacred datura is a grayish-green perennial with stout, erect, branched stems forming a spreading clump and reproducing by seed only. The large rough glandular leaves are long-stalked, triangular, somewhat lobed and about 5 to 35.6 cm long and 2.5 to 20.3 cm broad. Short, flowering branches arise from the leaf axils along the main stems. The flowers are large and showy, short-stalked, solitary in the forks of the stem and fragrant. The calyx is 8 to 13 cm long and five-toothed. The corolla is broadly funnel-shaped, white to pale lavender, five-toothed and 15 to 20 cm long. The large globe-shaped seed pods 2.5 to 3.8 cm across are on down-curved stalks. Seeds are light brown when ripe (Kearney and Peebles 1960).

Toxic Principle and Clinical Symptoms:

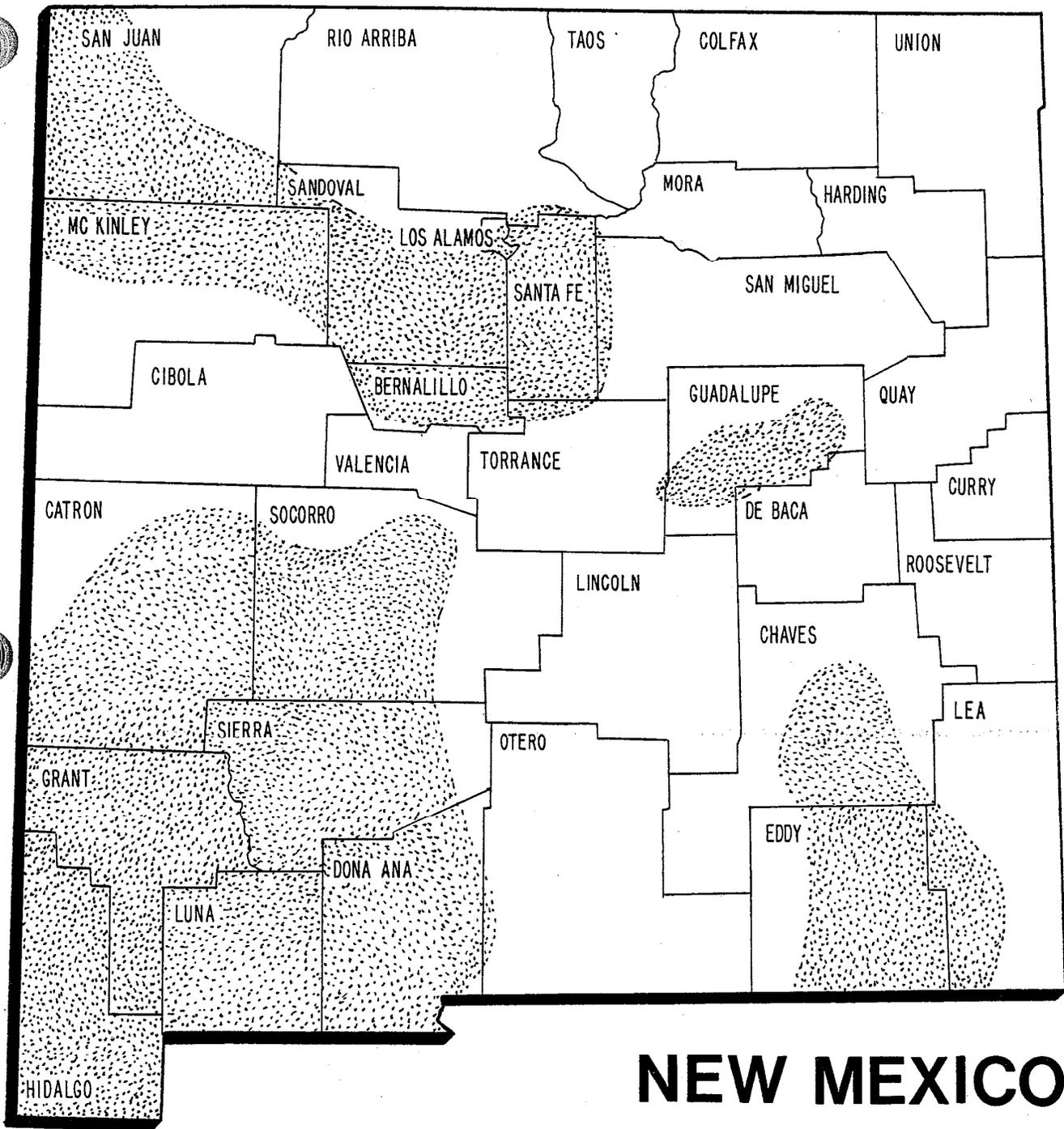
All parts of the plant are poisonous to humans, horses, cattle, sheep and pigs. The odor of the plant discourages grazing to a great extent. Toxicity is due to several solanaceous alkaloids. Less than 0.1 percent of the body weight of cattle has proven fatal. Symptoms are similar with humans and livestock and include intense thirst, distorted vision and incoordination, high temperature, rapid and weakened heartbeat, convulsion, coma and death (Schmutz et al. 1968).

Distribution and Habitat:

Sacred datura grows from Colorado to Texas, New Mexico, Arizona, southern California and Mexico (Kearney and Peebles 1960).

Survey:

Sacred datura was found on dry soils of all textures, but prefers sandy or gravelly soils. The species is found throughout western New Mexico at elevations below 7,000 feet along roadsides and road cuts, dry rocky areas, river bottoms and hillsides. The distribution of Datura wrightii is shown in Figure 22.



# NEW MEXICO

Figure 22

Distribution of sacred datura, *Datura wrightii* in New Mexico, 1979

Description:

Broom snakeweed is a low compact perennial half-shrub, 1 to 5.5 dm tall, from a woody base which becomes a branched crown in old plants, reproducing by seeds only. The numerous yellow-flowered heads are narrow turbinate (top shaped) and covered by sticky resin. Each head has from three to eight disks and from three to eight ray flowers. The leaves are alternate and filiform (Sperry et al. 1968).

Distribution and Habitat:

Broom snakeweed occurs from Washington, Manitoba and Montana southwest to Texas, New Mexico, Arizona and into old Mexico. It is also found in southern California and central Oklahoma, Kansas, Nebraska and the Dakotas (Benson, 1981). It grows well on a variety of soils from shallow to deep sandy, and well developed loams and clays (Dayton 1931). This aggressive perennial half-shrub competes heavily for soil, moisture and nutrients.

Toxic Principle and Clinical Symptoms:

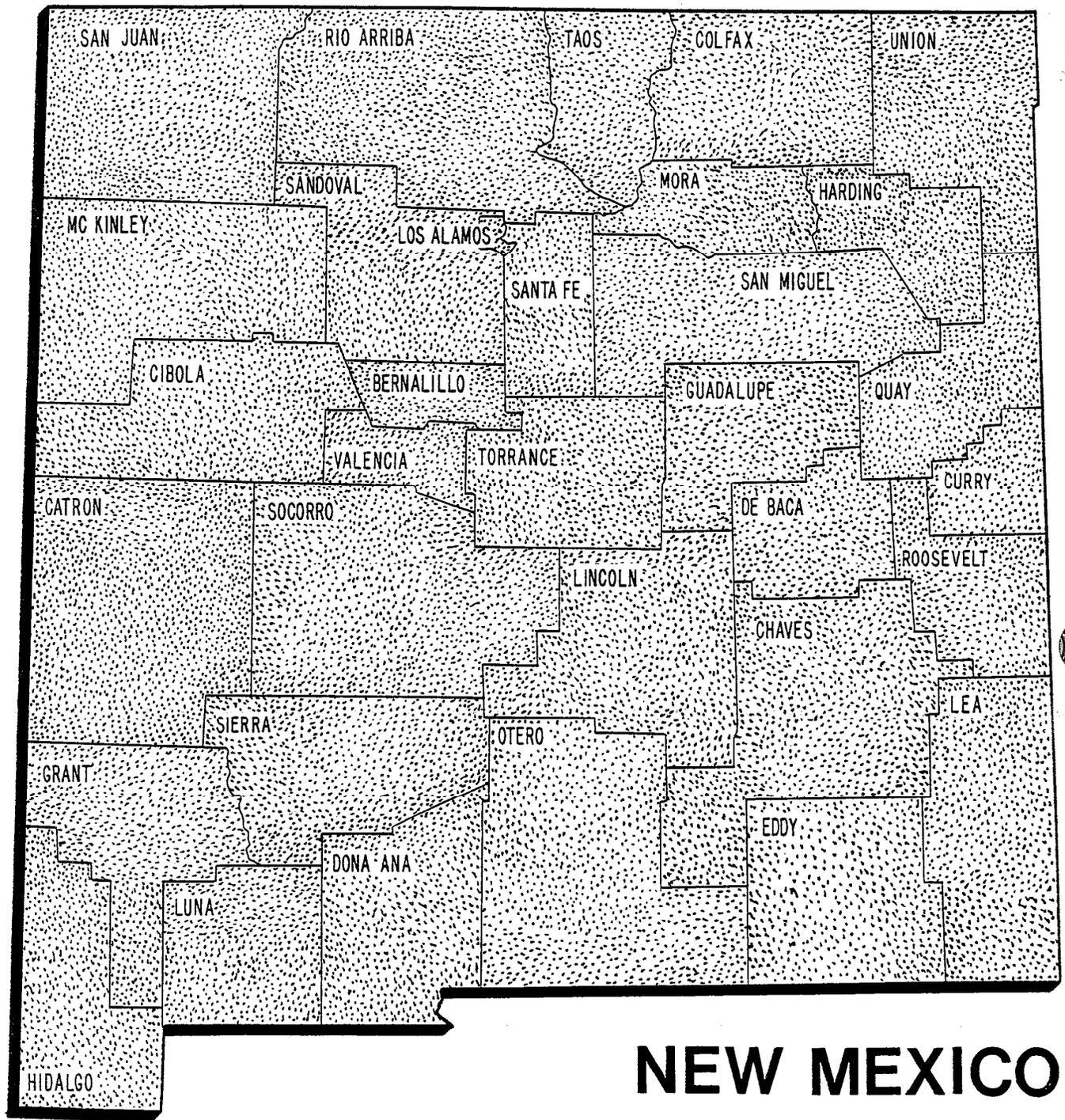
The toxic principle in snakeweed has been isolated as a saponin (Kingsbury 1964). Broom snakeweed is poisonous to all classes of livestock. The most common problem with the plant is abortion in cattle. This problem becomes more acute when snakeweed grows on sandy soils; where 5-60 percent of the cow herd commonly aborts, delivering dead or small, weak calves.

Acutely poisoned livestock develop periodic nasal discharge, the skin of the muzzle becomes crusted and sloughs and buccal ulcers may be present. Livestock will lose their appetite, lose weight, have a listless attitude, and develop a rough coat. Diarrhea, observed in the early stages, changes to constipation and large amounts of mucus are found in the foul-smelling feces (Dollahite and Anthony 1957).

Survey:

Broom snakeweed has become a major range problem throughout the state. Following severe droughts during the 1970's, it has become one of the most serious and most widespread noxious plants infesting New Mexico's rangelands. There is a significant reduction in forage production on rangelands heavily infested with broom snakeweed. It is a natural component of New Mexico rangelands in minor quantities, but a combination of grazing practices and climatic fluctuations has released the plant to the large quantities evidenced.

The 1979 survey found the highly cyclic broom snakeweed statewide at elevations below approximately 7,000 feet. The distribution of Xanthocephalum sacrothrae is shown in Figure 23.



# NEW MEXICO

Figure 23

Distribution of broom snakeweed, Xanthocephalum sarothrae in New Mexico, 1979

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