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GUAYULE

A List of References

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This bibliography supersedes, and is a revision of, Guayule: A List of References, by Alan J. Blanchard, issued in April 1942 as Soil Conservation Bibliography No. 4.

Call numbers following the citations are those of the United States Department of Agriculture Library.

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FOREWORD TO SOIL CONSERVATION BIBLIOGRAPHY NO. 4

Using the resources of the libraries listed in "Sources consulted," efforts were taken to make this alphabetical list as complete as possible. All phases of guayule - the shrub, extraction of rubber from it, and the manufacture of finished products from this rubber - are covered.

In the heyday of the wild shrub industry in Mexico, during the first decade of this century, references of some kind were made in many issues of the trade journals, especially India Rubber World. Since many of these were small items, it was decided, with few exceptions, to exclude those less than a half-page in length.

Only published items are included and no attempt was made to search for references to newspaper articles. However, a few rather long, signed articles came to the attention of the compiler, and have been included.

For convenience, Department of Agriculture Library call numbers have been inserted for items available in that Library.

Numerical symbols in the index refer to item numbers.

Alan J. Blanchard
March 1, 1942

1. ACRES for guayule; government's promotion of rubber-bearing bush is launched in California area where crop is already established. Business Week, No. 649, p. 68, 70. Feb. 7, 1942. 280.8 Sy
"One group of authorities advocates sowing seeds thickly like grain and allowing them to grow unattended and unwatered for nine months, then harvesting the plants which, they say, will average 1,164 lb. of rubber per acre."
2. ALEXANDER, PAUL. Some of the constituents of Parthenium argentatum (Gray), the shrub from which comes the so-called "guayule rubber." Internatl. Rubber Cong. Proc. (1911) 2: 216-222. 78.9 In82
Bibliographical footnotes.
3. ALEXANDER, PAUL. Ueber bestandteile von Parthenium argentatum Gray, der stammpflanze des guayule-kautschuks. Deut. Chem. Gesell. Ber. 44: 2320-2328. Sept. 23, 1911. 384 B45
Bibliographical footnotes.
Some constituents of P. arg. G., the source of guayule rubber. Investigation of the acetone-soluble constituents and ethereal oil derived from the plant.
Abs. in Chem. Zentbl. 82, bd. 2: 1820-1821. 1911. 384 C42; Chem. Abs. 5: 3921. 1911. 381 Am33C
4. ALEXANDER, PAUL, and BING, K. Ueber die gewinnung von kautschuk aus getrockneten kautschukpflanzen. Tropenpflanzer 12(2): 57-68. Feb. 1908. 26 T75
Discusses the extraction of rubber from dried rubber plants, including guayule.
Reprinted in Gummi Ztg. 22: 604-607. Mar. 6, 1908. 305.8 G95
Abs. in Chem. Abs. 2: 1494. 1908. 381 Am33C
5. ALTAMIRANO, FERNANDO. Datos por la historia y explotación del "guayule." Mex. Sec. de Fomento. Bol. II, 5: 1098-1123. 1905/06. 8 F732A
Data on the history and production of guayule.
Answer by the National Medical Institute to a questionnaire on guayule, including a translation of Rudolph Endlich's "Der guayule und seine wirtschaftliche bedeutung" (see item No. 83).
6. ALTAMIRANO, FERNANDO. Memorias sobre algunas exploraciones botánicas practicadas en diciembre de 1907. Inst. Méd. Nac. An. 10: 15-40. Jan./Mar. 1908. 516 M577
Visit to the [guayule] rubber factory in Saltillo [Mexico], p. 19-22.
7. AMERICAN rubber, guayule. Sci. Amer. 144: 406-407. June 1931. 470 Sci25
A follow-up on D. T. MacDougal's article, "Can we grow our own rubber" (see item No. 229).
Guayule shrubs at Salinas, Calif., have reached maturity, been harvested, and a factory built - Guayule rubber used in tires - Economics of guayule depend on price of hevea.
8. AMPAR balloon tires; standard tires made from [guayule] rubber grown in the United States; Ampar crude rubber equal to plantations in quality at a substantial saving in price. India Rubber World 77(4): 65-66. Jan. 1928. 305.8 In2
9. ANDERSON, J. Z. Domestic supply of rubber. Cong. Rec. 87: 3137-3142. 1941. 148.2 R24
Statement in House, Apr. 16, 1941 (77th Congress, 1st session).
General discussion of the development of the guayule rubber industry in

the United States, its economics, the need for an increased domestic supply because of the defense emergency, concluded with six reasons why the Federal Government should be interested in encouraging the guayule industry; includes letter on historical background of guayule in the United States from Dr. E. C. Auchter, Chief of the U. S. Bureau of Plant Industry, to Mr. Anderson, and correspondence between the latter and Secretary of Agriculture Wallace on Department investigations into the possibility of producing rubber in the Western Hemisphere.

10. ANDERSON, J. Z. Guayule rubber seen as defense product; extension of remarks...in the House of Representatives...September 19, 1940. Cong. Rec. 86: A5778. 1941. 148.2 R24
76th Congress, 3d session.
Article from New York Times, Sept. 12, 1940; interview with William O'Neil, president of General Tire and Rubber Co., who urged domestic cultivation of guayule.

11. ANDERSON, J. Z. Production of rubber in the United States; extension of remarks...in the House of Representatives...April 25, 1940. Article prepared by the Salinas, Calif., Chamber of Commerce. Cong. Rec. 86: A2429-2430. 1940. 148.2 R24
76th Congress, 1st session.
Urges production of guayule rubber in the United States through government assistance.

12. ANDERSON, J. Z. Rubber; extension of remarks...in the House of Representatives...March 13, 1940. Letter from Salinas [Calif.] Chamber of Commerce. Cong. Rec. 86: A1416-1417. 1940. 148.2 R24
76th Congress, 3d session.
Urges development of domestic guayule industry.

13. ANDERSON, J. Z. Rubber; extension of remarks...in the House of Representatives...March 24, 1941. Editorial from the San Jose [Calif.] Mercury-Herald. Cong. Rec. 87: A1355. 1941. 148.2 R24
77th Congress, 1st session.
Urges federal interest in guayule rubber.

14. ARGENTINA. MINISTERIO DE AGRICULTURA. DIRECCIÓN DE PROPAGANDA Y PUBLICACION La producción de caucho en el país. Argentina. Min. de Agr. Dir. de Prop. y Pub. Noticioso 7(160): 45. Mar. 20, 1942. 9 Ar311N
Notes the plan to attempt the cultivation of guayule in Argentina on a large scale. The organization and control of the work will be in care of the Special Crops Section of the Experiment Stations Division of the Ministry of Agriculture.

15. ARTSCHWAGER, ERNST. Contribution to the morphology and anatomy of guayule (Parthenium argentatum). U. S. Dept. Agr. Tech. Bul. 842, 34 p. Washington, 1943. 1 Ag84Te

16. AS TO machine-grown rubber. India Rubber World 59: 231. Feb. 1919. 305.8 In2
Machine-grown guayule "is a million-dollar undertaking and the small operator has no great chance. With the expansion of business, however, it is perfectly possible that central factories will be installed for extraction and that guayule-growers will ship their product in as the beet-growers do theirs to the sugar centrals."

17. ATREVIDO. Die gewinnung von kautschuk aus der guayule-pflanze (Parthenium argentatum Gray). Gummi Ztg. 23: 93-94. Oct. 23, 1908. 305.8 G95
Description of the mechanical and chemical methods of the extraction of rubber from guayule.

18. ATREVIDO. Handelssorten des guayule-gummi deren herstellung und erkennungszeichen, unter alleiniger berücksichtigung des mechanischen verfahrens. Gummi Ztg. 23: 500-501. Jan. 22, 1909. 305.8 G95
Commercial varieties of guayule rubber, its manufacture and characteristics, with regard solely for the mechanical process.

19. BARBER, JACKSON. Possibilities of guayule rubber in America; a question-and-answer forum concerning the widespread development of guayule in America. Rubber Age 49: 327-329. Aug. 1941. 305.8 R82
Quotations from letters by Rep. John Z. Anderson and Dr. David Spence.

20. BATEMAN, G. F. The actual facts about guayule in the Rocky Mountain area. West. Farm Life 44(6): 5, 10. Mar. 15, 1942. 6 R153
"Botanists at the Colorado state college experiment station are of the opinion that the only spot in Colorado that would meet the requirements of guayule raising is in the extreme southeast corner."

21. BAUMHOFER, L. G. Potential insect enemies of guayule. 13 p., processed. Washington, U. S. Bur. Ent. and Plant Quar., 1942. 1.967 F4P84

22. BECKETT, R. E., STITT, R. S., and DUNCAN, E. N. Growth and rubber content of Cryptostegia, guayule and miscellaneous plants investigated at the United States acclimatization garden, Bard, California, 1923-1934. 18 p., processed. Washington, U. S. Bur. of plant industry, Special rubber investigations, 1942. 1.965 R2G91

23. BENEDICTIS, A. DE. Il guayule. Agr. Colon. [Italy] 23(1): 16-18. Jan. 1929. 26 Ag82
History and description of plant; planting experiments in Eritrea since 1927.
Abs. in Bot. Centbl. 159: 381. Nov. 11, 1930. 450 B65

24. BINKLEY, A. M. Adaptation of guayule shrub, desert plant which bears rubber, doubtful in Colorado. Colo. Agr. Expt. Sta. Colo. Farm Bul. 3(4): 14. Oct./Dec. 1941. 100 C71S
Colorado climate unsuitable.

25. BLANEY, H. F. Rubber from guayule. Agr. Engin. 24: 194-196. June 1943. 58.8 Ag83

26. BLYTHE, S. G. Taming the wild guayule. Sat. Evening Post 203(44): 28, 30, 106, 109-110. May 2, 1931.
History of the plant in Mexico; Dr. McCallum's experiments in cultivation; Dr. Spence's chemical achievements; Relationship of guayule to rubber industry as a whole.

27. BOCHANTSEVA, Z. P. K biologii tsveteniia guaĭiuly Parthenium argentatum Gray. Sredne-Aziatsk. Gosud. Univ. Trudy (Univ. Asiae Mediae Acta) Ser. 8-b, Bot., fasc. 15, 16 p. Taschkent, 1933. 511 T18B
Essay on the biology of the blossoming of Parthenium argentatum Gray.

28. BÖHME, R. W. Kautschuk aus pflanzen in nördlichen breiten. Umschau 45: 321-323. 1941. 474 Um7
Rubber from plants in the northern latitudes.

29. *BOESEN, V. H. California's rubber rush. Coronet 12: 79-83. Sept. 1942. Libr. Cong.

30. BONNER, JAMES. Effects of temperature on rubber accumulation by the guayule plant. Bot. Gaz. 105: 233-243. Dec. 1943. 450 B652

31. BOSSE, G. Gvaĭiula. Zhurn. Rezinovoĭ Promysh. 1928(2/3): 71-77. Feb./Mar. 1928. Ref., p. 76-77.

32. BOUTARIC, J. Résumé d'une étude sur diverses gommes de Madagascar et leur mélange avec du guayule et de la balata. Caoutchouc et la Gutta-percha 16: 9893-9900. Aug. 15, 1919.
Summary of a study on various Madagascar gums and their mixture with guayule and balata.
Abs. in Chem. Abs. 13: 3337. 1919. 381 Am33C; Chem. Zentbl. 90, bd. 4: 781-782. 1919. 384 C42

33. BOWERS, G. B. Our home-grown rubber. Flower Grower 13: 133. Mar. 1926. 80 M72
"In the United States [guayule] production has been largely experimental. Near Escondido, California, five-hundred acres produce seed for a large tract at Continental, Arizona, where important experiments are being carried on."

34. BRANDES, E. W. Go ahead, guayule! U. S. Off. Foreign Agr. Relat. Agr. in the Americas 2: 83-86. May 1942. 1 F752A
Guayule program of the U. S. Department of Agriculture. Cultural practices used at Salinas, Calif., are described.

35. BRINGING guayule into central California; modern machinery combined with the most scientific botanical research is successfully introducing this Mexican rubber plant into the United States. Rubber Age 24(1): 28-29. Oct. 10, 1928. 305.8 R82
Intercontinental Rubber Company's plantation in Monterey County - 8 photographs show planting process in sequence.

36. BRINK, R. L. Guayule - the desert's rubber bush. Christian Sci. Monitor Mag., Oct. 23, 1943, p. 2, 11. Libr. Cong.

37. BROKE, W. S. Guayule. Out West (n. s.) 1: 177-181. Feb. 28, 1911.
"Alfred Burbank at his experimental gardens at Prado [Calif.] has succeeded in making the plant reproduce itself."

38. *BUSH with a bounce. Shell Prog., Oct. 1943, p. 8-9.

39. CALIFORNIA. LEGISLATURE. ASSEMBLY. Assembly joint resolution 41, relative to memorializing Congress to investigate the feasibility of growing of guayule rubber in California, and, if found feasible, to subsidize the same. Cong. Rec. 87: 4390. 1941. 148.2 R24
77th Congress, 1st session.

40. CALVINO, MARIO. Gomma elastica Italiana. Costa Azzurra Agr. e Floreale 14: 197-203. Aug. 1934. 16 C82
Includes guayule.

41. CALVINO, MARIO. Propagación del guayule. Mex. Estac. Expt. de San Jacinto. Hoja 3, 2 p. San Jacinto, D. F., 1910. 102 M572H
Propagation of guayule by cuttings.

42. CARNAHAN, G. H. American-grown rubber produced from guayule. Chem. & Metall. Engin. 38: 128-131. Mar. 1931. 381 E12
History of plant and production of rubber from it; Advantages of guayule over hevea, in that hevea carries rubber as a sealer of wounds whereas guayule builds it up as a concentrated reserve food supply; Ton of guayule rubber produced with one-sixteenth man-hours necessary for a ton from hevea.
Partially reprinted in Lit. Digest 110: 26. Sept. 19, 1931.

43. CARNAHAN, G. H. The production of guayule rubber. Indus. and Engin. Chem. 18: 1124-1126. Nov. 1926. 381 J825
Soil and climatic conditions necessary for growing guayule; Comparative factors in guayule and plantation industries (labor cost, diseases and

pests); Future industrial outlook; Change in policy regarding guayule development (need for active cooperation by agriculturists and rubber manufacturers with the one company that so far has developed guayule). Abs. in India Rubber and Tire Rev. 26(9): 34-35. Sept. 1926. 305.8 In23
Reprint in Rubber Age 20: 136-137. Nov. 10, 1926. 305.8 R82

44. CARNAHAN, G. H. Recent guayule developments - chemical, cultural, and mechanical improvements. India Rubber World 79(1): 53-55. Oct. 1928. 305.8 In2

45. CAROTHERS, G. C. Guayule in northern Mexico; the pebble method of extracting rubber from the plant...prices and exports of guayule and rubber. U. S. Bur. Manufactures. Monthly Consular and Trade Rpts. 353, p. 144. Feb. 1910. 157.7 C76
Report by Consular Agent at Torreon, Mex.

46. CAUCHO del guayule. Soc. Agr. Mex. Bol. 34: 165-166. Mar. 1, 1910. 8 Sol B
Gives description of the plant and the extraction process.

47. EL CAUCHO mexicano. Soc. Agr. Mex. Bol. 36, i. e. 34: 767-768. Oct. 17, 1910. 8 Sol B
Discusses importance of the industry and three methods of extraction.

48. CELESTINO, GRILLO. La coltivazione del guayule come pianta secondaria da caucciù. Costa Azzurra Agr. e Floreale 17: 92-95. Apr. 1937. 16 C82
Experiments made at the Royal Garden of Acclimatization at Fueihat [Bengazi, Libya] on the acclimatization of guayule.

49. CHEREPANOV, V. Geograficheskie posevy gvaĭiŭly v Azerbaĭdzhane [Geographical planting of guayule in Azerbaijan]. Sovet. Kauchuk. 8: 2. Aug. 1932.

50. CHEREPANOV, V. I. Materialy po raĭonirovaniiu gvaĭiŭly v Azerbaidzhane. Akad. Nauk. Azerbaidzh. Filial. Bot. Inst. Trudy 2: 119-146. 1936. 451 Ak1
Materials on the regional distribution of guayule in Azerbaidzhan.

51. CHILE tries guayule. U. S. Dept. Com. Foreign Com. Weekly 8(8): 26. Aug. 22, 1942. 157.54 F763
"Experiments are being conducted with guayule along the Aconcagua River in the vicinity of Guillosa, Chile, according to press reports."

52. CHUTE, H. O. The deresination of india rubber - III. India Rubber World 40: 351-352. July 1909. 305.8 In2
Includes discussion of the solubility, qualities, and saponification of guayule resin.

53. COHAN, L. H., and MYERSON, B. C. Effect of small amounts of guayule rubber on GR-S compounds. Rubber Age 54: 235-237. Dec. 1943. 305.8 R82

54. COMPAGNO, W. M. The rubber substitute - "guayule." West. Underwriter 11(9): 9. Mar. 1942.
General progress of Salinas, Calif., plantations; broadcast seeding and nursery planting methods of cultivation.

55. COMPTON, R. H. Growing our own rubber supply. Motor Transportation 17(3): 11, 22, 26. Mar. 1942.
Guayule plantations at Salinas, Calif. Methods of planting; estimated yield from different harvest plans.

56. *COMPTON, R. H. Guayule rubber program slowed. Motor Transportation, May 1943.

57. CONGRESS approves guayule bill calling for cultivation of 75,000 acres. Rubber Age 50: 367. Feb. 1942. 305.8 R82

58. CONGRESS increases planting of guayule. Com. & Financ. Chron. 156: 1434. Oct. 22, 1942. 286.8 C73
Digest of House action of Oct. 5, 1942 on appropriation bill granting $19,000,000 for planting guayule in 1943.

59. COOK, H. W. Guayule plant nursery is located in Texas. Project near Edinburg will grow enough seedlings to plant 7,000 acres of rubber shrubs every year. Tex. Prog. 2(4): 13, 24. Apr. 1943. 280.8 T313

60. COOK, O. F. Rubber cultivation for Porto Rico. U. S. Dept. Agr. Div. Bot. Cir. 28, 12 p. Washington, 1900. 1 B65C

61. *COOKE, G. B. Guayule rubber. The Crown 29(12): 9-11, 44. 1941. Libr. Cong.

62. CORK trees, rubber bushes being grown in California. Sci. News Letter 39: 397. June 21, 1941. 470 Sci24
"The new [guayule] stocks being grown are in a nursery sponsored by the Continental Rubber Company, whose directors wish to learn whether guayule can be successfully produced in the interior valleys of California."

63. COTTON and guayule in Lower California. India Rubber World 60: 409-410. May 1919. 305.8 In2
California stirred over whether there was to be a large Japanese colony for the production of cotton and guayule on the immense holdings of the California-Mexico Land & Cattle Co., consisting of 800,000 acres.

64. CRUDE rubber may be produced in California by cultivation of guayule shrub. Merc. Trust Rev. of the Pacific 15: 225-229. Oct. 15, 1926. 286.8 M533
"After fourteen years of experimentation in the southwestern states, including nineteen different plantings on plots ranging from one-half to two hundred acres in California, a large eastern rubber company has selected the Salinas Valley as the most favorable locality to begin its operations."
Includes discussion of rubber industry in general.

65. CULTIVATION to enlarge guayule rubber supply. Rubber Age 20: 127. Nov. 10, 1926. 305.8 R82
"Slowness of wild guayule shrub in reproducing after harvesting together with a greatly enlarged potential demand for improved guayule rubber has promoted experiments in cultivation, the success of which now seems assured. Optimum conditions found near Salinas, California, and the Continental Rubber Co. is expanding guayule plantations there."

66. EL CULTIVO del guayulo no es una novedad en el país. Chacra 13(149): 40-42, 47. Mar. 1943. 9 C34
Points out, in noting an announcement that the first studies have been begun in Argentina on guayule cultivation and that seeds have been introduced there from the United States, that for some years the Tucumán Agricultural Experiment Station has had guayule plants under observation, and that the work of William E. Cross, director of that Station had not been taken into account. Other experiments with rubber-producing plants are noted.
Includes an article by Francisco Hoyos Arroyo (Chileno) entitled: El Guayule, which is a general discussion of the characteristics and cultivation of the plant.

67. CUSTER, J. R. Our rubber lifeline. Automotive Indus. 86(2): 36-39, 54, 56. Jan. 15, 1942. 291.8 Au82
Various sources of rubber, including guayule, are discussed.

68. CUTLER, D. A. Guayule rubber shrub was considered a nuisance for centuries until E. B. Aldrich discovered its possibilities in 1904. Rubber Age 18: 202. Dec. 25, 1925. 305.8 R82
Presented at Centennial dinner at Boston, Mass., Dec. 7, 1925. Aldrich took part in organization of Continental Rubber Co. of America. The latter firm was expected to sell 8,000,000 lbs. of guayule rubber in 1925. Successful use of guayule has been made in tires and hard rubber goods.

69. DEMAND for Mexican rubber: the state of Chiapas has ideal soil and climate and could develop large production. Mex. Com. and Indus., Jan. 1927, p. 8-9. 287 Am3Mj

70. DESERT rubber; native Mexican guayule shrub does its bit in allied scramble for a quick supply of rubber. Inter-Amer. Monthly 1(3): 18-24. July 1942. 280.8 In85
Except for a short descriptive section this is a pictorial representation of harvesting and processing of guayule in Mexican factories and in Salinas, Calif.

71. DIANOVA, V. I., SOSNOVETS, A. A., and STESHINA, N. A. Sravnitel'noe tsito-embriologischeskoe issledovanie raznovidnostei Parthenium argentatum Gray i Parthenium incanum Gray. Jour. Bot. de l'URSS 19: 447-466. 1934. Ref., p. 463-464. 451 R923
Comparative cytoembryological analysis of the varieties of Parthenium argentatum Gray and Parthenium incanum Gray.
Translated into German in Bot. Centbl. Beihefte, Abt. A, Morph. u. Physiol. der Pflanz. 53: 293-308. Apr. 1935. 450 B65B; Abs. in Bot. Centbl. 171: 153. Apr. 26, 1937. 450 B65; Biol. Abs. 11: 1094. May 1937. 442.8 B526

72. DIBBLE, C. H. Guayule rubber grown in Salinas Valley. Calif. Dept. Employment. Careers 4(7): 6-7, processed. July 1941.
Cultivation, harvesting, manufacturing; possible use as a marginal land crop.

73. DITMAR, R. Vulkanisationsstudien über guayule-kautschuk. Gummi Ztg. 20: 972. June 29, 1906. 305.8 G95

74. DOERING, J. H. Guayule rubber in tires and tubes; service tests in which the rubber exclusively guayule. Indus. and Engin. Chem. 26: 541-543. May 1934. 381 J825
"Tires and tubes have been made in which the rubber used was exclusively guayule. These were of the 4.50 x 21 size and were tested in Florida over a period of 2 years. These tires failed at mileages between 8,500 and 10,500 because of tread wear. The inner tubes gave satisfactory service throughout the duration of the test. The problems connected with the development and processing of the compounds are discussed, and the formulas are given."
Abs. in Science 78(2020): sup., p. 9. Sept. 15, 1933. 470 Sci2; Soc. Chem. Indus. Jour. Brit. Chem. Abs. B, p. 638. July 20, 1934. 382 B773; Chem. Abs. 28: 4267. July 10, 1934. 381 Am33C

75. DOWNEY guayule bill a law. India Rubber World 107: 181. Nov. 1942. 305.8 In2
Provisions of bill; size of current plantations and 1944 prospects.

76. DUFRENOY, J. Le caoutchouc de guayule (Parthenium argenteum (?) Gray). Agron. Colon. [Paris] 23: 168-172. June 1934. 26 Ag812
"A review of present-day developments, with particular reference to the botanical aspects." - Chem. Abs. 29: 4621. July 10, 1935. 381 Am33C
Reprint in Rev. Gén. Caoutchouc 12(108): 28-29. Jan. 1935.

77. DUHAIME, V. L. Guayule development; successful use of hitherto worthless Mexican bush. U. S. Bur. Manufactures. Monthly Consular and Trade Rpts., No. 311, p. 124. Aug. 1906. 157.7 C76
"Many sales of guayule on the ground have been reported at over five times the price at which the land itself was held at previous to this boom... No claim is made that the gum extracted...will ever take the place of rubber, but it can be made a substitute in many forms of manufacture."
Reprint in Internatl. Bur. Amer. Republics Monthly Bul. 23: 691-692. Sept. 1906. 150.9 M76

78. EDITORIAL [on rubber-producing trees and plants, with main emphasis on guayule]. Chim. & Indus. [Paris] 40(1): 1-2. July 1938. 383 C42
Partially translated in Automotive Indus. 79: 195. Aug. 13, 1938.

79. ELKIN, S. I. The cultivation of rubber-bearing plants. Kauchuk i Rezina 1939, No. 4-5, 7-10.
"The following rubber-bearing plants were found in the U. S. S. R.: tau-saghyz and kok-saghyz, chondrilla, krym-saghyz, teke-saghyz and the gutta-percha-bearing plant beresklet (Evonymus europaeus). Chinese euconiya and American guayule were also cultivated. Record yields were obtained in some cases from the leading rubber-bearing plant, kok-saghyz, while ordinarily its yield is not great. Cultivation of tau-saghyz and kok-saghyz is not extensive. Guayule is not cultivated on a large scale. A no. of measures for the improvement of cultures of rubber-bearing plants are recommended." - Abs. Chem. Abs. 34: 5697. 1940.

80. L'EMPLOI du guayule comme plastifiant. Caoutchouc et la Gutta-percha 22: 12713. June 15, 1925.
The use of guayule to give plasticity.

81. ENDLICH, RUDOLF. Guayule-kautschuk. Tropenpflanzer 7: 556-557. Nov. 1903. 26 T75
Letter to the editor, briefly describing the plant and early production activities in Mexico.

82. ENDLICH, RUDOLF. Der guayule und seine wirtschaftliche bedeutung. Tropenpflanzer 9: 233-247. May 1905. 26 T75
Gives description of the plant and methods of extraction. Dried plants bring from $30 to $40 a ton. The plant will grow on very poor and dry land and the crop can be worked up at any time during the year. In districts suited to its culture it is believed that the crop can be grown profitably, especially if culture and manufacture are combined.
Translation with title, "The 'guayule' rubber plant - I and II," appears in India Rubber World 32: 335-336, 367-369. July, Aug. 1905. 305.8 In2
Abs. in U. S. Off. Expt. Stas. Expt. Sta. Rec. 17: 257-258. Nov. 1905. 1 Ex6R
Review appears in Jour. d'Agr. Trop. 1: 368. Dec. 1905. 26 J82

83. ENDLICH, RUDOLF. Ueber den gegenwärtigen stand und die aussichten der guayuleindustrie. Tropenpflanzer 11: 449-465. July 1907. 26 T75
Gives description of plant, distinction between it and Parthenium incanum, companies operating in Mexico, extraction processes and the future of the industry.
Reviewed in Internatl. Bur. Amer. Republics Monthly Bul. 26(1): 44-47. Jan. 1908. 150.9 M76
Abs. by J. M. Hillier (see item No. 165).

84. EPHRAIM, F. Guayule rubber. Metall. and Chem. Engin. 17(2): 54. July 15, 1917. 381 E12
Letter to the editor. Writer claims to have operated at Torreon, Mex., in Nov. 1904, the first plant extracting rubber from guayule by mechanical means. He saw guayule plants successfully grown at Tucson, Ariz., on University of Arizona experimental plot about 1915.

85. ESCOBAR, RÓMULO. El guayule y su propagación. Ciudad Juarez, Mex., Estac. Agr. Expt. Bol. 25, 30 p. Mexico City, Secretaría de fomento, 1910. 102 C49
History, description, extraction, and reproduction.
Reviewed by F. E. Lloyd in Amer. Rev. Trop. Agr. 1: 251-256. Aug./Sept. 1910. 26 R322
Abs. in Chem. Abs. 5: 2189-2190. June 20, 1911. 381 Am33C

86. EXPANSION of guayule program forecast by rubber officials. Rubber Age 53: 537-538. Sept. 1943. 305.8 R82

87. THE EXTRACTION of guayule rubber. India Rubber World 59(2): 85. Nov. 1918. 305.8 In2
"The mechanical extraction of guayule rubber consists, briefly, in reducing the shrub to pulp and separating the rubber by flotation. The product is then deresinated, sheeted, and dried, ready for shipment to the rubber manufacturer."

88. EZEKIEL, W. N. Crown rot and root rot of guayule. U. S. Bur. Plant Indus. Plant Dis. Rptr. 27: 2-8, processed. Jan. 15, 1943. 1.9 P69P
Test plantings in southern Texas showed that crown rot causes more loss in 3-4 year old plants, and root rot attacks 1 year old plants more severely.

89. FARMER to find guayule culture profitable. Rubber Age 20: 344. Jan. 10, 1927. 305.8 R82

90. FEDEROV, S. M. Vrediteli kauchukonosnogo rasteniia-guaiiuly (Parthenium argentatum Gray). Soviet Subtrop. 2: 112-114. Mar./Apr. 1930. 20 Sul
Enumerates American insects not yet met with on Crimean plantations. However, a great many local insects are injurious to the plant, threatening underground parts as well as stems, leaves, and flowers.

91. FERGUSON, W. W. California may steal the rubber industry. Los Angeles Daily News, Oct. 22, 1941, p. 35.
"Fred S. McCargar, secretary of the Salinas Valley National Defense Committee, and C. A. Lee, Salinas farm manager of the Intercontinental Rubber Co...have installed in the Biltmore hotel an exhibit showing the present development of rubber manufacture from the guayule plant."
Gives description of plant, cultivation, and extraction.

92. FINLEY, H. M. What about this new rubber industry? Product accepted on commercial parity with that of tropics extracted from desert shrub now being successfully cultivated in California - guayule to have thorough trial in Southwest. Los Angeles Sunday Times, Farm and Orchard Mag., Nov. 27, 1927, p. 2, 6, 14.
Story of its cultivation. "Time alone will tell whether this American rubber industry is to take its place among the important agricultural developments of the country. Very rarely, it is certain, has any crop introduction ever been submitted to such an exhaustive advance investigation before being launched on a commercial basis."

93. FIRST rubber crop harvested in California. Pop. Mechanics Mag. 55: 728-729. May 1931. 291.8 P81
Guayule plantings started in Salinas Valley in 1926. In 1931 the care and cultivation of these shrubs was entirely mechanized.

94. FITZPATRICK, GEORGE. New Mexico can grow rubber. New Mex. 20(3): 17, 26-27. Mar. 1942. 288.8 N46
"New Mexico soil and climatic conditions are suitable to the growing of guayule, particularly the southern part of the state, and the state's congressional delegation has been assured of an allotment of seed for New Mexico from the Department of Agriculture."

95. FOMINA, E. Kara-Kala-raĭon budushchego (Kara-Kala - the region of the future). Turkmenovedenie 5(5/6): 9-12. May/June 1931. 20 T84
Description of climatic conditions of Kara-Kala and introduction of guayule into the region.

96. FOR MORE guayule. India Rubber World 105: 393. Jan. 1942. 305.8 In2
Senator Downey, on Dec. 22, 1941, introduced a bill calling for Department of Agriculture to plant 45,000 acres of guayule. William O'Neil, president of the General Tire & Rubber Co., urged government subsidy.

97. FORBIN, V. L'arbre a caoutchouc des déserts mexicains. Nature [Paris] No. 2448, p. 148-149. Mar. 5, 1921.
Gives description, history of the plant, and the extraction process.
Abs. in Internatl. Rev. Sci. and Pract. Agr. [Rome] 12: 852-853. July 1921. 241 In8

98. FOX, C. P. The discoverer of guayule. India Rubber World 39: 130. Jan. 1909. 305.8 In2
Letter to the editor telling of John Milton Bigelow's discovery of guayule, and Asa Gray's later description of it in 1859.

99. FOX, C. P. Excrement of guayule-fed animals. [Abstract] Science 33: 345. Mar. 3, 1911. 470 Sci2
"During time of drought goats feed upon the tender branches of the guayule, Parthenium argentatum. The leaves of this plant do not contain rubber, but there is a small amount present in the twigs. The solid excrement of the guayule foraging animals does not contain a trace of caoutchouc.
"Pingue (Colorado rubber weed) is regarded by stockmen as poisonous to sheep. In this case death is caused by clogging of the digestive organs with undigested rubber. Goats are not affected by guayule." - Entire abstract.

100. FOX, C. P. The manufacture of mechanical guayule. India Rubber Rev. 10(2): 52. Feb. 15, 1910.
Letter to the editor.

101. FOX, C. P. Tackiness in guayule rubber. India Rubber Jour. 39: 108-111. Jan. 24, 1910. 305.8 In21

102. FOX, C. P. Technical determination of caoutchouc in guayule. Jour. Indus. and Engin. Chem. 1: 735-736. Oct. 1909. 381 J825
Abs. in Chem. Abs. 3: 3012. Dec. 20, 1909. 381 Am33C

103. *FRANCIS, L. K. Guayule rubber. Los Angeles Times, Aug. 8, 12, 15, 1943.

104. FROLOV, T. Za korennoe izmenenie priemov kul'tury gvaĭiuly [For a radical change in the methods of guayule cultivation]. Sovet. Kauchuk. No. 2, p. 25-28. 1933.

105. FROLOV, T. V. Itogi osvoeniia gvaĭiuly v SSSR [Results of guayule cultivation in U. S. S. R.]. Soviet Subtrop. 1939, No. 2/3 (whole No. 54/55), p. 77-81. Feb./Mar. 1939. 20 Sul2
"Four varieties of guayule (Parthenium argentatum) are distinguished: Azerbeidzjanka, Karabakh, angustifolium population, angustifolium type 65. A botanical description of these four varities is given. The first two mentioned give the highest yield, 9-10 per cent. In dense plantations the frost resistance of the plants is higher." - Abs. Bibliog. of Trop. Agr. 1939, p. 368. 241 In8B

106. FROLOV, T. V. Osnovy agrotekhniki gvaĭiuly [Guayule cultivation in U. S. S. R.]. Soviet Subtrop. 1940, No. 4 (whole No. 68), p. 35-37. Apr. 1940. 20 Sul2

107. FRON, and FRANÇOIS. Le "guayule", plante a caoutchouc du Mexique. Agr. Prat. des Pays Chauds 1: 105-109. July/Aug. 1901. 26 Ag81
Botanical description.
Reprinted in New Caledonia. Chambre d'Agr. Rev. Agr., Sept. 1942, p. 4819-4824. 25 N43

108. Fuehr, I. C. Guayule rubber...is three years away; the government project in California indicates good commercial possibilities in a long range rubber program, but little immediate relief. Purchasing 13: 70-73. July 1942.
Favors a permanent guayule production program.

109. GÁNDARA, GUILLERMO. Estudio botánico del guayule. Mex. Dir. Gen. Agr. Bol. 3: 317-320. Apr. 1913.
Botanical study of guayule.

110. GENERAL notices respecting economic products and their development; the guayule rubber of Mexico. Gt. Brit. Imp. Inst. Bul. 4: 114-117. 1906. 26 G79
"A short account...of its characters and of the methods employed for obtaining the rubber."
Reprint in India Rubber Jour. (n.s.) 32: 249-250. Aug. 27, 1906. 305.8 In21

111. GENERAL TIRE AND RUBBER COMPANY. Guayule, the American source of rubber. 15 p. Akron, Ohio, 1942. 78 G
Culture and economics of guayule.

112. GLEASON, STERLING. We now grow our own rubber; Mexico's wild weed, guayule, raised on 5600 acres in California, yields precious latex. Pop. Sci. Monthly 119(1): 18-19, 120. July 1931. 470 P81
Describes the history of the plant, Dr. W. B. McCallum's research in cultivation, extraction, and the mechanization of the industry.
"If the deadly blight which is the scourge of the hevea tree should sweep through the tropical plantations as it has already done in Brazil, guayule rubber might avert a serious world-wide rubber famine."

113. GREEVES-CARPENTER, C. F. American-grown rubber. Compressed Air Mag. 43: 5601-5603. May 1938.
Includes description of the plant and of the Intercontinental Rubber Company's growing and processing operations.

114. *GROCE, G. C. Our native rubber. Central Manufacturing District Mag., Apr. 1943, p. 39-41.
Abs. in Chem. Abs. 37: 4927. Aug. 20, 1943. 381 Am33C

115. GRÜNFELD, OTTO. Altes und neues über kautschukpflanzen. Kautschuk 12: 171-174. Sept. 1936. 305.8 K16
The old and the new regarding rubber plants, including guayule.

116. GUAYULE. Agr. Mex. 59(7): 3-7. July 1943. 8 Ag8

117. GUAYULE. Chron. Bot. 7: 138. May 1942. 450 C46
Administrative personnel at Salinas, Calif., and cultural and manufacturing processes.

118. GUAYULE. Gummi Ztg. 24: 1340-1341. June 17, 1910. 305.8 G95
Article in German.
Brief history of development in Mexico.

119. GUAYULE. India Rubber Rev. 8(1): 13-14. Jan. 15, 1908.
"The botanical department of the University of Texas has demonstrated that the guayule shrub...is not an exclusively arid growth... The only question yet to be determined in the experiment...is whether the excess of rainfall causes it to lose any of its rubber-producing qualities."

120. GUAYULE. Rubber Age 20: 123. Nov. 10, 1926. 305.8 R82
Editorial on the future of the guayule industry through successful cultivation and volume production.

121. GUAYULE. Rubber Age 50: 286. Jan. 1942. 305.8 R82
Representative Anderson, California, introduced in the House on Jan. 6, 1942, a bill to provide for the planting of 75,000 acres of guayule, in contrast to his earlier bill calling for 45,000. William O'Neil, president of the General Tire and Rubber Company, is one of the leading advocates of guayule cultivation.

122. GUAYULE. Rubber Age 52: 55. Oct. 1942. 305.8 R82
Salinas, Calif., plantings; equipment and processing plant, milling, and seed collecting described. Proposed nurseries in San Diego and Riverside Counties. It is estimated that 208,000 acres will be under cultivation by spring of 1944.

123. LE GUAYULE. Soc. Belge d'Etudes Colon. Bul. 14: 437-441. May 1907. 26 Sol
History, description, and manufacture.

124. GUAYULE - a high grade rubber; botanical source - occurrence, yield and production - extraction and preparation - characteristics of guayule. India Rubber World 72: 652-653. Aug. 1925. 305.8 In2
"The plant...was discovered in northern Mexico in 1852 by Dr. J. M. Bigelow, and later described and named Parthenium argentatum by Professor Asa Gray of Harvard."
Discusses the effect of accelerators on guayule.

125. GUAYULE and a blowout in the desert; the farmers' income and the price of tires. Calif. Countryman 13(2): 17. Nov. 1926. 6 Un34
"The farmers of the State of California, it seems probable, will be growing rubber by the contract as they have grown beets in the past."
Discusses Intercontinental Rubber Company's work at Salinas.

126. GUAYULE and its possible growth for production of rubber in Texas. Com. Fert. 64: 14, 16, 18. Apr. 1942. 57.8 C73

127. GUAYULE as a rubber softener; a mix containing guayule will cure properly when small amounts of certain organic acids are added. Rubber Age 16: 266. Jan. 25, 1925. 305.8 R82

128. GUAYULE as a source of rubber. Chem. & Metall. Engin. 49: 151-153. Apr. 1942. 381 E12
Value of guayule rubber for tires; production and deresination costs.

129. GUAYULE compounded with synthetic and natural rubber. Sci. Amer. 167: 208. Nov. 1942. 470 Sci25
With the cooperation of the United States the capacity of a Mexican guayule production plant has been increased. Guayule is a useful addition in preparation of synthetic rubber, especially Buna S type.

130. GUAYULE cultivation in the United States, a rubber preparedness suggestion. India Rubber World 55: 133-135. Dec. 1916. 305.8 In2
"The long continued series of revolutions in Mexico reduced the average yearly export of 10,000 tons of guayule rubber to...1408 tons during the 12 months ending June 1916."

131. GUAYULE extraction mill; first factory in United States to process new American farm product starts work on West Coast. India Rubber World 83(6): 53-55. Mar. 1931. 305.8 In2
Intercontinental Rubber Company's subsidiary, American Rubber Producers, Inc., formally opened $150,000 plant near Salinas, Calif., on Feb. 6, 1931. Article tells how rubber is washed and caked, how crops are developed, and what the present and potential uses of the rubber are.

132. THE GUAYULE factories of Mexico. India Rubber World 34: 329-330. July 1906. 305.8 In2
Gives illustrations of Continental's Torreon plant, output of Mexican guayule industry, and uses of the rubber.

133. GUAYULE has insect enemies. Jour. Forestry 40: 529. July 1942. 99.8 F768
Issued without title in Science 96: sup. 10, July 17, 1942; in Sci. News Letter 42: 56, July 25, 1942 under title "Guayule in Mexico is attacked by beetle."
Bark beetle in Mexico feeds on harvested shrubs.

134. GUAYULE in the United States. India Rubber World 39(2): 58. Nov. 1908. 305.8 In2
Big Bend Manufacturing Co., Texas, acquired right to utilize guayule plants on State school lands. Texas Rubber Company formed.
Article gives Asa Gray's description of the shrub in 1859.

135. GUAYULE industry, its origin and development. Pan-Amer. Mag. 33: 225-227. Oct. 1921. 110 P19
Gives history of the industry, description of plant, and prices and Mexican exports around 1910 to 1920.

136. GUAYULE interests. India Rubber World 36: 332. Aug. 1907. 305.8 In2
Includes operations of producing companies and statement about, and picture of Dr. Adolpho Marx, associated with the guayule company, L'Anglo Mexicana.

137. DER GUAYULE-KAUTSCHUK. Gummi Ztg. 21: 416-417. Jan. 25, 1907. 305.8 G95
Discusses the Mexican producing companies and the qualities of the rubber.

138. EL GUAYULE, planta silvestre que podría ser nueva fuente de riqueza. Rev. de Agr. [Costa Rica] 13: 437, 439-440. Sept. 1941. 8 Es1
Guayule, the wild plant that may become a new source of wealth. Translated by Emilio Artavia from Everybody's Weekly, Phila.
On the history of the guayule plant, experiments made in the United States for growing and domesticating it, and its characteristics.

139. LA GUAYULE, plante à caoutchouc; sa mise en culture aux États-Unis. Génie Civil 97(4): 87-89. July 26, 1930. 290.8 G29
Consists mainly of excerpts of botanical information from M. W. Russell's "Le guayule..." and D. Spence's "Cultivation and preparation of rubber in the U. S." (See items Nos. 335 and 352.)

140. GUAYULE planting; new sowing and transfer of seedlings from nurseries to open fields get under way as program receives presidential signature. Business Week, No. 654, p. 16-17. Mar. 14, 1942. 280.8 Sy8
About the plantations at Salinas, Calif.

141. GUAYULE production in Mexico: pictorial presentation. Rubber Age 51: 491-493. Sept. 1942. 305.8 R82
Continental-Mexican Rubber Co. at Torreon, Mexico, and Cia Hulera de Parras at Parras, Mexico. Processing methods.

142. GUAYULE rubber. Kew Roy. Bot. Gard. Bul. Misc. Inform. No. 6, p. 211-212. 1910. 451 K51B
Seeds were received at Kew Gardens in London and the bulk of them distributed to sub-tropical colonies. The balance was germinated at Kew.
Article includes dispatch from Mexican Minister showing guayule industry to be thriving there.

143. GUAYULE rubber farms aided by new machinery. Business Week, No. 80, p. 24. Mar. 18, 1931. 280.8 Sy8

144. GUAYULE - rubber from within our borders. Pacific Purchasor 23(3): 14-15. Mar. 1941.
What guayule is; how manufactured; costs.

145. GUAYULE rubber growing in California. Timberman 43(6): 10-12, 42. Apr. 1942. 99.81 T484

146. GUAYULE rubber has commercial utility comparable with plantation crepe. Bureau of Standards tests show potentialities of rubber from Mexican shrub. Tensile properties found to equal those of crepe rubber. Method found to prevent deterioration of guayule rubber. India Rubber & Tire Rev. 27(11): 26, 46. Nov. 1927. 305.8 In2

147. THE GUAYULE rubber interest. India Rubber World 38: 250. May 1908. 305.8 In2
Encouraging experiments of Elias Delafond, Mexico City, in cultivation of guayule.

148. GUAYULE rubber may help solve tire difficulty. Henderson asks prices be not raised above December 6 level. Coop. Consumer 8(24): 7. Dec. 31, 1941. 280.28 C7836

149. THE "GUAYULE" rubber plant - III. India Rubber World 33(1): 3-4. Oct. 1905. 305.8 In2
Continental Rubber Company will build factory at Torreon, Mexico, controlling extraction processes patented by W. A. Lawrence. Article gives description of latter and discusses operations of Coahuila Mining and Smelting Co., Ltd., and the International Guayule Rubber Co.
Parts I and II of this article are a translation of Endlich, Rudolf: Der guayule...(see item No. 82).

150. GUAYULE rubber production project launched. India Rubber World 106: 47-48. Apr. 1942. 305.8 In2
Administration of government's program. Senate bill 2282 quoted. Excerpts in Com. & Financ. Chron. 155: 1062. Mar. 12, 1942. (286.8 C73); Jour. Forestry 40: 337-339. Apr. 1942. 99.8 F762

151. GUAYULE rubber production resumed; Border Rubber Co. [at Marathon, Tex.] producing a ton a day from guayule shrubs; plant operating as subsidiary of C. T. Wilson Co. of New York. India Rubber & Tire Rev. 25(10): 78. Oct. 1925. 305.8 In23

152. THE GUAYULE rubber project; at Salinas, California, foresters are making great strides in the growing of a much heralded rubber plant. Amer. Forests 48: 347-349, 380. Aug. 1942. 99.8 F762

153. GUAYULE rubber recovery; improved method of separating guayule from its natural fiber entanglement. India Rubber World 79(5): 64. Feb. 1929. 305.8 In2
Yeandle process.

154. THE GUAYULE rubber situation. India Rubber World 38: 395-396. Sept. 1908. 305.8 In2
"It may seem singular to some that, whereas business depression has prevailed in Mexico during a year past, the same as elsewhere, the output of guayule rubber continues to grow."

155. GUAYULE, sein verwendung und verarbeitung. Gummi Ztg. 24: 856-857. Mar. 18, 1910. 305.8 G95
Guayule, its use and manufacture.

156. EL GUAYULE; un nuevo cultivo de grandes beneficios. Campesino [Santiago, Chile] 74: 472-475. Aug. 1942. 9.3 So12
Discusses the guayule plant and the efforts being made to develop its cultivation, the method of obtaining the rubber from the plant, and the uses to which guayule rubber may be put. Notes that Chile has an extensive area which might be devoted to the plant.

157. GUAYULE'S rebound. Newsweek 19(23): 63-65. June 8, 1942. 280.8 Ne
A short sketch of the development of guayule commercially.

158. GUGLIELMINETTI, SILVIO. Il guayule, pianta da caucciù coltivabile in Italia e colonie. Costa Azzurra Agr. e Floreale 16(2): 32-40; (3): 59-66. Feb.-Mar. 1936. 16 C82
The cultivation of the guayule plant in Italy and her colonies.
History, varieties, diseases and parasites, rubber content, extraction, and culture in America and Russia.
Abs. in Bot. Centbl. 171: 399. Aug. 26, 1937. (450 B65); Also printed as San Remo, Italy. Staz. Sper. di Floricoltura "Orazio Raimondo, Pub. 10, 18 p. San Remo, 1936. 86 Sa5

159. HAMM, T. C. Guayule industry. U. S. Bur. Manufactures. Daily Consular & Trade Rpts. 15: 742-743. Aug. 10, 1912. 157.7 C76D
"The growth of the guayule rubber industry in the states of Durango and Coahuila has been truly remarkable... The plant occurs only in the wild state; several attempts have been made to propagate and cultivate it, but they all have been more or less unsuccessful."

160. HARRIES, C. Zur kenntnis der kautschukarten. Deut. Chem. Gesell. Ber. 36: 1937-1941. June 20, 1903. 384 B45
Information on kinds of rubber, including guayule.
Abs. in Chem. Zentbl. 74, bd. 2: 201-202. July 15, 1903. 384 C42

161. HARVESTING American-grown rubber in California. Sci. Amer. 152: 116. Mar. 1935. 470 Sci25
Photograph, with explanatory remarks as follows: "Guayule, a domesticated wild desert shrub which yields 15 to 19 percent rubber, is harvested at Salinas, California, by a subsidiary of the Intercontinental Rubber Company, which employs tractors for drawing diggers that uproot the plants. After drying in the sun these plants are picked up by another tractor-drawn machine...which feeds them into a cutter, chops them into pieces and blows these pieces through the arched conduit shown, into a trailing truck. At the mill the chopped plants are fed through rotating tube mills containing flint pebbles. This releases the rubber."

162. HAUSER, E. A. Home-grown and home-made rubber. India Rubber World 104(6): 27-29. Sept. 1941. 305.8 In2
Discusses hevea, reclaimed, synthetic, and guayule rubber. "Guayule rubber could be successfully grown in this country, resulting in a rubber which can be handled without any change in our present processing methods."
Reprint in India Rubber Jour. 102(17): 9-11. Oct. 25, 1941.

163. HAUSER, E. A., and LE BEAU, D. S. Studies in compounding guayule rubber. India Rubber World 106: 447-449; 107: 568-570; 108: 37-39, 44. Aug. 1942, Mar., Apr. 1943. 305.8 In2
Part I based on data taken from M. S. thesis of H. M. Zimmerman at Massachusetts Institute of Technology in 1942 and from results obtained by R. M. Haden of the Continental Mexican Rubber Co. during his short visit at M. I. T. in May 1942. Hevea compounding methods do not give best results for guayule; methods especially adapted to guayule produce a product as good as Hevea.
Part II based on data from B. S. thesis of E. H. Stewart, Jr., at Massachusetts Institute of Technology in 1943. The poor tensile properties of guayule compound not caused by guayule rubber hydrocarbon, but by resin left in guayule. More efficient resin extraction methods needed to eliminate injurious effects of guayule resin.
Part III based on data taken from B. S. thesis of William G. Louden at Massachusetts Institute of Technology in 1943. Of the different solvents used, furfural was found to be most efficient for removal of resin from guayule.

164. *HEALEY, FLOYD. Story behind guayule rubber. San Francisco Chronicle, Aug. 8-10, 1943.

165. HILLIER, J. M. Guayule rubber (Parthenium argentatum, A. Gray). Kew Roy. Bot. Gard. Bul. Misc. Inform. No. 7, p. 285-294. 1907. 451 K51B
Composite article, containing the first communication received at Kew on the subject of guayule for information regarding an extract from Circular No. 28 issued by the United States Department of Agriculture (item No. 60); Max Müller's report (see item No. 266); Memorandum from British Vice-Consul Kennedy in Mexico; Article by Dr. P. Olsson-Seffer reprinted from "The Mexican Investor"; Abstract of Rudolf Endlich's "Ueber den gegenwärtigen stand und die aussichten der guayuleindustrie" (see item No. 83).
Partially reprinted in India Rubber Jour. (n.s.) 34: 305. Sept. 9, 1907. 305.8 In21

166. HOLMAN, R. L. Rubber from the farm. Nation 156: 520-521. Apr. 10, 1943. 110 N
Discusses various sources of rubber, including guayule.

167. HOLMAN, R. L. America's rubber farms: the guayule shrub, as rubbery as the tropical rubber plant, is being grown right here in California; it may lead us to the path of self-sufficiency. Forbes 48(9): 12-13, 32. Nov. 1, 1941.
"While Dr. McCallum has tested it in four states, many authorities believe that it can be successfully produced anywhere in the South where cotton will grow well."

168. HOLT, E. G. Guayule rubber. U. S. Bur. Foreign and Dom. Com. Rubber Div. Spec. Cir. 1270, 3 p., processed. Washington, 1926.
"Chihuahua, the northern part of Zacatecas and San Luis Potosi, the eastern part of Durango, and the southern districts of Coahuila are the most important guayule districts in Mexico." Discusses growth and decline of Mexican industry, domestication of the shrub in the United States, and guayule production, including table of estimated production in Mexico for each year, 1905-1925.

169. HOLT, E. G. Mexico an important source of guayule rubber. U. S. Bur. Foreign and Dom. Com. Dom. Com. 29(2): 15. Jan. 8, 1942. 157.54 D713
Includes table giving pounds, value, and cost per pound of U. S. imports from Mexico, by years from 1929 to 1940.

170. HOME-GROWN rubber. Lit. Digest 89(4): 25. Apr. 24, 1926. 110 L
Includes letter from U. S. Dept. of Agriculture in regard to commercial guayule operations in Texas and experimental work in California and Arizona.

171. HORNADAY, W. D. Guayule shrub as a source of crude rubber supply. Dun's Internatl. Rev. 51: 39-41, 64. Aug. 1928.
"Commercializing the guayule shrub as a source of crude rubber supply may within the next few years become an industry of vast importance in many semi-arid regions of the world, according to experts who have studied the possibilities of domesticating the wild plants."

172. HOYMAN, W. G. Preliminary evidence suggests guayule may be resistant to the root knot nematode. U. S. Bur. Plant Indus. Plant Dis. Rptr. 26: 476, processed. Dec. 1, 1942. 1.9 P69P
Based on 1941 experiments in Pima County, Arizona.

173. HUTCHINSON, J. Parthenium argentatum A.Gray. Hookers Icones Plantarum, Ser. 4, v. 10, tabula 2998, 3 p. 1913. 450 H76I
Botanical description.

174. INTERCONTINENTAL RUBBER COMPANY. Report to stockholders concerning the Intercontinental Rubber Company, its property and business. 28 p. New York, Continental Rubber Co. of N. Y., 1926.
"Intercontinental Rubber Co. is a holding and operating company engaged, through its subsidiaries, in the production of plantation rubber in Sumatra and of guayule rubber in Mexico and the United States... The subsidiary companies...are (1) Continental Plantation Company [Sumatra]...(2) Continental Mexican Rubber Co. and Cedros Ranch Co. The first named owns and operates four factories in Mexico for the production of guayule rubber, and the latter owns about 1,800,000 acres of land in Mexico, from which a portion of the guayule shrub... is obtained...(3) Agricultural Products Corporation and Rubber Exploration Co., which own a ranch in Arizona and a number of scattered small

areas in California. On these properties experimentation and development work have been conducted over a period of years...Under present methods a given amount of guayule rubber can be produced with only one-fifteenth of the labor required for a corresponding quantity of plantation rubber. With the resin extracted from the guayule product, the ratio would still be 12 to 1 in its favor. This advantage is sufficient to offset the much lower wages paid to laborers in the plantation areas... Company expects gradually to increase its commercial operations and...the first commercial planting of 200 acres in California is under way, and seeds are being started for an additional 600 acres of plants to be set out next winter. (4) Continental Rubber Co. of New York, which sells and handles the output of guayule rubber."

"Guayule rubber [Habitat, production and use, operations of company's plants, Dr. W. B. McCallum's experiments on cultivation in the U. S.]," p. 13-28.

175. IVANOW, SERGIUS. Einiges über das studium der kautschukhaltigen pflanzen und des kautschuks der U. d. S. S. R. Kautschuk 6: 237-239, 256-258. Nov.-Dec. 1930.
Notes on the study of rubber-bearing plants and rubber in the U.S.S.R., including guayule.

176. JANUARY tire quota is 357,000; only "essential" vehicles to get consideration; government speeding output of synthetic, guayule, wild rubber. Automotive News 17(2701): 1, 8. Jan. 5, 1942.

177. JARDINE, W. M. Rubber, a crop with possibilities. Nation's Business 19(1): 27-30, 110, 112. Jan. 1931. 286.8 N212
Guayule, p. 30, 110.
"A large share of the developments in guayule seed selection, germination, production, and mechanical and chemical problems in extraction, have been achieved by a single commercial company... However, the U. S. Dept. of Agriculture has by no means been idle. The Department's experimental field of guayule at Shafter, Cal., is making remarkable progress."

178. KALASHNIKOV, V. M. K biologii tsveteniia Parthenium argentatum Gray. Trudy Prikl. Bot., Genet., i Selek. (Bul. Appl. Bot., Genet., and Plant Breeding) 24: 85-98. 1930. 451 R92
A contribution to the biology of flowering in Parthenium argentatum Gray.

179. KALASHNIKOV, V. M. Materialy k metodike selektsii gvaiuly (Parthenium argentatum Gray). Trudy Prikl. Bot., Genet., i Selek. (Bul. Appl. Bot., Genet., and Plant Breeding) 27: 489-560. 1931. 451 R92
A contribution to the methodics of breeding the guayule (Parthenium argentatum Gray).

180. KAUFFMAN, ERLE. Guayule, the victory rubber. Amer. Forests 48: 72-73, 84, 92. Feb. 1942. 99.8 F762
Senate Committee on Military Affairs reported favorably on S. 2152, the bill to provide for planting of 45,000 acres of guayule. Similar bill, H. R. 6299, was introduced in the House. "Guayule cannot be expected to perform the miracle of relieving the present rubber emergency. It is a practicable and reasonably efficient but limited source of rubber. It produces a product acceptable to rubber manufacturers

and usable without alteration of manufacturing machinery. It can be grown, harvested, and processed at costs not unreasonably high, but substantially higher than the costs of producing rubber from the Para rubber tree in the American tropics. Its present value lies in the fact that it can be harvested and processed from four to five years after field planting, a considerably shorter cycle than the Para tree."

181. KAVKA, B., and ZELNÍCEK, A. Výsledky pokosů s pestováním kaucukodárné rostliny Parthenium argentatum Gray v letech 1932-1935. (Ergebnisse von anbauversuchen der kautschukliefernden pflanze Parthenium argentatum Gray in den jahren 1932-1935.) Ceskoslov. Akad. Zemedel. Vest. 12: 475-480. June/July 1936. Ref., p. 479-480. 19.5 C332
Results of experiments on the cultivation of the rubber-bearing plant Parthenium argentatum Gray in the years 1932-1935.

182. KELLEY, E. W. Letter about guayule from Major Kelley. The Family Tree [Lewiston, Idaho] 6(6): 1-3. Mar. 1942.
Quantity of lumber used for duck boards, posts, barracks at Salinas, Calif., guayule plantations. Seed germination for planting.

183. KHEEL, A. S. About guayule rubber. U. S. Bur. Agr. Econ. Agr. Situation 26: 21-23. May 1942. 1 Ec7Ag
Plantations at Salinas, Calif.; prices; future possibilities as a peacetime crop.

184. KIEFFER, D. L. Guayule, our own wartime rubber crop. Pacific Rural Press and Calif. Farmer 14(7): 276. Apr. 5, 1941. 6 P112
"How about using farm land and farmers instead of crude oil, factories and scarce and expensive industrial labor or foreign plantations to make the rubber we need in order to feel safe?...If the government would subsidize the growers of guayule by guaranteeing them a price of 25¢ per pound...they could dodge the overproduced crops."

185. KING, A. H. Guayule and industrial preparedness. Metall. and Chem. Engin. 15(10): 563-566. Nov. 15, 1916. 381 E12
Shows need for home rubber industry in war times and gives description of shrub and processes of extraction. "Since 1912 guayule has been comparatively unimportant. This decline was brought about by internal conditions in Mexico and by wasteful methods of harvesting."
Abs. in Chem. Abs. 11(3): 307. Feb. 10, 1917. 381 Am33C

186. KIRCHHOF, F. Die rolle des kautschukkohlenwasserstoffes in der pflanze. Kautschuk 12(3): 45-48. Mar. 1936. 305.8 K16
Experiments with cortical tissue of guayule, p. 47.

187. KIRKWOOD, J. E. The growing of guayule in relation to the soil. Amer. Rev. Trop. Agr. 1: 142-158. May/June 1910. 26 R322
"Guayule...grows most abundantly on the foothills or lower slopes of the mountains, where the soil is of limestone origin."

188. KIRKWOOD, J. E. Guayule rubber industry. Sci. Amer. 101(2): 24, 26. July 10, 1909. 470 Sci25
Discusses extraction processes, history of the industry, and supply of guayule.
"The only hope of prolonging the business seems to be in so harvesting the plants that the roots are left in the ground; from these new shoots will arise, and in a few years possibly yield another crop worth the taking. How long this process can be kept up profitably is at present unkown."

189. KIRKWOOD, J. E. The life history of Parthenium (guayule). Amer. Rev. Trop. Agr. 1: 193-205. July 1910. Ref., p. 203-204. 26 R322

190. KIRKWOOD, J. E. Propagation of guayule by seeds. Amer. Rev. Trop. Agr. 1(2): 34-43; (3/4): 77-84. Feb., Mar./Apr. 1910. 26 R322

Describes work done by Dept. of Investigations of Continental Mexican Rubber Co. in the State of Zacatecas, Mexico.

"Seeding operations...results were disappointing so far as the feasibility from an economic standpoint was concerned, but the facts discovered will doubtless be of interest to the botanist, the manufacturer, and to those who are attempting to propagate the plant."

Abs. in U. S. Off. Expt. Stas. Expt. Sta. Rec. 23: 543-544. Nov. 1910. 1 Ex6R

191. KOKIEVA, E. Istoriia razvitiia muzhskogo gametofita u Parthenium argentatum Gray (Guayule) i Parthenium hysterophorus L. [History of the development of the male gametophyte in Parthenium argentatum Gray (Guayule and Parthenium hysterophorus L.]. Assotsiatsii nauchno-issledovatel'skikh institutov pri fiz.-mat. fak 1 MGU. Izv. 2: 145-166. 1929. Libr. Cong.

German summary, p. 165-166.

192. KOKIEVA, E. Istoriia raz'itiia zhenskogo u Parthenium argentatum G. ("guayule"). Jour. Bot. de l'URSS 17(1): 72-99. 1932. Ref., p. 95-97. 51 R923

English summary. The development of the female gametophyte in Parthenium argentatum G. (guayule).

Abs. in Bot. Centbl. 166(5/6): 138. Mar. 5, 1934. 450 B65

193. KOKIEVA, E. Morfologiia i istoriia razvitiia sotsvetii Parthenium argentatum G. (gvaiiuly) i Parthenium hysterophorus L. Moskov. Obshch. Isp. Prirody, Otd. Biol. Biul. (Soc. Nat. de Moscou, Sect. Biol. Bul.) (n. s.) 40: 207-236, 275-383. 1931. Ref., p. 234. 511 M85

English summary. Morphology and development of the inflorescences of Parthenium argentatum G. (guayule) and of Parthenium hysterophorus L.

Abs. in Biol. Abs. 8: 766. Mar. 1934. 442.8 B526

194. KOLACHOV, P. J. American rubber from American farms. Natl. Farm Chemurg. Council [Papers] No. 124, 14 p., processed. Columbus, Ohio, 1941? Ref., p. 13-14. 381 N213P

Description, rubber content, history, and cultivation of guayule, p. 10-13.

Abs. (sections on kok-sagyz rubber only) in India Rubber World 105: 368. Jan. 1942. 305.8 In2

195. KOPECNY, JOSEF. Urcování kaucuku v nasich rostlinách. Ceskoslov. Akad. Zemedel. Vest. 12(1/2): 65-66. 1936. 19.5 C332

The determination of rubber in plants, mainly guayule.

Abs. in Chem. Zentbl. 107(15, pt. 1): 3227. Apr. 8, 1936. 384 C42

196. KOVALENKO, V. Kul'tura gvaiiuly [Cultivation of guayule]. Sovet. Kauchuk, No. 5, p. 24-26. Sept./Oct. 1933.

197. KOZAK, M. P. Semennaia produktivnost' i ee kharakteristika u raznykh form guaiiuly (Parthenium argentatum Gray). Trudy Prkl. Bot., Genet., i Selek. Ser. A. Sotsialist. Rastenievod. (Bul. Appl. Bot., Genet., and Plant Breeding. Ser. A. Plant Indus. U. S. S. R.) No. 5/6, p. 125-135. 1933. 451 R92S

Characteristics of seed productivity in different forms of guayule (P. argentatum).

Abs. in Biol. Abs. 9: 871. Apr. 1935. 442.8 B526

198. KRAFT, D. Kompleksnaia pererabotka kauchukonosov [Complete utilization of rubber-bearing plants]. Sovet. Kauchuk, No. 4, p. 44. July/Aug. 1935.

Includes guayule.

199. *KRASHENINNIKOV, N. A., and AGEEV, L. A. Frost resistance of guayule and agricultural problems connected with resistance. Soviet Subtrop. 1939, No. 12, p. 26-

"The extent of frost resistance depends mainly on time of irrigation. If summer irrigation only is adopted, a very high degree of resistance is obtained; irrigation in autumn and at the beginning of winter appears to have the opposite effect." - Abs. Bibliog. of Trop. Agr., 1939, p. 368. 241 In8B

200. KRASHENINNIKOV, N. A., and AGEEV, L. A. K vyrashchivaniiu rassady gvaĭiuly v polivnom pitomnike [Growing guayule seedlings in irrigated nursery beds]. Soviet Subtrop. 1940, No. 4 (whole No. 68), p. 38-41. Apr. 1940. 20 Sul2

201. KUPTSOV, A. I. Pervye selektsionnye sorta gvaĭiuly. Soviet Subtrop. No. 7, p. 35-43. July 1937. 20 Sul2

The first selected varieties of guayule.

202. KUSNETSOVA, M. S. Die kautschuk-ansammlung bei Parthenium argentum (?) im ersten vegetationsjahr. Bot. Centbl. 165: 326. Oct. 12, 1933. 450 B65

Rubber accumulation in Parthenium argentatum in the first year of vegetation.

Abs. from original appearing in Trudy n.-i. Laborat. Kautschuktrust 4: 18-26. 1930. (Not examined.)

203. KUZ'MIN, S. Stimuliatsiia protsessa prorostaniia semian i vliianie udobrenii na razvitie molodykh seiantsev gvaĭiuly [Stimulation of seed germination and the effect of fertilizers on the development of the (young) seedlings of guayule]. Sovet. Kauchuk No. 3, p. 23-32. May/June 1934.

204. L., M. P. Le guayule. Nature [Paris], No. 2770, p. 296-300. Oct. 1, 1927.

Discusses the history, wild state, botany, production and location of rubber in the shrub; acclimatization in intensive cultivation and selecting varieties; mechanical cultivation and possibility of cultivation in Morocco (with map).

Reprint in Rev. Gén. Caoutchouc 5: 33-36. Jan. 1928.

205. LABROY, O. Le caoutchouc de guayule. État présent de l'exploitation du guayule au Mexique - Caractères végétatifs de la plante - Parthenium argentatum et P. incanum - Rendement en caoutchouc - Sociétés d'exploitation - Procédés d'extraction - Chiffres de production et d'exportation - Valeur commerciale du guayule - Culture. Jour. d'Agr. Trop. 8: 259-265. Sept. 30, 1907. 26 J82

Translated title: Guayule rubber. Present state of guayule cultivation in Mexico - Vegetative characteristics of the plant - Parthenium argentatum and P. incanum - Yield in rubber - Manufacturing companies - Extraction processes - Production and export statistics - Commercial value of guayule - Cultivation.

206. LABROY, O. La situation du guayule - Declín de l'industrie - Pénurie des matières premières - Essais culturaux: semis et greffage - Opinion d'un horticulteur. Jour. d'Agr. Trop. 8: 232-234. Aug. 31, 1908. 26 J82

Translated title: The guayule situation - The industry's decline - Scarcity of raw materials - Cultivation tests: seedings and cuttings - Opinion of a horticulturist.

207. LAPIN, A. K. Prirodnye resursy SSSR; kauchukonosy i guttaperchenosy SSSR. Priroda 1936: 110-123. July 1936. 410 P933
Rubber-bearing and guttapercha-bearing plants of Russia. Guayule, p. 120-121.

208. LEBEDEV, A. N. Agrotekhnika zakladki plantatsii gvaĭiuly. Soviet Subtrop., No. 2, p. 31-40. Feb. 1937. 20 Sul2
The agrotechnical methods of guayule growing.

209. LEBEDEV, A. N. Gvaĭiula v pitomnike. Soviet Subtrop., No. 2, p. 26-34, 122. Feb. 1938. 20 Sul2
English summary. Growing guayule seedlings.
Increased rubber and resin yields were obtained by enriching soil with superphosphate containing 180 kg. of P_2O_5 per hectare.
Abs. in Chem. Abs. 33: 8346-8347. Oct. 20, 1939. 381 Am33C

210. LEGROS, J. Secondary rubber-yielding plants of the Caucasus region and of Central Asia. Internatl. Rev. Agr. Econ. [Rome] 28: 468T-481T. Dec. 1937. 241 In82
Contents: (1) Secondary group, (2) Solidago, (3) Guayule, [p. 473T-477T] (4) Eucommia, (5) Tau-saghiz. Part 3 discusses varieties, seed production, yield in rubber, methods of cultivation, diseases and insect pests.
Reprint in India Rubber Jour. 95: 295-296, 298-300, 322-323. Mar. 5, 12, 1938. 305.8 In21
Abs. in Chem. Abs. 32: 8185. Oct. 20, 1938. 381 Am33C; Brit. Chem. Physiol. Abs. B. Appl. Chem., May 1938, p. 555. 382 B773

211. LEO, A. DE. Osservazioni preliminari sul "guaiule" come pianta da caucciù. Palermo R. Ist. Bot. Lavori 10, app. p. 78-91. 1939. 451 P17L
Cultivation tests were carried out with seed of Russian and United States origin. Average quantity of rubber received did not exceed 2% for the Russian and 3.75% for the U. S. type, compared with 7-10% yield in the United States.
Abs. in Chem. Abs. 34: 6973. Oct. 20, 1940. 381 Am33C

212. LLOYD, F. E. Guayule (Parthenium argentatum Gray) a rubber-plant of the Chihuahuan Desert. Carnegie Inst. Wash. Pub. 139, 213 p. Washington, D. C., 1911. Ref., p. 211-213. 77 L775
Contents: Ch. 1. Historical account; Ch. 2. The environment; Ch. 3. Description of the guayule; Ch. 4. Reproduction; Ch. 5. Anatomy and histology; Ch. 6. The resin-canals in the guayule; Ch. 7. The origin and occurrence of rubber; Ch. 8. Vegetative reproduction; Ch. 9. The cultivation of guayule.
"First discovered by J. M. Bigelow, M. D., in 1852, while attached to the Mexican Boundary Survey, 'near Escondido Creek, Texas.' It was first described by Professor Asa Gray some years later...1859...
"Public attention was drawn to guayule rubber, apparently for the first time in 1876, by an exhibition sent from Durango to the Centennial Exposition at Philadelphia... In the same year, according to the Mexican Herald, the Natural History Society of Mexico took up the study of the plant."
Abridgment appears in Pop. Sci. Monthly 81: 313-330. Oct. 1912. 470 P81
Abs. in India Rubber World 45(1): 20-21. Oct. 1911. 305.8 In2; Pan Amer. Union Bul. 34: 177-195. Feb. 1912. 150.9 M76; Science (n.s.) 34:

765-767. Dec. 1, 1911 [By J. E. Kirkwood]. 470 Sci2; Chem. Abs. 6: 501. Feb. 20, 1912. 381 Am33C
Review in India Rubber Jour. 42: 797-799. Sept. 16, 1911. 305.8 In21

213. LLOYD, F. E. The guayule rubber situation. India Rubber World 41: 115-118. Jan. 1910. 305.8 In2
Gives history and description of the plant and describes how the rubber is contained, the factory processes, the extent and future of the industry, and reproduction.

214. LLOYD, F. E. Manufacture of rubber from the guayule plant. N. Y. Bot. Gard. Jour. 12: 96-97. May 1911. 451 N48J
Description of nine specimens received at the New York Botanical Garden, showing the processes of manufacture.

215. LLOYD, F. E. Methods of vegetative reproduction in guayule and mariola. Plant World 11: 201-208. Sept. 1908. 450 P69
By seedlings and root-shoots ("retonyos").

216. LLOYD, F. E. The Mexican guayule and its product. Internatl. Rubber Conf., 1st, London, Lectures on India-rubber...Proc. 1908: 126-141. 1909. Ref., p. 140.
Gives botanical description and describes germination, the root-shoots, and the place of the rubber in the plant.

217. LLOYD, F. E. Mode of occurrence of caoutchouc in the guayule, Parthenium argentatum Gray, and its function. Plant Physiol. 7: 131-138. Jan. 1932. Ref., p. 137. 450 P692
"The account which I published in 1911 (see item No. 212) of the mode of occurrence of caoutchouc in guayule...is incorrect... The purpose of the present paper is to set the matter right, so far as I now understand it. In the guayule, as in some other rubber-bearing plants, the rubber occurs in the parenchyma cells and is thus segregated. In contrast with this condition is that in the so-called latex-bearing rubber plants, such as Hevea...in which the rubber is a constituent...of a white or colored milky fluid, which is stored in tubes from which, when opened, the fluid flows more or less freely... This general statement may now be extended to the guayule, for...the fluid here is equally a latex confined to individual cells."
Abs. in Biol. Abs. 7: 1553. Aug./Sept. 1933. 442.8 B526

218. LLOYD, F. E. Notes on the acclimatization and cultivation of the guayule (Parthenium argentatum Gray). In Internatl. Rubber Cong., 4th, London, 1914. The rubber industry, being the official report of the fourth International Rubber Congress...[and] the principal papers read at the [3d] Rubber Congress, New York, [1912], p. 384-389. London, International rubber and allied trades exhibition, ltd., 1914?
Describes experimental plantings in irrigated areas and naturally wet climates, showing that water-supply must be controlled. An abundance of water lessens the rubber content.
Reprint in India Rubber World 48: 563-566. Aug. 1913. 305.8 In2
Correction in 49(1): 20. Oct. 1, 1913.

219. LLOYD, F. E. The propagation of guayule - a criticism. India Rubber World 45: 164-165. Jan. 1912. 305.8 In2
Comparison of propagation by seed and by cuttings.

220. LLOYD, F. E. The response of the guayule, Parthenium argentatum, to irrigation. [Abstract.] Science (n. s.) 31: 434-435. Mar. 18, 1910. 470 Sci2
Study of plants under irrigation at Cedros, Mexico, touching on rate of growth, anatomical changes, and amount of rubber secretion.
Abs. in U. S. Off. Expt. Stas. Expt. Sta. Rec. 23: 130. Aug. 1910. 1 Ex6R

221. LLOYD, F. E. The rubber and resin content of the desert rubber-plant "guayule" in relation to rainfall. Soc. Chem. Indus. Jour. 33: 107-109. Feb. 16, 1914. 382 M31
Plants that receive abundant soil-water produce less rubber, but the amount of resin seems unaffected.
Abs. in Chem. Abs. 8: 1678. May 10, 1914. 381 Am33C

222. LLOYD, F. E. Some features of the anatomy of guayule (Parthenium argentatum Gray). Plant World 11: 172-179. Aug. 1908. 450 P69
"The purpose of this present writing is to give a summary in English of Dr. Ross' contribution (see item No. 320) to our knowledge of the plant...and in addition to record in brief form the views of the writer."

223. LONDON international rubber exhibition, [June 24-July 14, 1911]. India Rubber Rev. 11: 405-418. Aug. 15, 1911.
Description and illustration of the Continental Rubber Company of New York's guayule exhibit, p. 408-409.

224. LUDEWIG, H. J. Die kautschukkultur in Mexiko. Tropenpflanzer 14: 510-521. Oct. 1910. 26 T75
"A general and statistical account of the rubber industry in Mexico, including outline of propagation experiments with guayule rubber being conducted by E. A. Caffey at the Los Cedros plantation." - U. S. Off. Expt. Stas., Expt. Sta. Rec. 24: 43. Jan. 1911. 1 Ex6R
Summary, with title: Cultura du caoutchouc au Mexique, in La Quinzaine 5: 461. July 10, 1911. 26 Q4

225. MCCALLUM, W. B. The botany and cultural problems of guayule. Indus. and Engin. Chem. 18: 1121-1124. Nov. 1926. 381 J825
Discusses botanical considerations; characteristics of guayule shrub; rubber content; resin content; cultivation problems; germination of seeds; large-scale production of seedlings; maintenance of high rubber content.
Reprint in Rubber Age 20: 129-132. Nov. 10, 1926. 305.8 R82
Abs. in Chem. Abs. 20: 3841. Nov. 20, 1926. 381 Am33C

226. MCCALLUM, W. B. The cultivation of guayule. India Rubber World 105: 33-36, 153-156. Oct., Nov. 1941. 305.8 In2
Includes a historical account, general characteristics, problems of domestication, germination of seeds, production of plants for transplanting, production of high rubber content, problems of guayule growing in the United States.
"When considering the amount of land available in the United States on which guayule will grow well, it does not seem an impossible task, or even an essentially difficult one, to produce within our own borders 25% of our normal rubber needs. This would require, in general terms, 1,000,000 acres of land, 200,000 of which would be harvested and replanted each year... During a period of about ten years there have been established and maintained a series of 53 experimental stations

of from one acre to five acres each, extending from southern Texas across to California, and up the coast region and the San Joaquin and Sacramento valleys to Red Bluff. These stations...were dispensed with only after the final results from each had been obtained. Thus...it is known fairly accurately just what guayule will do in the various regions. The greatest amount of available land is in southern Texas." Abs. of material in Oct. issue in Chem. Abs. 35: 8013. Nov. 20, 1941. 381 Am33C

227. MCCALLUM, W. B. The genetic analysis of guayule (Parthenium argentatum) under cultivation. Carnegie Inst. Wash. Yearbook (1915) 14: 98-99. 500 C21
"All attempts at cross-pollination between different varieties have thus far given no results."

228. MCCALLUM, W. J. The physiological function of rubber in the guayule plant. 38 p., typewritten. Stanford University, Calif., 1936.
Thesis (M. A.) - Stanford University.

229. MACDOUGAL, D. T. Can we grow our own rubber? Guayule, a native American rubber-producing shrub, is being cultivated on a large scale in California. Sci. Amer. 139: 16-19. July 1928. 470 Sci25
Discusses importance of rubber to the United States, Intercontinental Rubber Company's successful introduction of guayule, and cultivation and processing of the plant.
"It is of interest to know that 40,000 farmers and mechanics employed in guayule cultivation could meet the [rubber] need of the United States during the next 10 or 15 years."
See also item No. 7, which is a sequel to this article.

230. MACDOUGAL, D. T. Domestication in a decade. The story of guayule, America's native rubber-producing shrub, and how it has speedily been brought into cultivation from the wild. N. Y. Bot. Gard. Jour. 43: 165-168. July 1942. 451 N48J

231. MACKŮ, JAN. Bude guayule československým kaučukem? Ceskoslov. Zemědělec 16: 296-297. June 22, 1934. 19.5 C33
The possibility of guayule becoming a Czechoslovakian rubber.

232. MACKŮ, JAN. Kultury Parthenium argentatum A. G. (guayule) v SSSR a výsledky pokusů v botanicke zahradě Masarykovy university v Brně v roce 1936. Casové Otásky Zemedel. Agr. Topics, No. 62, p. 6-9. June 1937. 19.5 C27
The cultivation of Parthenium argentatum A. G. (guayule) in Russia and resulting tests in the Botanical gardens of Masaryk University, Brno [Czechoslovakia], in 1936.

233. THE MADERO guayule factories. India Rubber World 39: 136. Jan. 1909. 305.8 In2
Discusses the interests of the Madero brothers in Mexico and gives a picture of their Compania Explotadora Coahuilense factory at Parras.

234. MAKAGON, V. N. Kauchukonosy v subtropikakh. Soviet Subtropics, No. 3, p. 44-48. Mar. 1935. 20 Sul2
Rubber producing plants in the subtropics, including guayule.

235. MAKSIMOV, N. A., KUZ'MIN, S. P., and IVANOVA, V. I. Materialy k fiziologicheskoĭ kharakteristike guaiiuly. Trudy Prikl. Bot., Genet., i Selek. (Bul. Appl. Bot., Genet. and Plant Breeding) 24: 99-145. 1930. 451 R92
Physiological characteristics of guayule.

236. MALLORY, L. D. Mexican rubber supplies, a background report from L. D. Mallory, agricultural attache, Economic Section, American Embassy, Mexico, D. F. Date of completion: December 29, 1941. 14 p., processed. Mexico? D. F., 1941.
Discussion of guayule exports and production, p. 6-7; tables giving exports of guayule rubber [quantity and value, by years 1935-1940, and by months, Sept. 1939-Aug. 1941], p. 14.

237. MANNING, P. D. V. Metallurgical methods used in producing [guayule] rubber. Chem. & Metall. Engin. 38: 131-132. Mar. 1931. 381 E12
Description of agricultural and processing machinery used in growing guayule and producing rubber from it. Shows similarity of machinery to standard ore-treating machinery.
Partially reprinted in Sci. Amer. 147: 111. Aug. 1932 (470 Sci25), under title "Factory makes home-grown rubber," by A. E. Buchanan.

238. MARCKWALD, E., and FRANK, F. Ein beitrag zur wertschätzung des guayrule (?)-kautschuks. Gummi Ztg. 18: 650-652. May 6, 1904. 305.8 G95
Gives uses to which guayule rubber has been put by German manufacturers.

239. *MARSHUTZ, H. S. Rubber from the desert. Geog. Mag. 16: 256-264. Sept. 1943.

240. MARTÍNEZ, MAXIMINO. El guayule. 35 p. Tacubaya, D. F., Mex., Imprenta de la Direccion de estudios geograficos y climatologicos, 1926. Ref., p. 33-34. 78 M36
History, description, geographic distribution, soils and climates where it is produced; its enemies, how guayule is developed, production, propagation.
Abs. in Biol. Abs. 1: 1176. Nov./Dec. 1927. 442.8 B526

241. MARTÍNEZ, MAXIMINO. Los recursos forestales en las regiones del secano de México; informe sintético del viaje de exploración que hizo el Sr. Prof. Maximino Martínez; acompañado a la Comisión Rusa en su expedición por el norte del país. Mex. Forest 4(1/2): 1-10. Jan./Feb. 1926. 99.8 M57
Translated title: Forestal resources in the desert regions of Mexico; report on the exploratory trip that Prof. Maximino Martínez made, accompanying the Russian Commission on its expedition through the northern part of the country.
Guayule discussed, p. 10; illustrated, p. 3, 6-9.

242. MARZARI, A. H. El guayule. Buenos Aires, Argentina. Bolsa de Cereales. Rev. 30(1544): 22, 24; (1545): 19-20. Apr. 25, May 2, 1942. 287 B866
Brings out the importance of rubber in the present world situation, the need of finding new sources of rubber, and Argentina's consideration of guayule cultivation, and extraction of rubber. States in conclusion that in normal times, the guayule would have difficulty in competing with Hevea rubber, because the extraction process increases cost of production.

243. MASHTAKOV, S. M. Gvaiiuly. Kauchuk i Rezina, No. 9, p. 36-40. Sept. 1939.
Vicosimetric characteristics of rubber and physical-chemical constants of the resin of different forms and sorts of guayule.
Abs. in Chem. Abs. 34: 1514. Mar. 10, 1940. 381 Am33C; Chem. Zentbl. 111: 1760. Mar. 13, 1940. 384 C42

244. THE MEXICAN guayule; interest revives in this rubber producing plant of the prairies. Amer. Chamber Com. of Mex. Jour. 5(38): 3-6. Apr. 1923.
"Torreon, Gomez Palacio, Saltillo, Viesca and Cuatro Cienegas the principal centers of guayule production; how the plant is gathered and the rubber produced; its principal uses; the industry promises large profits; government encouragement is needed and is suggested."

245. THE MEXICAN guayule; the cultivation of this shrub rubber in Mexico continues with government encouragement. Amer. Chamber Com. of Mex. Jour. 6(50): 8-11. Apr. 1924.
"How the guayule grows on the plains of Mexico and is milled for the market; the cost of production and the price; machinery being used to plant and gather the shrub; report of the U. S. Department of Commerce upon the industry."

246. MEXICAN substitute for rubber. India Rubber World 22: 286. July 1900. 305.8 In2
Rubber factory established at San Luis Potosi, Mexico, apparently based on Prampolini patent. "This composition is a substitute for India-rubber, and consists of gummy matter of the shrub called Synantherceas Mexicanas by botanists, and by the Indians, 'yule,' copalin,' and 'jiguhite.'"
(See item No. 165 for identification of substitute as guayule.)

247. MEXICANSCHE guayule-rubber. De Indische Mercuur [Amsterdam] 53: 1156-1157. Dec. 31, 1930. 286.8 In2

248. MEXICO. DIRECCIÓN DE GEOGRAFÍA, METEOROLOGÍA E HIDROLOGÍA. Estudios climatólogicos; areas geográficas de dispersión, Parthenium argentatum, Hevea brasiliensis, Castilloa elastica. 112 p. México, D.F., Secretaría de agricultura y fomento, Dirección de geografía, meteorología e hidrología, 1942. 78 M57

249. MICHAELS, A. S. The temperamental guayule plant - one solution to a vital problem. Tech. Engin. News, Mar. 1942, p. 31-32.

250. MIKHAILOV, N. M. Gvaĭiula v raĭonakh sukhikh subtropikov Sredneĭ Azii. Soviet Subtropics, No. 10, p. 55-61. Oct. 1935. Ref., p. 61. 20 Sul2
Guayule in the arid subtropical regions of Central Asia.

251. MIL'NER, E. M. Kauchukonosy i guttaperchenosy SSSR [Rubber and gutta percha yielding plants in the U. S. S. R.]. Soviet Subtrop. No. 8 (whole No. 60), p. 34-41. Aug. 1939. 20 Sul2
"Details are given on the following crops: Kok-saghyz (Taraxacum kok-saghyz), a rubber-yielding plant from central Asia; Guayule (Parthenium argentatum) from Mexico." - Abs. Bibliog. of Trop. Agr. 1939, p. 369. (241 In8B)

252. MINDERMAN, EARL. Guayule as domestic rubber source. Prog. Farmer, Tex. Ed. 57(2): 39. Feb. 1942. 6 T311
"One company, greatly interested in guayule, has spent more than a million dollars in an attempt to raise it scientifically on plantations in California, but its cost has remained too high - over 20 cents a pound - to compete with imported rubber. Still, encouraging progress has been made."

253. M-M-M, RUBBER! Time 41(10): 18. Mar. 8, 1943. 280.8 T
Salinas, Calif., mill turns out six tons of rubber daily.

254. MOLDENKE, H. N. New sources of rubber. Amer. Mus. Nat. Hist. Nat. Hist. 52: 226-232. Dec. 1943. 500 N483J
Includes guayule.

255. MOLINA, CECILIA. El hule y el guayule como su substituto. Mex. Sec. de Relaciones Exteriores. Rev. del Com. Exterior, Mar. 5, 1942, p. 29-32; Mar. 20, 1942, p. 15-21. 286.8 M575

256. MOORE, C. B. Guayule rubber; long fight brought to end by Jeffers decision. West. Grower & Shipper 14(5): 13-14. Apr. 1943. 280.38 W52
Hopes there will be no more attempts to use essential California food lands for guayule production.

257. MOORE, C. B. Guayule; why take productive land when marginal areas can be used to advantage? West. Grower & Shipper 14(4): 13-14. Mar. 1943. 280.38 W52

258. MORPURGO, GIULIO. Los succedaneos de la goma elastica y el guayule de Mexico. (Monografía publicada con motivo de la inauguración del primer muestrario de productos de México en Trieste, 1908)... Tr. por el profesor Mario Calvino. 11 p. Mexico, Impr. y fototipia de la Secretaria de fomento, 1910. 77 M823
Rubber substitutes and the guayule of Mexico.

259. MORRIS, R. E., JAMES, R. R., and WERKENTHIN, T. A. Compounding of guayule rubbers; effect of accelerator-curing agent combinations. India Rubber World 105: 565-569. Mar. 1942. 305.8 In2
Three guayule rubbers of different resin content were tested. Compared favorably with Hevea smoked sheet. Each should be compounded with process most suitable for purpose in mind.

260. MORRIS, R. E., JAMES, R. R., and WERKENTHIN, T. A. The compounding of guayule rubbers; effect of accelerator-curing agent combinations on the resistance to sunlight. India Rubber World 107: 31-32. Oct. 1942. 305.8 In2
Mexican guayule containing 26 percent resin had poor resistance to sunlight; domestic guayule containing 16 percent resin had poorer sunlight resistance than deresinated rubber (6 percent resin content).

261. MORRIS, R. E., and others. The compounding of guayule rubbers; effect of various factors on physical properties. India Rubber World 107: 463-467. Feb. 1943. 305.8 In2
R. R. James, E. B. Caldwell, and T. A. Werkenthin, joint authors.
Deresinated guayule rubber compounded same as Hevea with 75 percent of tensile strength of Hevea. Guayule can be processed and cured as Hevea without affecting quality any more than in Hevea.

262. MORRIS, R. E., and others. The effects of blending guayule with GR-S. India Rubber World 109: 150-152, 192, 252-257. Nov.-Dec. 1943. 305.8 In2
A. E. Barrett, W. B. Lew, and T. A. Werkenthin, joint authors.

263. MORRIS, R. E., and others. Guayule rubbers in wire and cable insulation. Rubber Age 51: 479-481. Sept. 1942. 305.8 R82
F. J. Gorman, T. A. Werkenthin, and J. B. Lunsford, joint authors.
Domestic deresinated and resiniferous, and Mexican resiniferous stocks tested with Hevea smoked sheet. Guayule rubber has possibilities as a substitute. Softness and tackiness of Mexican rubber make it unsuitable for insulation; guayule better than synthetics for insulation, except Butyl rubber.

264. *MOSHKINA, M. S. Localization of essential oil and resins in guayule. Biokhim. i Fiziol. Kauchukonosnykh rastenii 1939, No. 2, p. 108-121.

265. MOSHKINA, M. S. Strukturnye osobennosti gvaĭiuly kak kauchukonosa. Akad. Nauk. S. S. S. R. Izv., Ser. Biol. (Acad. des Sci. U. R. S. S. Bul., Ser. Biol.) No. 4, p. 614-620. 1940. Ref., p. 619. 511 Sa2B
Discusses the structural peculiarities of guayule.
Abs. in Chem. Abs. 35: 2931. May 10, 1941. 381 Am33C

266. MÜLLER, MAX. [Guayule rubber industry of Mexico.] Kew Roy. Bot. Gard. Bul. Misc. Inform. No. 7, p. 286-289. 1907. 451 K51B
Tells of discovery of the plant, processes of extraction and patents, qualities of the rubber compared with hevea.
Reprinted, with slight omissions, in Gt. Brit. Bd. Trade Jour. 56: 632-634. Mar. 28, 1907. 256.03 T67J; India Rubber Jour. (n. s.) 33: 496. May 6, 1907. 305.8 In21

267. NEBOVIDSKY, HENRY. Le problème de la culture des plantes à caoutchouc vu sous le jour des expériences acquises en U. R. S. S. Cong. Internatl. Tech. et Chim. des Indus. Agr., 5th, Shéveningue, 1937. Compt. Rend. 3: 84-90. 1938. 388 C765
The problem of the cultivation of rubber plants seen in the light of experiences acquired in the U. S. S. R.
Guayule, p. 87-88.
Abs. in Chem. Zentbl. 111, pt. 1: 1113. Feb. 14, 1940. 384 C42

268. NEW GUAYULE factory opened at Salinas [Calif.]. Rubber Age 28: 508. Feb. 25, 1931. 305.8 R82
Plant opened by Intercontinental Rubber Company's subsidiary, American Rubber Producers, Inc., on Feb. 6, 1931. "First time...that cultivated guayule has been harvested and milled on any commercial scale."

269. NEW GUAYULE rubber process. India Rubber World 32: 304. June 1905. 305.8 In2
Compañia Explotadora de Hulé formed in Mexico, to use Delafond extraction process. Article describes the process, also the one patented by Max Marx in England.

270. THE NEW Mexican rubber. India Rubber World 24: 264. June 1901. 305.8 In2
Quotations from report by U. S. consul at Matamoras, Mex., P. Merill Griffith, on the plant known locally as "hule," and called "Synantheroeas Mexicanas" in the Prampolini patent for rubber extraction. "This plant has not yet been identified botanically by any of the India Rubber World's correspondents... The plant...no doubt is the same which Mr. John H. Cheever, of the New York Belting and Packing Co., experimented with some twelve years ago." (See item No. 165 for identification of plant as guayule.)

271. A NEW substitute for rubber. Sci. Amer. 82: 309-310. May 19, 1900. 470 Sci25
"A shrub growing in central Mexico, and known to the Indians by a variety of names of which yule is one... It does not belong to the plants which yield milky juices, being a comparatively hard wood and growing as a small scrubby bush, but there is found within its bark and wood a large amount of gummy matter... The botanical name of this shrub is Synathereoeas - Mexicanas."
Article describes the method of extraction.
(See items Nos. 60 and 165 for identification of shrub as guayule.)

272. *NICHIPOROVICH, A. A. Guayule, a rubber producing plant of the Soviet Subtropics. Soviet Subtrop. 1933, No. 2, p. 52-56.

273. NIKOLAEV, V. F. K morfologii i sistematike kauchukonosnogo rasteniia guaiûly. Trudy Prikl. Bot., Genet., i Selek. (Bul. Appl. Bot., Genet., and Plant Breeding) 22: 209-276. 1929. 451 R92
Morphology and classification of the guayule plant.
Abs. in Bot. Centbl. 160: 478. June 18, 1931. 450 B65; Biol. Abs. 7: 1704. Aug./Sept. 1933. 442.8 B526

274. NIKOLAEV, V. F. Kul'tura kauchukonosnykh rastenii na Chernomorskom poberezh'e. [Leningrad] Gosud. Inst. Opytn. Agron. Izv. (State Inst. Expt. Agron. Ann.) 5: 469-471. Nov./Dec. 1927. 106 R923
Cultivation of the rubber-bearing plants on the Black Sea shore, including guayule.
Abs. in U. S. Off. Expt. Stas. Expt. Sta. Rec. 60: 444. Apr. 1929. 1 Ex6R

275. NIKOLAEV, V. F. The singling out of botanical forms and selection in the rubber plant, guayule (Parthenium argentatum Gray). [Translated title.] Vsesoiûzn. S'ezd Genet., Selek., Semen. i Plemenn. Zhivotn. Trudy (U. S. S. R. Cong. Genet., Plant & Anim. Breeding Proc.) (1930) 4: 243-250. 442.9 V96

276. NOTES on sundry subjects. Prospects for guayule rubber. India Rubber Jour. (n. s.) 33: 183. Feb. 25, 1907. 305.8 In2l
Compania Explotodora de Caucho Mexicana has improved guayule, overcoming large percentage of resin and ash, presence of other impurities, and its intense smell.

277. OLSSON-SEFFER, PEHR. Rubber planting in Mexico and Central America. Straits Settlements. Bot. Gard. Agr. Bul. of the Straits and Fed. Malay States (n. s.) 6(1): 1-31. Jan. 1907. 22.5 St8
Guayule rubber, p. 29-31.
"As for the fear of guayule filling the market to the exclusion of crude rubber...such an idea is hardly worth refuting... The quality... is very inferior, the rubber being very sticky and rapidly deteriorating. The market value is very low in comparison with...first class rubber... As a special product, the guayule has a market of its own."

278. THE ONE region where wild guayule is found. Rubber Age 20(3): 126, map. Nov. 10, 1926. 305.8 R82
Names and locations of producing companies are shown on map.

279. O'NEIL, WILLIAM. Guayule "rubber" as an emergency crop; suggested provision in the U. S. A. for "time of war." India Rubber Jour. 69: 378. Mar. 7, 1925. 305.8 In2l
Editor's comment, p. 369.

280. O'NEIL backs guayule. Tire Rev. 41(11): 42. Nov. 1941. 305.8 In23
William O'Neil, president of General Tire and Rubber Co., urged congressional action to underwrite guayule in the Southwest. Information from California convinced him that in two years there can be sufficient production for the country. Guayule can be processed without change of machinery. Yield has been stated to be as high as 2,850 pounds per acre, with a cost of 15-19 cents a pound.

281. ORDYNSKII, M. S. Uzlovye voprosy mekhanizatsii kauchukonosnykh kul'tur. Mechanisierung der Sozialistischen Landw., No. 5, p. 16-24; No. 8, p. 14-18. May, Aug. 1932. 58.8 M46
May issue is mostly on tau-sagyza, with slight mention of guayule; August issue, mainly on guayule.

282. OUR RUBBER problem; what rubber resources remain open to us; what has the RFC done to build up rubber stocks; what can be done to stretch our rubber supply? U. S. Bur. of Foreign and Dom. Com. Foreign Com. Weekly 6(3): 7, 33-34. Jan. 17, 1942. 157.54 F763
One paragraph on guayule.

283. PARDUCCI, MARIO. Il problema della gomma elastica; le piante secondarie. Ingegnere 11: 504-516. Nov. 1937; 13, i. e. 12: 2-7. Jan. 1938. Ref., p. 7.
Guayule, p. 506-511.
Abs. in Engin. Index, 1938, p. 1059. 290.8 En32Ib

284. PARKER, W. E.: The present status of guayule. India Rubber World 45: 165-166. Jan. 1912. 305.8 In2
Discusses regrowth of the shrub and future yields.

285. PATONI, CARLOS. Algunos datos sobre el guayule...urgencia de su cultivo. Alianza Cient. Univ. Com. Region. del Estado de Durango (Mex.) Bol. 3: 193-209. Oct. 31, 1912. 516 A14
Discusses the name and history, rubber yield, need for cultivation, and type of cultivation which suits guayule.

286. PATONI, CARLOS. El guayule (Parthenium agrentatum A. Gray), 70 p. Mexico, Departamento de Talleres graficos de la Secretaria de fomento, 1916. 78 P27
Describes the plant and discusses its history, geographic distribution, quantity of rubber, harvesting, extraction, reproduction, cultivation, and irrigation.

287. PEARSON, H. C. A journey through guayule land. India Rubber World 35: 176-177; 36: 205-210. Mar., Apr. 1907. 305.8 In2
Describes discovery and development, botany, where the plant grows, the available supply, reproduction and cultivation, extraction, the patent question, guayule in the rubber factory.
Summary of the article by A. Masselon with title: Voyage au pays du Guayule, appears in Quinzaine Coloniale 2: 930-931. Nov. 10, 1907. 26 Q4
Abs. in U. S. Off. Expt. Stas. Expt. Sta. Rec. 19: 653. Mar. 1908. 1 Ex6R

288. PEARSON, H. C. Production of guayule rubber. U. S. Bur Foreign and Dom. Com. Rpts. No. 149, p. 1172-1184. June 26, 1918. 157.7 C76D
Describes Parthenium argentatum, P. incanum, and P. Lloydii, and discusses development of the extraction process, origin of the name, rubber content, habitat and parasitic enemies, gathering and transporting, price of shrub and cost of extracted rubber, supply, regrowth in wild areas, extracting processes, characteristics of the rubber, prices, statistics of production, and cultivation.
Reprint in Mex. Rev. 2(10/11): 32-34, 41-43; (12/13): 31-32. July/Aug.-Sept./Oct. 1918. (With some additional material on cultivation.)
Reprint, except last two paragraphs, in Mex. Com. and Indus. 12(8): 9-15. Aug. 1930. 287 Am3Mj
Partially reprinted in India Rubber World 58: 579-581, with editor's comment, p. 577. July 1918. 305.8 In2; Internatl. Rev. Sci. and Pract. Agr. (Rome) 10: 288-293. Mar. 1919. 241 In8; Pan Amer. Union Bul. 47(1): 88-95. July 1918. 150.9 M76; India Rubber Jour. 57: 164. Jan. 25, 1919. 305.8 In21. More fully reprinted in India Rubber World 59: 244-246. Feb. 1919; 59: 289-291. Mar. 1919; 60: 347-348. Apr. 1919. 305.8 In2. Abs. in Chem. Abs. 13: 800. Apr. 10, 1919. 381 Am33C

289. PERSPECTIVAS industriales: hule. Rev. de Econ. [Mexico] 5(3): 8-10. Mar. 20, 1942. 280.8 R3293
Discusses the rubber industry and the possibilities of growing guayule in Mexico.

290. PICKETT, J. E. Guayule gets going. Pacific Rural Press and Calif. Farmer 143: 326. May 16, 1942. 6 P112
Plantations at Salinas, Calif.; seeding and harvesting methods.

291. PINCUS, J. W. The USSR grows its own rubber; the Soviet Union is taking vigorous measures to find substitutes for one of its few deficit raw materials. Soviet Russia Today 10(2): 14-15, 34. June 1941.
Two new and improved varieties of guayule developed: Parthenium latifolium and P. augustofolium.
Reprint in Rubber Age 49: 179-181. June 1941. 305.8 R82

292. A PIONEER in the guayule field. India Rubber World 36: 372. Sept. 1907. 305.8 In2
Biographical sketch of Felix Hermann Hunicke, retired U. S. naval officer, who stumbled onto guayule in Mexico, devised a crude extraction process, and later developed the large Continental-Mexican Rubber Co.

293. PISAREV, V. E. Selektsiia i priemy kul'tury guaiiuly. Trudy Prikl. Bot., Genet., i Selek. (Bul. Appl. Bot., Genet., and Plant Breeding) 24(3): 3-84. 1930. Ref., p. 80-82. 451 R92
Breeding and methods of cultivation of the guayule.
Abs. in Biol. Abs. 11: 1555. June/July 1937. 442.8 B526

294. PISAREV, V. E. Ueber die methodik der züchtung der kautschukliefernden pflanze "guayule." Ztschr. f. Zücht. Reihe A, Pflanzenzüchtung 17: 583-621. July 1932. Ref., p. 618-621. 450 Z36
Method of breeding guayule in Russia.
Abs. in Biol. Abs. 8: 190. Jan. 1934. 442.8 B526

295. PISAREV, V. E. Voprosy selektsii guaiiuly v Soiuze SSR. Soviet Subtrop. 2(3/4): 33-50. Mar./Apr. 1930. 20 Sul
Describes breeding experiments in the dry subtropical regions of Russia - Turkomania and Azerbaijan.

296. PLANTING completed in guayule rubber plan. Com. & Financ. Chron. 155: 2310. June 18, 1942. 286.8 C73
Nursery planting of 21,000 lbs. of seed at Salinas, Calif. Field plantings given also.

297. POLETIKA, W. VON. Kautschussliefernde pflanzen in Russland. Forschungsdienst 3: 200-207. 1937. 241 D48F
Includes guayule and discusses results of research on vegetative propagation of the plant.

298. POLHAMUS, L. G. Guayule as an emergency source of crude rubber. 4 p., processed. Washington, U. S. Bureau of plant industry, 1941.
"Guayule cultivation has been proved possible, and only economic considerations have prevented its development on a commercial scale in the United States... For long-term supplies, at costs which are competitive with those for rubber produced anywhere in the world, the Department of Agriculture believes that the development of Hevea rubber culture in tropical America is the answer."

299. POTENTIAL insect enemies of guayule. Rubber Age 51: 482. Sept. 1942. 305.8 R82
Bark beetle attacking stacked guayule in Mexico has not entered the United States, but other insects may attack plantings as acreage expands.

300. POTENTIALITIES of guayule rubber from Mexico. U. S. Bur. Foreign and Dom. Com. Rubber News Letter 14: 162-164. Sept. 15, 1940.
Table and text, giving statistics on Mexican production, 1905 to date, and possibilities of exhaustive exploitation of present wild guayule stand in Mexico.

301. PRESLEY, J. T. Some diseases affecting cultivated guayule in the Southwest during 1942. U. S. Bur. Plant Indus. Plant Dis. Rptr. 27: 94-96, processed. Feb. 15/Mar. 1, 1943. 1.9 P69P
Various fungus diseases attack both nursery and field plantings.

302. PROCESS of guayule extraction. Internatl. Bur. Amer. Republics Bul. 27: 394-395. Aug. 1908. 150.9 M76
Information furnished to United States consul at Matamoras, Mex., Clarence A. Miller, by a chemist of Monterey.

303. PRODUTOS estratégicos: o guaiule. Fazenda 37: 66. Feb. 1942. 6 H11 Port. Ed.

304. PROGRESS report on the guayule rubber project. Jour. Forestry 40: 656-657. Aug. 1942. 99.8 F768
1942 nursery and field plantings at Salinas, Calif.

305. PROKOF'EV, A. Raspredelenie kauchuka v kauchukonosakh [Distribution of rubber in rubber bearing plants]. Sovet. Kauchuk. No. 1, p. 19-23. Jan./Feb. 1935. Libr. Cong.
Guayule, p. 22.

306. PROKOF'EV, A. A. Biologicheskaia rol' kauchuka [Biological role of caoutchouc]. Akad. Nauk, Leningrad. Izvestiia. Otdelenie Matematicheskikh i Estestvenykh Nauk. Seriia Biologicheskaia, No. 4, p. 589-607. 1940. 511 Sa2B
Terpenes are not defensive or protective, nor a source of carbon, but they are a byproduct of metabolism. In Parthenium rubber accumulation increase is accompanied by lignification of tissues. When water supply is decreased in guayule there is a predominance of synthesis of rubber over that of terpene-a-pinene, which shows that rubber production rises with aridity.

307. THE PROPAGATION of guayule. India Rubber World 45: 70-71. Nov. 1911. 305.8 In2
Describes experiments at Central Agricultural Station, San Jacinto, Mexico, in propagating guayule by cuttings, which is said to be much more certain than propagating by seeds.

308. PROVOROV, V. Ekstraktsiia rastvoriteliami kauchuka iz kauchukonosov [Extraction of the rubber from rubber-bearing plants by means of solvents]. Sovet. Kauchuk. No. 3, p. 26-34. May/June 1935. Libr. Cong.
Guayule, p. 29.

309. RAPID progress of guayule project. India Rubber World 106: 150. May 1942. 305.8 In2
Cultural operations at Salinas, Calif., early in 1942.

310. RAPID progress reported in guayule rubber production project; planting now under way. U. S. Off. for Emergency Managt. Victory 3(15): 28. Apr. 14, 1942. 173.3 C83D
Extent of Salinas, Calif., plantations, equipment, and labor force.

311. REEVES, RAYMOND. Guayule rubber project expanding rapidly. U. S. Bur. Foreign and Dom. Com. Dom. Com. 29(23): 21-22, processed. June 4, 1942. 157.54 D713
General notes on Salinas, Calif., plantations and equipment, and brief statement on Mexican production.

312. REEVES, RAYMOND. Rubber from American lettuce fields; a promising source of supply. U. S. Bur. Foreign and Dom. Com. Dom. Com. 29(2): 12-14. Jan. 8, 1942. 157.54 D713
"Here is a timely story of how American ingenuity and persistence is developing a domestic source of rubber. In the modern sense, the development is new. Long before Cortez entered Mexico, however, natives were producing gaming balls from rubber which they chewed from guayule."

313. REKO, V. A. Guayule, der mexikanische kautschukbaum. Pharm. Post. 70: 332-339. July 17, 1937. 396.8 P493
Description, range, including list of 8 existing species of Parthenium in Mexico, cultivation, manufacture of the rubber, and guayule industry in Mexico, including a list of the guayule plantations.

314. REVISED guayule bill provides for planting in Western Hemisphere. Rubber Age 50: 455. Mar. 1942. 305.8 R82
Brief comment on legislation followed by description of Salinas, Calif., plantings and test plots in California, Arizona, Texas, New Mexico. Wm. O'Neil, president, General Tire and Rubber Co., advocates one year harvest plan as against four-year plan of U. S. Department of Agriculture.

315. *REYNOLDS, L. B. Guayule rubber. Wall St. Jour., West. Ed., Jan. 28, 29, Feb. 1, 1943.

316. RINGLE, RUTH. Rubber from western weeds. Survey Graphic 31(2): 74-78. Feb. 1942. 280.8 C37G
"The story of guayule, a tough desert shrub adapted to American soil and climate. Authorities say it can meet our rubber needs in a few years and that guayule rubber is cheaper than synthetic rubber."

317. RINGUELET, ANDRES. El guayule en Mejico. Agronomía [Buenos Aires] 31(1): 39-47. Oct. 1942. 9 Ag864

318. ROLDAN, ANGEL. Nuevos datos acerca del cultivo del guayule (Parthenium argentatum) en Tehuacán, Puebla. Mex. Forest. 5(1/2): 12-14. Jan./Feb. 1927. 99.8 M57
Cultivation of guayule (Parthenium argentatum) in Tehuacán, Puebla, Mexico.
Abs. in Biol. Abs. 2: 261. Jan./Feb. 1928. 442.8 B526

319. ROMAGNOLI, MARIO. Sull'opportunità di riprendere ed estendere la sperimentazione sul guayule nelle nostre colonie. Agr. Colon. [Italy] 29: 330-353. June/July 1935. Ref., p. 352-353. 26 Ag82
Content, especially resin, of plants cultivated in Eritrea, with complete culture data.
Abs. in Chem. Abs. 29: 7120. Oct. 20, 1935. 381 Am33C

320. ROSS, H. Der anatomische bau der mexikanischen kautschukpflanze "guayule," Parthenium argentatum Gray. Deut. Bot. Gesell. Ber. 26a: 248-263. Apr. 23, 1908. 451 D48
Anatomical structure of guayule.
Summary in English by Alfred Dominikus in India Rubber World 38: 365. Aug. 1908. 305.8 In2
(See also item No. 222)

321. ROWNTREE, LESTER. Desert rubber. Los Angeles Times Sunday Mag., - May 9, 1943.

322. ROWNTREE, LESTER. Rubber from American weeds. Flower Grower 29: 316-317. July 1942. 80 M72

323. ROZIN, I. Gvauila v SSSR [Guayule in U. S. S. R.]. Sovet. Kauchuk. 1: 27-28. Jan. 1932. Libr. Cong.

324. RUBBER cultivation pushed in Congress. Oil, Paint, and Drug Rptr. 141(8): 5, 42. Feb. 23, 1942. 306.8 Oi5
Brief statement on provisions of bill authorizing planting of guayule and other rubber bearing plants, followed by a list of over 70 plants containing rubber.

325. *RUBBER from guayule. Congress Speaks 1: 1-4. Feb. 1942.

326. RUBBER from guayule. Engineer 174: 504-506. Dec. 18, 1942.
History and development of guayule plantations in California. Cultural procedures and manufacturing processes in use at Salinas, Calif., are described.

327. RUBBER from the guayule shrub. Automobilist 27: 4. Jan. 1943.

328. RUBBER grown commercially in the United States; guayule production in Texas. India Rubber World 73(1): 7. Oct. 1925. 305.8 In2
"The only place in the United States where rubber is produced commercially, is at Marathon, Texas, located...north of the big bend of the Rio Grande...Factory of the Border Rubber Co."

329. *RUBBER Manufacturers Association, Inc. Summary of data on guayule. 21 p., processed. June 1, 1942.

330. RUBBER on bushes; experiments with guayule in California prompt drive for federal aid for strategic crop. Business Week, No. 579, p. 44-45. Oct. 5, 1940. 280.8 Sy8
Representative Anderson makes plea to National Defense Advisory Commission.

331. RUBBER shrub. Newsweek 17(10): 48-49. Mar. 10, 1941. 280.8 Ne
"Navy Department at its Mare Island laboratory near San Francisco... investigating the possibilities of guayule...as a source...[rubber]."

332. THE RUBBER situation - and guayule. Bank of America Business Rev. 12(3): 6-8. Mar. 1942. 280.8 B22
Rubber supply and demand, and guayule's contribution. Production costs.

333. RUBBER source scouted in west Texas; cooperative survey is made of guayule area. Tex. Forest News 22(5/6): 1, 6. May/June 1942. 99.8 T31
Approximately 2,500 tons of guayule growing in Trans-Pecos region of Texas.

334. RUSBY, H. H. The rubber plants of Mexico. Torreya 9: 177-184. Sept. 1909. 450 T63
Discusses three rubber producing plants: Castilla elastica, guayule, and euphorbia elastica.

335. RUSSELL, M. W. Le guayule (Parthenium argentatum Gray). Rev. de Bot. Appl. et d'Agr. Colon. 8: 445-447, 724. June, Oct. 1928. Ref., p. 447. 26 R323
Description, habitat, history, and cultivation.

336. SAN MILLÁN, J. M. La importancia del guayule para la producción de goma. Hacienda 22: 332-333. Nov. 1927. 6 H11
Description of plant, where grown, and comparison of the rubber product with that from Hevea.

337. SAUCEDO, VICENTE. Posibilidades de la industria hulera y guayulera en Mexico. Mex. Forest. 7(1): 8-13. Jan. 1929. 99.8 M57
It would be possible to produce at least 50,000 tons of guayule rubber in the northern states of Mexico.
Abs. in Biol. Abs. 3: 2007-2008. Sept./Nov. 1929. 442.8 B526

338. SAUCHELLI, VINCENT. Guayule rubber a home industry; recent findings by Dr. D. Spence show that guayule rubber is a colloidal suspension in the plant juices like latex of the Hevea tree - important developments follow. India Rubber World 78(3): 55-56. June 1928. 305.8 In2
Includes discussion of Dr. W. B. McCallum's work on propagation - machinery developed for all phases of the guayule industry.

339. SAUCHELLI, VINCENT. Machine grown rubber in the United States - rubber growing by American farmers - plant-breeding and mechanical efficiency - America's answer to cheap coolie labor. India Rubber World 75(2): 67-69. Nov. 1926. 305.8 In2
"New varieties have been developed which are better yielders, which will be planted out, cultivated, and harvested by machinery. The areas capable of being utilized [are] in all parts of the cotton belt and even in other sections of the South.
"Three outstanding problems were solved: (1) The plant was made to reproduce by seed in a practical way on a large scale; (2) it was made to secrete sufficient rubber under conditions of forced growth; and (3) the successful transplanting to the field, under control from nurseries."
Partially reprinted in Mex. Com. and Indus. 9(1): 9-11. Jan. 1927. 287 Am3Mj

340. SCHIDROWITZ, PHILIP. Guayule in the past. India Rubber Jour. 102(22): 3-4. Nov. 29, 1941. 305.8 In21
Review of 1910 boom year: position in 1910, occurrence and harvesting, preparation of rubber, how the future was regarded in the past, and capital investment.

341. SCHMID, L., and STOHR, R. Ueber das sterin aus Parthenium argentatum. Deut. Chem. Gesell. Ber. 59: 1408-1410. July 7, 1926. 384 B45
Includes description of experiments in securing stearin from Parthenium argentatum.

342. *SCHOFFELMAYER, VICTOR. Big guayule project in Southwest and Mexico promises natural rubber. Dallas Morning News, Apr. 1, 1943, p. 14.

343. SCHOFFELMAYER, VICTOR. Guayule called emergency crop in winter garden. Dallas Morning News, Dec. 29, 1941, pt. 2, p. 3.
Experts have impressed upon Congress that guayule is best bet. Though California would take the lead in growing this rubber substitute, Texas, New Mexico, and Arizona would also grow it. In Texas, Brewster, Presidio, and Pecos Counties should be good localities. Illustrations of machinery used in harvesting. Gross returns, $75 per acre with rubber at 23 cents a pound. Measure before Congress provides for planting 45,000 acres.

344. SCHULTZ, E. F. El guayule en Tucumán. Tucumán. Estac. Expt. Agr. Cir. 107, 4 p. Tucumán, Argentina, 1942. 102.5 T79
A discussion of the rubber situation and the possibilities for the production of guayule in Tucumán. The guayule plant is described, and its requirements of temperature and soil are noted.

345. SE IMPLANTARÁ el cultivo del guayule en el país. Visitas de un técnico norte-americano. Maderil 15(175): 34. Jan. 1943. 99.82 M26
Notes a visit of Dr. E. Barthlett [i. e. Dr. H. H. Bartlett] of the United States to Argentina, during which he surveyed the possibilities of guayule cultivation in the latter country and concluded that it was possible. It is stated that estimates have indicated that 50,000 hectares of guayule in full production would be needed to supply Argentina's entire requirements of rubber.

346. LA SIEMBRA del guayule. Buenos Aires, Argentina. Bolsa de Cereales. Rev. 31(1591): 21. Mar. 20, 1943. 287 B866
Also in Res LL: 14,1666, Mar. 20, 1943, with title: La siembra de guayule. (286.85 R31)

347. SMITH, G. E. P. The production of guayule rubber under irrigation. Agr. Engin. 23: 312, 324. Oct. 1942. 58.8 Ag83
Describes irrigated plantations of the Intercontinental Rubber Co., in Arizona in 1916 and later. Further developments at Salinas, Calif., are noted as well as the Government's recent guayule program. It is suggested that guayule plantings be continued after the war.

348. SORGES, FELICE. Sul "guayule"; ricerche ed osservazioni su piante di Parthenium argentatum acclimatate nel R. Giardino Coloniale. Palermo R. Giard. Colon. Bol. 8, pt. 2(2): 45-54. 1925. Ref., p. 54.
451 P172
Gives history, dimensions of the various parts of the plant, analysis of the plant, rubber and resin content, and discussion of guayule resin.

349. SPENCE, DAVID. [Abstract of address before American Chemical Society, Los Angeles, 1930.] Science 72(1872): sup., xii, xiv. Nov. 14, 1930. 470 Sci2
Abstract also appears in Sci. News Letter 18: 318. Nov. 15, 1930. 470 Sci24

350. SPENCE, DAVID. The bacterial decomposition of the rubber in the latex of hevea in relation to the question of the function of the rubber in the living plant...an address delivered in Manchester before a joint meeting of the Society of Chemical Industry and the Institution of the Rubber Industry on July 24, 1935. Res. Assoc. Brit. Rubber Mfrs. Inform. Bur. Jour. 4(8): 87-91. Aug. 1935.
"A monthly record was...maintained over a period of years of the changes occurring in the total rubber in these [guayule] plants...The results of this work [show that] notwithstanding the diversified methods of investigation employed, every one of our tests demonstrated that the rubber was actually used by the guayule plant to a greater or less extent to meet its requirements in its response to the stimulus of new growth."
Abs. in Soc. Chem. Indus. Jour. Chem. and Indus. 54: 766. Aug. 23, 1935. 382 M31C; Chem. Abs. 30: 323. Jan. 10, 1936. 381 Am33C

351. SPENCE, DAVID. The chemistry of guayule. Indus. and Engin. Chem. 18: 1126-1128. Nov. 1926. 381 J825
Discusses rubber content of guayule shrub, separation of rubber from shrub, shrub deterioration in storage, experiments on shrub preservation and stabilization, and the status of the guayule rubber industry.
Reprint in Rubber Age 20(3): 133-135. Nov. 10, 1926. 305.8 R82
Abs. in India Rubber and Tire Rev. 26(9): 34-35, 39-40. Sept. 1926. 305.8 In23; Chem. Abs. 20: 3841-3842. Nov. 20, 1926. 381 Am33C

352. SPENCE, DAVID. Cultivation and preparation of rubber in the United States. Indus. and Engin. Chem. 22: 384-387. Apr. 1930. 381 J825
"A solution of the important problem of finding a source of rubber in this country has been undertaken in California [by the Intercontinental Rubber Co.] in the cultivation and extraction of rubber from the Mexican guayule plant. This undertaking was begun about eighteen years ago and the experimentation has now reached the stage where a factory for the commercial extraction of the rubber from this plant is in sight. The problem of rubber cultivation in the United States has been studied from various angles - botanical, chemical, agricultural, mechanical, and economic - and a brief outline of what has been accomplished along these lines is given."
Partially reprinted in India Rubber Jour. 79: 636, 638. May 3, 1930. 305.8 In21. Abs. in Soc. Chem. Indus. Jour. Brit. Chem. Abs. B, June 13, 1930, p. 520. 382 M31; Biol. Abs. 5: 2904. Nov. 1931. 442.8 B526; Chem. Abs. 24: 2914. 1930. 381 Am33C

353. SPENCE, DAVID, and CALDWELL, M. L. Determination of rubber in rubber-bearing plants. Indus. and Engin. Chem. Analyt. Ed. 5: 371-375. Nov. 15, 1933. Ref., p. 375. 381 J825A
"The work...was undertaken as an essential step towards the solution of some of the complex problems in the production of rubber from the guayule shrub...The authors' method, while primarily developed for the analysis of guayule, has been applied with success to the investigation of other rubber-producing plants."
Partially reprinted in India Rubber World 90(1): 45-46. Apr. 1934. 305.8 In2. Abs. in Chem. Abs. 28: 365-366. Jan. 10, 1934. 381 Am33C

354. SPENCE, DAVID, and MCCALLUM, W. J. The function of the rubber hydrocarbon in the living plant. Inst. Rubber Indus. Trans. 11: 119-134. June 1935. 305.9 In7
"The experimental study...of this report was undertaken on guayule plants...[and] carried out in the laboratories of the American Rubber Producers at Salinas and at the Chemistry Department of Stanford University."
Abs. in Chem. Abs. 29: 8393-8394. Nov. 20, 1935. 381 Am33C

355. SPENCE, DAVID. Recent scientific advances in connection with guayule; further research has established the important fact that the rubber in guayule shrub does not exist in the cells in form in which it is recovered, but as a colloidal suspension in the plant juice. Rubber Age 23: 133-134. May 10, 1928. 305.8 R82
"Comprises the greater part of a paper read before a meeting of the N. Y. group, Rubber Division, American Chemical Society, Apr. 25, 1928."
Abs. in Chem. Abs. 22: 2492-2493. July 10, 1928. 381 Am33C

356. SPENCE, DAVID, and BOONE, C. E. Some vulcanization tests of guayule rubber. U. S. Natl. Bur. Standards. Technol. Paper 353, 8 p. Washington, 1927. 157.88 T22 v. 22
"This paper gives the results of some physical tests of guayule rubber grown in both Mexico and California. The samples of guayule rubber were obtained from shrub which had been harvested and treated, the rubber being forwarded to the Bureau of Standards. Figures are given showing the properties of different types of guayule rubber and several compounds made with standard plantation crepes.
"Tests were made using 'pure gum', zinc oxide, and gas-black formulas

and also in formulas where one-half the guayule rubber was replaced with plantation crepe. Some data are given on the aging properties of compounds based on eight months' exposure to the weather protected from sunlight.

"The results indicate, that properly prepared, guayule rubber will compare favorably with plantation Hevea rubber."

Partially reprinted under title "Guayule rubber has commercial utility comparable with plantation crepe," in India Rubber and Tire Rev. 27(11): 26, 46. Nov. 1927. 305.8 In23. Abs. in Rubber Age 22: 169. Nov. 10, 1927. 305.8 R82; Soc. Chem. Indus. Jour. Brit. Chem. Abs. B, Apr. 13, 1928, p. 276. 382 M31; Chem. Abs. 22: 333. 1928. 381 Am33C

357. STUDI ED esperienze sulla coltura delle piante da gomma elastica in Sicilia. Palermo R. Orto Bot. Bol. 5: 132-137. Dec. 31, 1906. 451 P17

I1 "guayule" (Parthenium argentatum, A. Gray), p. 132-135.

358. SWETT, C. E. Extractives from guayule (Parthenium argentatum). Jour. Indus. and Engin. Chem. 1: 315-316. May 1909. 381 J825

"It is undoubtedly the presence of a large quantity of resinous matter associated with the rubber that enables the extractives to collect together as the wood is ground under water...Is there not a hint in this for the collection of the rubber contents of the milkweed?"

Abs. in Chem. Abs. 3: 3012. Dec. 20, 1909. 381 Am33C

359. TAVERNETTI, A. A. Monterey County experiments with rubber plant. Calif. Cult. 67: 420. Oct. 16, 1926. 6 C12

"After many years a strain of the guayule has been perfected which will grow and produce rubber profitably on certain soils in the coastal valleys of California. One of the first commercial acreages to be planted in California has been made by the Rubber Exploration Co. near Salinas, where several hundred acres of guayule are now growing."

360. TAYLOR, F. J. Uncle Sam's rubber farmer; through Dr. William B. McCallum's work, 40,000 farmers, each with 100 acres of guayule, could make us independent of foreign rubber sources. Country Gent. 111(6): 16, 57-58. June 1941. 6 C833

Describes his work with the Intercontinental Rubber Company. "In improved varieties now undergoing selection, the rubber content runs up to 25 per cent."

361. TERRY, H. L. India rubber and its manufacture. 287 p. London, Archibald Constable & Co., ltd., 1907. 305 T27

Guayule, p. 55-56 of chapter on production of raw india-rubber. Includes an analysis by the author of a sample of the rubber.

362. THONE, F. Guayule rubber. Science 95(2456): sup., p. 9. Jan. 23, 1942. 470 Sci2

Describes the advantage of resin-containing guayule, over resin-free synthetic rubber, for processing in machinery made for hevea rubber, which has about 5 percent resin.

363. THORNBER, J. J. Work with guayule. Ariz. Agr. Expt. Sta. Ann. Rpt. (1911/12) 23: 673-674. 1912. 100 Ar4

300 rooted plants set out in March 1911, and irrigated, showed encouraging growth until eaten back by jackrabbits. A second lot, seedlings, made fair growth.

Abs. in U. S. Off. Expt. Stas. Expt. Sta. Rec. 29: 443. 1913. 1 Ex6R

364. TIRES for everybody? A proposal to give America within three years enough real and synthetic rubber to meet every likely need. Motor Age 61(4): 18-19, 53. Mar. 1942. 291.8 M853
Reports statements of W. D. Mason of General Tire and Rubber Co.; favors production of both guayule and synthetic rubber for United States needs.

365. TOWER, REGINALD. Guayule rubber. Kew Roy. Bot. Gard. Bul. Misc. Inform. 6, p. 255-256. 1908. 451 K51B
Dispatch from the British Minister to Mexico to the Secretary of State for Foreign Affairs. Quotes an American expert who claimed that only about 400,000 tons of guayule were in existence at that time, either standing in the soil, at the plants, or in transit. Because of the slow-growing habits of the shrub, it was predicted the industry would go into decay.

366. TREADWELL, J. C. Guayule rubber from Texas; factory at Marathon has taken full advantage of only guayule district on American side of the Rio Grande. Rubber Age 20: 139-140. Nov. 10, 1926. 305.8 R82
Border Rubber Co. plant was built in 1907, operated until 1916, remained dormant until 1925, rehabilitated and operated continuously until September 1926, when operations were suspended pending recovery in price and demand for the product. Includes description of plant operations.

367. TRUMBULL, H. L. Growing rubber in North America. Indus. and Engin. Chem. Indus. Ed. 34: 1328-1335. Nov. 1942. 381 J825
Cryptostegia, golden rod, guayule, and kok-saghyz as sources of rubber. Milling process of guayule.

368. U. S. CONGRESS. HOUSE. A bill to provide for the planting of forty-five thousand acres of guayule in order to make available a domestic source of crude rubber for emergency and defense uses. U. S. Cong., 77th, 1st sess., H. R. 5030, 6 p. Washington, D. C., U. S. Govt. print. off., 1941.
Introduced by Mr. Anderson of California, June 11, 1941, and referred to Committee on Agriculture.

369. U. S. CONGRESS. HOUSE. A bill to provide for the planting of forty-five thousand acres of guayule in order to make available a domestic source of crude rubber for emergency and defense uses. U. S. Cong., 77th, 1st sess., H. R. 6262, 5 p. Washington, D. C., U. S. Govt. print. off., 1941.
Introduced by Mr. Anderson of California, Dec. 17, 1941, and referred to the Committee on Agriculture.

370. U. S. CONGRESS. HOUSE. A bill to provide for the planting of guayule and other rubber-bearing plants and to make available a source of crude rubber for emergency and defense uses. U. S. Cong., 77th, 2d sess., H. R. 6622, 5 p. Washington, D. C., U. S. Govt. print. off., 1942.
Introduced by Mr. Fulmer, Feb. 18, 1942, and referred to the Committee on Agriculture.

371. U. S. CONGRESS. HOUSE. A bill to provide for the planting of guayule and other rubber-bearing plants and to make available a source of crude rubber for emergency and defense uses. U. S. Cong., 77th, 2d sess., H. R. 6624, 5 p. Washington, D. C., U. S. Govt. print. off., 1942.
Introduced by Mr. Anderson of California, Feb. 18, 1942, and referred to the Committee on Agriculture.

372. U. S. CONGRESS. HOUSE. A bill to provide for the planting of seventy-five thousand acres of guayule or other rubber-bearing plants in order to make available a domestic source of crude rubber for emergency and defense uses. U. S. Cong., 77th, 2d sess., H. R. 6299, 5 p. Washington, D. C., U. S. Govt. print. off., 1942.
Introduced by Mr. Anderson of California, Jan. 5, 1942, and referred to the Committee on Agriculture.

373. U. S. CONGRESS. HOUSE. Guayule rubber program. Cong. Record 89: 10324-10327. 1943. 148.2 R24
Remarks by Mr. Stefan of Nebraska and Mr. Outland of California.

374. U. S. CONGRESS. HOUSE. Resolution providing for an investigation of the program for the planting of guayule to serve as a domestic source of crude rubber. 78th Cong., 1st sess., H. R. 346, 2 p. Washington, D. C., U. S. Govt. print. off., 1943.
Submitted by Mr. Anderson of California, Nov. 5, 1943, and referred to the Committee on Rules.

375. U. S. CONGRESS. HOUSE. COMMITTEE ON AGRICULTURE. Guayule and other rubber-bearing plants. 77th Congress, 2d sess. H. Rpt. 2517 [to accompany S. 2775], 5 p. Washington, D. C., U. S. Govt. print. off., 1942.

376. U. S. CONGRESS. HOUSE. COMMITTEE ON AGRICULTURE. Guayule rubber; hearing...77th Congress, 2d session, on H. R. 6299, a bill...Jan. 7, 8, and 13, 1942. Serial F, printed for the use of the committee. 113 p. Washington, D. C., U. S. Govt. print. off., 1942. 148.9 Ag77G

377. U. S. CONGRESS. HOUSE. COMMITTEE ON AGRICULTURE. Guayule rubber... Report [to accompany S. 2152]. 77th Cong., 2d sess., H. Rpt. 1685, 6 p. Washington, D. C., U. S. Govt. print. off., 1942.

378. U. S. CONGRESS. HOUSE. COMMITTEE ON AGRICULTURE. Guayule rubber... Report [to accompany S. 2282]. 77th Cong., 2d sess. H. Rpt. 1839, 2 p. Washington, D. C., U. S. Govt. print. off., 1942.
Favorable action on the revised bill.

379. U. S. CONGRESS. HOUSE. COMMITTEE ON APPROPRIATIONS. First supplemental national defense appropriation bill for 1944. Hearings...78th Cong., 1st sess. 1638 p. Washington, D. C., U. S. Govt. print. off., 1943.
Includes statements of John Caswell, special representative, Office of Rubber Director, and C. M. Granger, asst. chief, U. S. Forest Service; also report of California Guayule Rubber Committee.

380. U. S. CONGRESS. HOUSE. COMMITTEE ON APPROPRIATIONS. Second deficiency appropriation bill for 1942. Hearings before the Subcommittee on Appropriations...78th Cong., 2d sess. 105 p. Washington, D. C., U. S. Govt. print. off., 1942. 148.9 Ap6
Emergency Rubber Project, statement by C. M. Granger, Forest Service, p. 34-48.

381. U. S. CONGRESS. SENATE. S. 2152, a bill to provide for the planting of 45,000 acres of guayule in order to make available a domestic source of crude rubber for emergency and defense uses.
Introduced by Mr. Downey, Dec. 22, 1941 and referred to the Committee on Military Affairs. Cong. Rec. 87: 10083. 148.2 R24
Reported with amendments. (S. Rpt. 924). Cong. Rec. 87: 10092-10094.
Recommittal of bill to Com. on Military Affairs. Cong. Rec. 88: 6-7.
Reported with amendments. (S. Rpt. 935). Cong. Rec. 88: 41.
Debated and amended. Cong. Rec. 88: 375-379.
Reported back. (S. Rpt. 1685). Cong. Rec. 88: 758.
Made special order. (H. R. 427). Cong. Rec. 88: 1055-1062.
Amended and passed House; title amended. Cong. Rec. 88: 1062-1085.

Senate concurs in House amendments. Cong. Rec. 88: 1125-1126.
Examined and signed. Cong. Rec. 88: 1162, 1164.
Presented to the President. Cong. Rec. 88: 1189.
Vetoed. (S. Doc. 182). Cong. Rec. 88: 1327.

382. U. S. CONGRESS. SENATE. COMMITTEE ON AGRICULTURE AND FORESTRY. Hearings... 78th Cong., 1st sess., on S. Res. 80. A resolution for an investigation relative to the production of industrial alcohol, synthetic alcohol, and synthetic rubber from farm crops. Pt. 6, p. 1659-1702. Washington, D. C., U. S. Govt. print. off., 1943.
Discussion of cause and effect of curtailed guayule planting program.

383. U. S. CONGRESS. SENATE. COMMITTEE ON APPROPRIATIONS. First supplemental national defense appropriation bill for 1944. Hearings...78th Cong., 1st sess. 764 p. Washington, D. C., U. S. Govt. print. off., 1943.
Includes statements of John Caswell, special representative, Office of Rubber Director; C. M. Granger, asst. chief, U. S. Forest Service; and F. J. Hart, chairman, California Guayule Rubber Committee, p. 455-475, 581-584.

384. U. S. CONGRESS. SENATE. COMMITTEE ON MILITARY AFFAIRS. Expansion of program relating to planting of guayule and other rubber-bearing plants. 77th Cong., 2d sess. S. Rpt. 1607 [to accompany S. 2775], 2 p. Washington, D. C., U. S. Govt. print. off., 1942.

385. U. S. CONGRESS. SENATE. COMMITTEE ON MILITARY AFFAIRS. Guayule rubber. Hearing...77th Cong., 2d sess. on S. 2775, a bill to amend the act of March 5, 1942, relating to the planting of guayule and other rubber-bearing plants. September 16, 1942. 20 p. Washington, D. C., U. S. Govt. print. off..1942. 148.7 Mi77G

386. U. S. CONGRESS. SENATE. COMMITTEE ON MILITARY AFFAIRS. Guayule rubber... Report [to accompany S. 2282]. 77th Cong., 2d sess., S. Rpt. 1099, 8 p. Washington, D. C., U. S. Govt. print. off., 1942.
Favorable action on the revised bill.

387. U. S. CONGRESS. SENATE. COMMITTEE ON MILITARY AFFAIRS. Guayule rubber... Report [to accompany S. 2152]. 77th Cong., 1st sess., S. Rpt. 924, 3 p. Washington, D. C., U. S. Govt. print. off., 1941.

388. U. S. CONGRESS. SENATE. COMMITTEE ON MILITARY AFFAIRS. Guayule rubber... Report [to accompany S. 2152]. 77th Cong., 2d sess., S. Rpt. 935, 4 p. Washington, D. C., U. S. Govt. print. off., 1942.

389. U. S. CONGRESS. SENATE. COMMITTEE ON MILITARY AFFAIRS. Strategic and critical materials [guayule rubber]. Hearing...77th Cong., 1st-2d sess., on S. 2152. 2 pts. Washington, D. C., U. S. Govt. print. off., 1941-42. 148.7 Mi77St

390. U. S. DEPARTMENT OF AGRICULTURE. Designation of responsibility to Forest Service for Guayule Rubber Project. U. S. Dept. Agr. Off. of the Sec. Memo. 991, 1 p., processed. Washington, D. C., Mar. 12, 1942. 1.9 Ag86Me

391. U. S. DEPARTMENT OF AGRICULTURE. Press releases. 8 Nos., processed. Washington, D. C., 1934-43. 1.9 In31Inf
Federal scientists speed rubber plant experiments. 5 p. Sept. 10, 1934. (396-35)
Reprinted, with slight changes, in Rubber Age 36: 23-24. Oct. 1943. (305.8 R82); Partially reprinted in Automotive Indus. 71: 377. Sept. 29, 1934. (291.8 Au82); Science 80: 261-262. Sept. 21, 1934. (470 Sci2); Sci. Amer. 152: 79. Feb. 1935. (470 Sci25)

Guayule rubber production launched by U. S. D. A. 4 p. Mar. 8, 1942. (1772-42)

Rapid progress reported on guayule rubber project. 2 p. Apr. 2, 1942. (2122-42)

Nursery planting completed in guayule rubber project. 3 p. June 9, 1942. (2605-42)

Progress reported in guayule rubber project. 4 p. Jan. 24, 1943. (1402-43)

[Guayule rubber now being extracted for war needs.] 2 p. Feb. 17, 1943. (1612-43)

[Guayule emergency rubber program is being curtailed.] 2 p. Mar. 30, 1943. (1985-43)

Texas' wild guayule aids rubber supply. 2 p. Oct. 5, 1943. (685-44)

392. U. S. EMPLOYMENT SERVICE. Guayule; estimated labor requirements for planting and weeding 50,000 acres in California 1942-1943, based on assumptions given by the Guayule emergency rubber project. 2 p., processed. Sacramento, Calif., Oct. 20. 1942. (Report 821.5)

393. U. S. FOREST SERVICE. Guayule rubber production by the Emergency Rubber Project. India Rubber World 109: 363-366, 370. Jan. 1944. 305.8 In2

394. U. S. FOREST SERVICE. A report on the Guayule Project of the United States Department of Agriculture undertaken pursuant to the Act of March 5, 1942 as amended. Prepared by the Forest Service with the cooperation of the Bureau of Agricultural and Industrial Chemistry, Bureau of Plant Industry, Soils, and Agricultural Engineering, and Bureau of Entomology and Plant Quarantine of the Agricultural Research Administration. March 20, 1944. 43 p., processed. Washington, D. C., 1944. 1.962 A2G931

395. U. S. FOREST SERVICE. EMERGENCY RUBBER PROJECT. Guayule culture. 14 p., processed. Washington, D. C., Sept. 1942. 1.962 A2G93

396. U. S. FOREST SERVICE. EMERGENCY RUBBER PROJECT. Questions and answers. 6 p., processed. Salinas, Calif., Mar. 31, 1942.
Guayule culture, milling, administration of plantations, etc.

397. U. S. FOREST SERVICE. EMERGENCY RUBBER PROJECT. Rubber from guayule. 8 p., processed. Los Angeles? Apr. 15, 1943. (S-261-43).
History, cultural methods, and production program.
Earlier editions were issued Dec. 18, 1942 and Sept. 1, 1942.

398. U. S. FOREST SERVICE. EMERGENCY RUBBER PROJECT. Some facts about guayule culture. 5 p., processed. Salinas, Calif., Mar. 14, 1942.

399. U. S. LAWS, STATUTES, ETC. An act to provide for the planting of guayule and other rubber bearing plants and to make available a source of crude rubber for emergency and defense uses. 77th Cong., 2d sess. Public 473, 3 p. Washington, D. C., U. S. Govt. print. off., 1942.
Introduced by Mr. Downey, Feb. 17, 1942, as S. 2282, and referred to the Committee on Military Affairs. Cong. Rec. 88: 1311, 1327-1328. 148.2 R24
Reported without amendment (S. Rpt. 1099). Cong. Rec. 88: 1384.
Passed Senate. Cong. Rec. 88: 1482.
Referred to House Committee on Agriculture. Cong. Rec. 88: 1530.
Reported back. (H. Rpt. 1839) 88: 1771, 1774-1775.
Approved, March 5, 1942. Public 473. Cong. Rec. 88: 2067.
This law and the one following are the basic legislative authority for the Department of Agriculture's Emergency Rubber Project.

400. U. S. LAWS, STATUTES, ETC. An act to amend the Act of March 5, 1942, relating to the planting of guayule and other rubber-bearing plants. 77th Cong., 2d sess. Public 751, 2 p. Washington, D. C., U. S. Govt. print. off., 1942.
Introduced by Mr. Downey, Sept. 14, 1942, as S. 2775, and referred to the Committee on Military Affairs. Cong. Rec. 88: 7117. 148.2 R24
Reported with amendment (S. Rpt. 1607). Cong. Rec. 88: 7160.
Amended and passed Senate. Cong. Rec. 88: 7160.
Referred to House Committee on Agriculture. Cong. Rec. 88: 7309.
Referred with amendment (H. Rpt. 2517) to the Committee of the Whole State on the Union. Cong. Rec. 88: 7874.
Debated, amended and passed House. Cong. Rec. 88: 7951-7953.
Senate concurs in House amendments. Cong. Rec. 88: 8099-8100.
Approved Oct. 20, 1942. Public 751. Cong. Rec. 88: 8561.

401. U. S. OFFICE OF FOREIGN AGRICULTURAL RELATIONS. Rubber from Mexico. U. S. Off. Foreign Agr. Relat. Agr. in the Americas 3(4): 68-69. Apr. 1943. 1 F752A
"Photographs...of the guayule area in north central Mexico, state of Coahuila, where the General Tire & Rubber Co. is building a mill to make more efficient the extraction of the rubber and to increase production for use in the American war program."

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