

AN ANTIDIABETIC REMEDY: URANADO PESQUI WINE

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Pitchblende or Uraninite is one of the principle minerals which come from Uranium. Pitchblende deposits are mainly found in the San Joachimsthal mines (Czechoslovakia), where it was used to color pottery and Canada, Zaire, The Unites States and in the Chihuahua and Oaxaca provinces of Mexico. Within Spain, minerals deposits exits in La Mina de la Fe (Ciudad Rodrigo), Villar de la Yegua and Lumbrales (Salamanca), in La Haba, Don Benito, Alburquerque and Monesterio (Badajoz) and in La Mina de La Virgen (Jaen) (Fig.1)

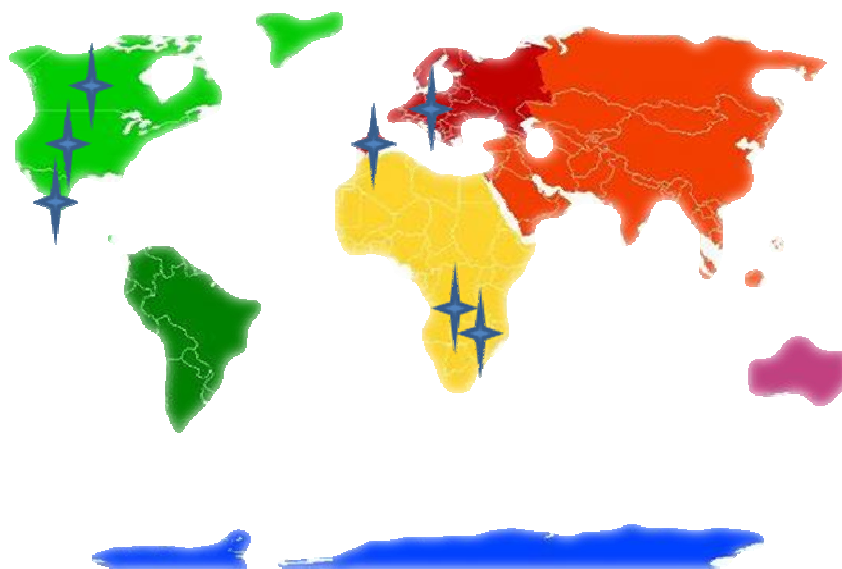


Fig. 1. World situation of the uranium deposits.

The German chemist Martin Heinrich Klaproth (Fig. 2), born in Weringerode (Brandenburg) on December 1, 1743, began his professional career as the proprietor of a Berlin pharmacy and in 1810 became a chemistry professor at Berlin University. He passed away in Berlin on January 1, 1817. Klaproth can be accredited with the discovery of Uraninite in pitchblende, an oxide of Uranium in its metallic state (1841).



Fig. 2. Martin Heinrich Klaproth.

The radioactive properties of Uranium were brought to light in 1896 by the French physicist Antoine Henri Becquerel (Fig.3)

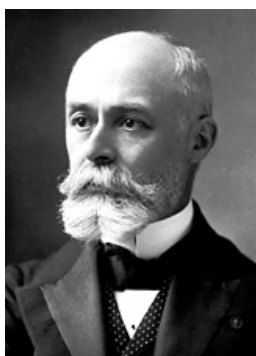


Fig. 3. Antoine Henri Becquerel.

Applications of the Uraium.

Uranium salt were administered orally for the treatment of diabetes until the work of Pierre and Marie Curie (Fig.4) demonstrated that Uranium's radioactive properties could have negative effects on health. The most common injuries came about due to handling or ingesting the salts. The initial side effects include skin agitation, and eye irritation. Secondary side effects include bone and kidney damage in addition to cardiovascular disorders, the appearance of cancer and the patient's death.

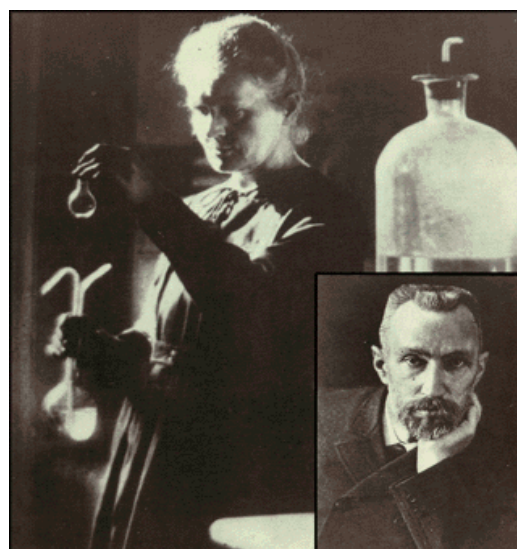


Fig. 4. Pierre and Marie Curie

Nevertheless, the Spanish doctor Santiago Ramón y Cajal, winner of the Nobel Prize in Medicine, made important biomedical advances with Uranium nitrate. In 1912 he used Uranium nitrate to establish (using a stain) the cellular structure of the nervous system (1) and in 1914 he also uncovered the reticular fibers of the myocardium (2). Currently, Uranium nitrate is used in diagnostic testing for Ultramicrotomy.

1. Uranium Salts as Medicine.

Among Uranium salts, the most common is uranium nitrate, which is yellow colored and was widely used as an antidiabetic in the 19th century. Alberto Robin, a member of the Academy of Medicine of Paris, remarked in his *Traité de Thérapie Appliquée* (1900) that its use had been abandoned in the last quarter of that century (3).

In Spain, on the contrary, the *Formulario Enciclopédico* of 1904 includes uranium nitrate as a medicine for its antidiabetic and bacterial properties. It was also an ingredient of common prescriptions: uranium nitrate concoction, uranium nitrate wine and an specific: *Uranado Pesqui Wine*. Moreover, it includes uranium acetate, another uranium salt which is also yellow, for its bacterial properties in the treatment of flu. Uranium acetate appears as a component of four prescriptions for instillations in the nose: uranium acetate compound powder, *Uraninite spray*, Uranium insufflations and Uranium acetate solution (4).

After 1925, the Spanish government placed these mixtures under special control for their high toxicity levels. It was recommended for them to be kept away from light and carefully sealed to safeguard them from any alterations. By this time the use of both uranium nitrate and uranium acetate had ceased to be used as a treatment (5) and was used exclusively as a reactive in chemical analyses (6 and 7).

2. Uranado Pesqui Wine.



In the beginning of the 20th century, according to Perez Mimiguez, this medicine used uranium nitrate as a base, and also included glycerin and Bordeaux wine. Uranium nitrate (Fig.5) was produced by the oldest chemical-pharmaceutical company in the world, Merck de Darmstadt (Germany). The *Formulario Español de Farmacia Militar* (1948) cites the ingredients for this medicinal wine as: uranium nitrate, glycerine, a generous amount of white wine and 90 proof alcohol. This military pharmaceutical manual prescribes the wine for the treatment of diabetes. The recommended dosage is two or three glasses per day just before principal meals (8).

Fig.5. Nitrato de Urano.

2.1. The Commercialization of Uranado Pesqui Wine.

Uranado Pesqui Wine was manufactured in the Pesqui Laboratoires, located in Alameda 17, Pasajes, suburb of San Sebastian (Guipozcoa), whose founder, owner and “preparer” was Alenjandro Edmundo Pesqui de Gemini Lied, with a degree in pharmacy from the University of Santiago de Compostela having been issued January 22, 1919. The administrative offices of the laboratory were found in San Sebastian, Avenida del Parque Amara s/n; offices were also located in Mexico and Argentina. Upon his death in June 20, 1940, the laboratory was left to his son Carlos Pesqui y Galliac, also a pharmacist.

The wine was made following the dosage form for medicinal wine and was composed of Calisaya Quinine, lithium bromide, pepsin extract, uranium nitrate, chemically purified glycerin and aged wine. The mixture has a characteristic red color.

Uranado Pesqui Wine was one of the first commercially proprietary medicines in Spain. The Ministry of the Gobernacion cited it as a authorized medicine on February 28, 1920 with number 665 (9), yet the date could correspond to the date of solicitation for registration because the documentation which gives the date of authorization reads June 26, 1920 (10). It was sold in topaz colored glass bottles with the inscription, “Uranado Pesqui Wine, an antidiabetic”, inscribed in relief with 0.75 centiliters of capacity and sealed with an aluminum cap covered with red wax on which could be found the laboratory logo (a five cornered star). (Fig. 6, 7, 8).



Fig.6. Topaz colored glass bottle and relief inscription.

Upon its initial entrance on the market its price was set at 31,65 pesetas. Its price increased in function to the price of raw materials, processing materials, labor and “definitively all that is integral to the proprietary medicine”, words which Carlos Pesqui repeated on various occasions (1957-58) to the Health Board. July 12, 1957 the board authorized a 25% price increase, as regarding the price of sale from the laboratories to warehouses, increasing its price from 31.65 pesetas to 37.74 pesetas.



Fig. 7. Aluminum cap covered with red wax.

Uranado Pesqui Wine was the most important medicine that the pharmaceutical industry put on the market. Between 1940 and 1960, a large percentage of factory production was exported to Brazil, Mexico, Argentina, Egypt and Turkey according to the export certificates for those countries signed by Nazario Diaz Lopez (General Pharmaceutical Inspector).



Fig.8. Logo.

The sale of the medicine in Spain took place until 1967 through the pertinent authorizations dated May 31, 1954, February 11, 1957 and November 30, 1962. On April 30, 1967 Carlos Pesqui did not reapply for the corresponding authorizations and subsequently the Ministry of Health did not renew the permit.

The acquisition of radioactive products, such as Uranium nitrate, forced industries to apply for governmental permits. For that reason, the Pesqui Drug Company appeared before the Nuclear Energy Committee on February 15, 1958, the governmental committee responsible for the management of the product. A license issued by the General Board of the Health Ministry states that the pharmaceutical industry was authorized to prepare and sell a medicine whose composition included Uranium nitrate. This certificate was issued by Antonio Serrada Hernandez, chief of the Department of Regulatory Affairs.

2.2. Information Supplied to Patients Regarding Uranado Pesqui Wine.

The label as well as the leaflet for Uranado Pesqui Wine informed patients on diverse aspects related with this medicine.

The label, as was customary in Spain since the 19th century (11) warned of possible imitations or falsifications of the product, due to the fact that the original was “the only prepared by the Doctor

Carlos Pesqui...the only person possessing the true and legitimate formula". The same label highlighted that: "the success of the treatment depends on the authenticity of the product" and also insisted on the necessity of checking the authenticity of the product using the following method: "Ensure that your bottle has my signature below these lines. All imitations could be very dangerous to patients due to their components." (Fig.9)



* Archivo General de la Administración. Ministerio de la Gobernación, Dirección General de Sanidad, RDO (28)008.000.
 ** Especificidades Farmacéuticas Nacionales (1919-1936). Cap 44/17606. Expediente nº6631920, vino Uranado Pesqui Alcalá de Henares.

Fig. 9. Label: Warnig for falsification and imitations.

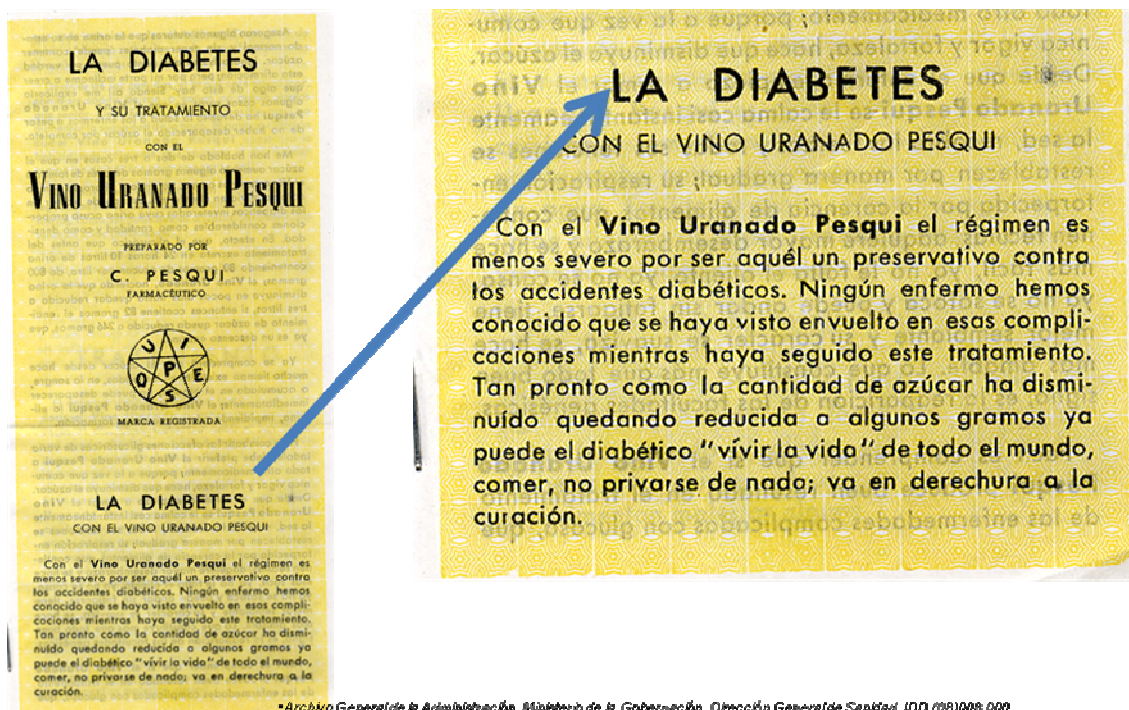
An important feature of Uranado Pesqui Wine was that the name of the product had been trademarked by the Pesqui Pharmaceutical Company. This fact was evident in the logo of the company: a five pointed star inside of a circle. Also in the center of the star was a pentagon where the letter P was clearly marked, in reference to the Pesqui Drug Company. The rest of the letters were placed clockwise along the outer edge of the star and inside the circle. Below the logo was located the trademark. (Fig.10)



*Archivo General de la Administración. Ministerio de la Gobernación, Dirección General de Sanidad, RDD (08)008.000,
*Especialidades Farmacéuticas Nacionales (1919-1936). Caja 44/17606. Expediente nº465/1920, VINO URANADO PESQUI Alcalá de Henares.

Fig.10. Label: Logo and trademark.

The patient's leaflet qualified Uranado Pesqui Wine as useful in the prevention and treatment of diabetes, as it affirmed that it eliminated sugar "while simultaneously preventing its formation" and also provide "vigor and strength" as a consequence of being "a first class restorative" undoubtedly due to the quinine as an important part of its composition. (Fig.11&12)



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*Especialidades Farmacéuticas Nacionales (1919-1936). Caja 44/17606. Expediente nº465/1920, VINO URANADO PESQUI Alcalá de Henares.

Fig. 11. Leaflet: first page.

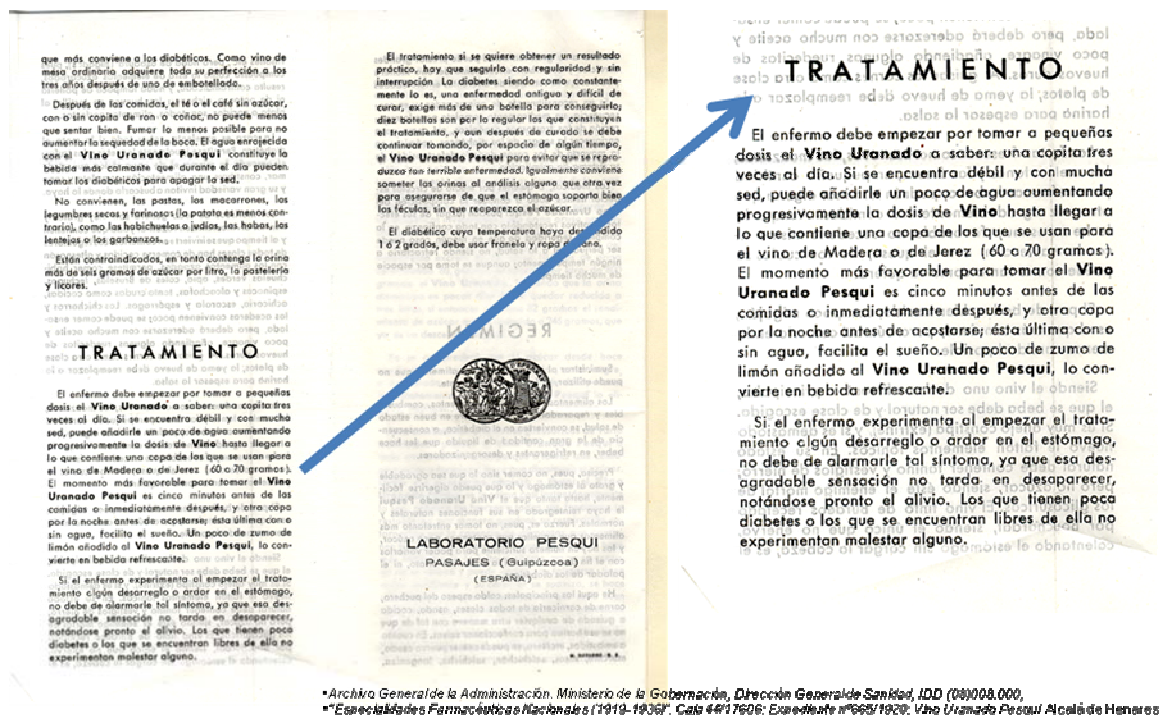


Fig. 12. Leaflet: treatment.

In regards to its use as a treatment, it was recommended to drink ten bottles because Pesqui assured that diabetes “is a disease very difficult to cure”. The appropriate dosage consisted of the ingestion of the medicine diluted in a little cup of water three times daily: two before meals and the other, without being diluted, before going to bed because it caused drowsiness. The medicine could also be dissolved in lemon juice, which converted it into a refreshing drink.

The leaflet affirmed that the patient “did not have to deprive themselves of anything” and that wild game was “excellent, above all if killed by a diabetic”, an attention getting affirmation which may allude to the physical exercise which the patient would be subjected to while hunting. Baked products and liqueurs figured as inadvisable.

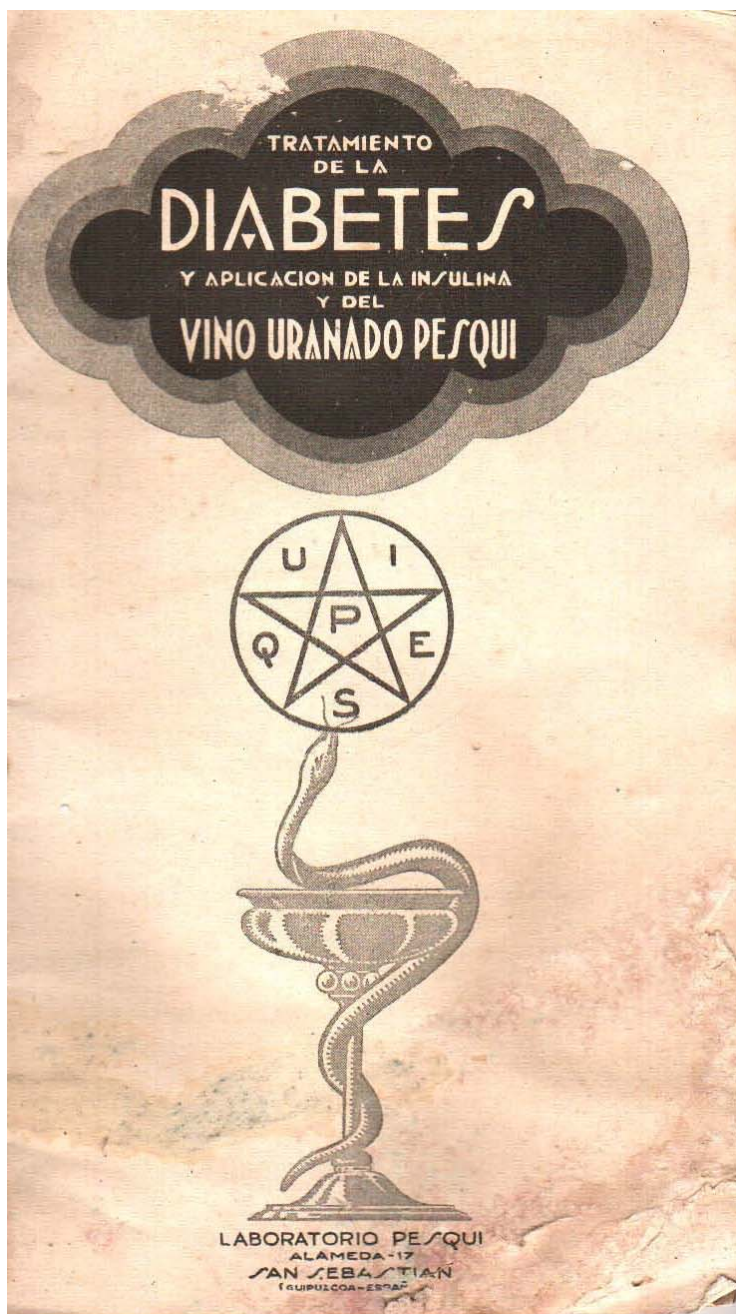


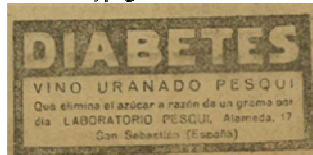
Fig.14. Advertising paper titled “Tratamiento de la diabetes y aplicación de la insulina y del Vino Uranado Pesqui”

Furthermore, the Pesqui Drug Company carried out an advertising campaign for its Antidiabetic Uranado Wine first in a special advertising paper titled “Tratamiento de la diabetes y aplicación de la insulina y del Vino Uranado Pesqui” (Fig. 13) (12) and also in diverse journals with a national readership, including La Vanguardia de Barcelona (Fig. 14,16,18)(13,14,15) and El Día de San Sebastian (Fig.15 &17) (16 & 17) as well as in the “Laboratory” magazine in which that their wine was “the most efficient and accredited antidiabetic” having been used since 1897 in Argentina (Fig.19) (18 &19).

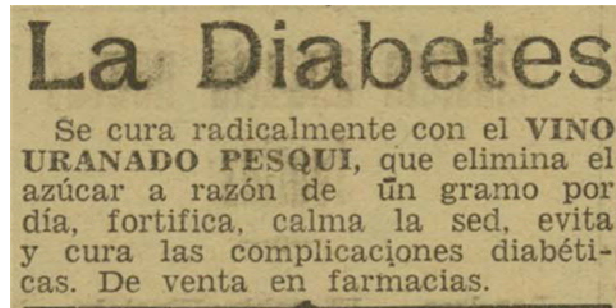
La Vanguardia, Barcelona 26 de Octubre de 1929, pág. 4.



El Día, San Sebastián 8 de Junio de 1930, pág. 2.

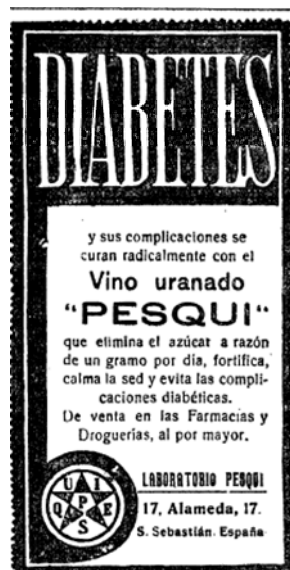


La Vanguardia, Barcelona 13 de Marzo de 1923, pág. 3.



El Día, San Sebastián 15 de Junio de 1930, pág. 11.

Fig. 14, 15, 16 & 17. Advertising campaign I.



La Vanguardia, Barcelona 9 de Octubre de 1926, pág. 4.

Arlequin, Buenos Aires 22 de Junio de 1899, pág. 4.



Fig. 18 & 19. Advertising campaign II.

CONCLUSIONS

1st. Uranado Pesqui Wine, whose active ingredient was uranium nitrate, was first elaborated in 1887 by the pharmacist Alejandro Edmundo Pesqui de Gemini Lied.

2nd. This medicine was the most important product manufactured by the Pesqui Drug Company, located in Gipuzcoa.

3rd. Uranado Pesqui Wine was sold in Spain as a proprietary medicine antidiabetic powers, and from June 26, 1920 it was exported to Mexico, Argentina, Brazil, Egypt and Turkey.

4th. From June 20, 1940 until April 30, 1967 the pharmacist Carlos Pesqui y Galliac, son of Alejandro Pesqui, was responsible for the wine's production.

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- (13) La Vanguardia 20.414 (1929), 4
- (14) La Vanguardia 18.4312 (1923), 3
- (15) La Vanguardia 20.492 (1929), 4

(16) El Día 8 (1930), 2

(17) El Día 15 (1930), 11

(18) Arlequin (1899), 11

(19) Francés Causapé, M.C.: Estudio Histórico de la Especialidad Farmacéutica en España, vol. 1, Madrid 1975, p. 144