

Solidified wine 2,000 years old : glimpses of life in the ancient city of Pompeii. Dr. Louis Sambon on wines and foods: an interesting interview / by J.V. Morton.

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SOLIDIFIED WINE 2,000 YEARS OLD.

GLIMPSES OF LIFE IN THE ANCIENT CITY OF POMPEII.

DR. LOUIS SAMBON ON WINES AND FOODS: AN INTERESTING INTERVIEW.

By J. V. MORTON
(Editor of "The Wine Trade Review.")

SOPHOCLES gave the world a pearl of wisdom when he said, "Seek ever to add fresh knowledge to thy store." The world obeys the injunction in its own way and according to its degree of enlightenment; but now and again one comes across seekers after knowledge in the classic sense—men who display a touch of genius in their quest. Dr. Louis Sambon is a man of that type. Although in the prime of life, he has a record of scientific achievements of which any man might be proud.

From his articles on Pasteur in two recent numbers of "THE WINE TRADE REVIEW," readers may have gained some insight into the character and power of the writer; but the man himself is a far greater personality than can be gathered from those contributions, illuminating as they are. Let me introduce him formally.

DR. SAMBON AND HIS PARENTAGE.

Louis Westenra Sambon, Knight Officer of the Order of the Crown of Italy, M.D. (Naples), F.R.S.M., F.Z.S., Lecturer to the London School of Tropical Medicine, Honorary or Corresponding Member of numerous Medical and Scientific Societies throughout the world, Parasitologist, Epidemiologist, Field Naturalist and Archæologist, also a profound student of other subjects, including wines and foods. He was born in Milan, Italy, in November, 1865. He is of French, Italian, English and Danish ancestry. His father was French on his father's side, Italian on his mother's. His mother, Laura Elizabeth Day, was English, a relative of Charles Dickens and descended from the famous Danish explorer, Vitus Bering.

His father, *Commandatore* Jules Sambon, was one of the thousand volunteers who joined Garibaldi in 1860, and fought for the independence of Italy. He displayed great bravery at the Battle of Milazzo (July 20, 1860), and was twice wounded on the Voltorno battlefields. Dr. Sambon's grandfather, Louis, was the author of a classic work on the coins of Greater Greece; his father also was a numismatist and his work on the coins of Italy (5th to 20th Century) was *couronné* by the *Institut de France*, while his remarkable collection of ancient objects illustrative of the History of the Theatre Throughout the Ages, was acquired by the Italian Government, and now forms the museum of the Scala Theatre in Milan.

Dr. Sambon's younger brother, Arthur, lives in Paris; he, too, is a well-known archæologist and numismatist, author of several books, and editor of a magnificent art review, *Le Musée*.

HIS HOUSEHOLD GODS.

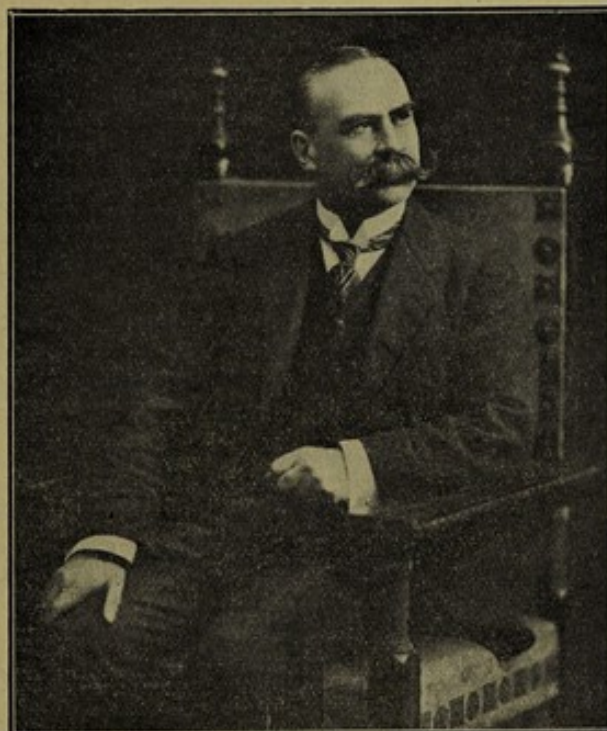
The house of a man with such a family record and varied interests is, as will be easily understood, somewhat in the nature of a museum. Privileged to spend a delightful afternoon with Dr. Sambon at

his house not long ago, I found myself in a dream-world, in which grotesque wooden idols from wildest Africa winked and goggled at porcelain damsels of rare beauty, some in Dresden flowery gowns, others in Capodi-Monte deshabelle. There were finely crackedl Satzuma vases decorated with birds and chrysanthemums of exquisite colouring, and Campanian fish-plates of the third century B.C., marble and terracotta votive offerings of medical interest from the Capuan Temple of Maternity and the Tiberine Asclepion, and Phoenician glasses and Brazilian Morpho butterflies vieing in the splendour of their colouring. In a Greek red-figured wine-mixing crater I saw several glass tubes containing strange worm-parasites preserved in alcohol. Among bronze surgical instruments, found near lake Trasimenus, there was a—lady's hair-pin! The lancets and probes and forceps were hand-

made, beautifully shaped and well adapted to their use. While examining these, I could not help visualising a young army surgeon trampled to death by Hannibal's Punic horse and leaving a sorrowing girl whose hair-pin he had treasured.

A REMARKABLE PICTURE FRAME.

But amid all this profusion of interesting objects, what charmed me most was a picture-frame made of large lumps of Sicilian amber, some opaque and resembling old ivory, others of crystal-like transparency, and varying in colour from golden Tokay to deepest Port. It is a wonderful work of the Renaissance, made about 1570, by order of the Governor of Sicily to enclose a life-size portrait of Philip II. of Spain. The conception, which this noble work fully manifests, is the might of Catholic Spain at its highest, when the "invincible" Armada proudly sailed from the Tagus to vanquish Britain, never dreaming that the storm-raising spirits would side with Elizabeth. Four large blocks of topaz amber



DR. LOUIS WESTENRA SAMBON.

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Presented by Dr. Sambon

sculptured in high relief and placed one in the middle of each side of the frame, represent the four continents in the shape of female figures. America, with her head-gear of eagle feathers, is seated on an armadillo, and holds the middle of the upper side; on the right is Asia wearing a turban and seated on an elephant; below stands Africa, a draped figure, between two lions; on the left is Europe reclining on a prostrate bull. At the four corners, other large blocks of amber represent the viceroys of the principal dominions; they are clad in armour and hold sceptres; behind them are outlined the buildings of their respective capitals. Between the corner and the central blocks are eight bas-reliefs in opaque yellowish amber, representing episodes of Bible history, six figures of saints in the round made of darkest amber and festoons of leaves and fruit. This wonderful frame came into the possession of Dr. Sambon's father, in 1860, when he was fighting in Italy.

TREASURES FROM A POMPEIIAN VILLA.

Many curiosities are hidden away in the cabinets which adorn the drawing-room. I was shown, for instance, a remarkable collection of kitchen utensils, some from Ancient Rome or Etruria, others from the famous villa of Lucius Herennius Florus at Boscoreale, near Pompeii.* There were spits and stew-pans, choppers, strainers, cheese-graters, larding needles and pastry-cutters, a steel-yard (statera), moulds in the shape of trussed birds and fishes, sauce-ladles with graceful handles ending in the shape of heads of duck or greyhound, and all kinds of pitchers and vessels beautifully formed. All these implements were of bronze or silver, and some of them were of more serviceable pattern than those in use to-day.

Pompeii, the famous seaport town at the foot of Mount Vesuvius, became a sort of Rome-super-mare, frequented by all the Roman fashionable world. The Emperor Claudius had a villa there, where his little son was choked by throwing up a pear and catching it in his mouth. There, says Pliny, all imaginable delights were in constant rivalry. Its public banquets were famous throughout the Neapolitan Riviera, which extended from Cape Misenum to the Island of Capri, including Cumae, Puteoli, Neapolis, Herculaneum and Stabiae; and, indeed, what else was the bay itself but a huge crater for such as thirsted after pleasure!

* The ownership of the villa is uncertain; some believe it to have belonged to Publius Fannius Sinistor, but in favour of Florus is the finding of a seal with his name in one of the rooms. The frescoes of this magnificent villa are now in the Metropolitan Museum of Fine Arts, New York.

LOVE, LIFE AND LAUGHTER IN POMPEII.

Beneath the spell of those verdigrised utensils, the imagination conjured up painted walls divided into panels red, yellow, blue, rich in pictorial decorations; mosaic floors in patterns of black and white; marble tables, bronze couches with mattresses made of hares' down and partridges' feathers, pillows stuffed with fragrant dried petals; many-branched candelabra and burning incense; clattering cups of silver brimful of honeyed wine; sounds of flute, lyre, song and clapping hands; young girls dancing in waving gauzy draperies of "woven wind"; a profusion of flowers, a heavy atmosphere and the reclining guests, happy, chattering, laughing, crowned with garlands of roses and contemplating innumerable viands: scallops, cockles, sea-urchins and solens, oysters from the Lucrine lake and Barbary snails, Gallic bacon with green luscious figs, crisp Roman lettuces, radishes and cucumber, white and black olives, sausages of pheasant, egg and mushroom, forcemeat balls of crab and crayfish with asparagus and mayonnaise sauce, livers of fatted geese and Libian truffles, round flat loaves of whitest

bread scored daisy-like, fried red mullets and cuttle-fish, boiled dories with garum, baked lamprey, roast ducks stuffed with chestnuts, fat quails, partridges and ortolans of a golden brown, stewed pigeons and steaming salted tongues, sow paps cooked in milk, and devilled kidneys, lamb, veal, pork and venison prepared in many ways, jugged hares and wild boar served with a sweet-sour sauce, all kinds of vegetables and salads, fritters,

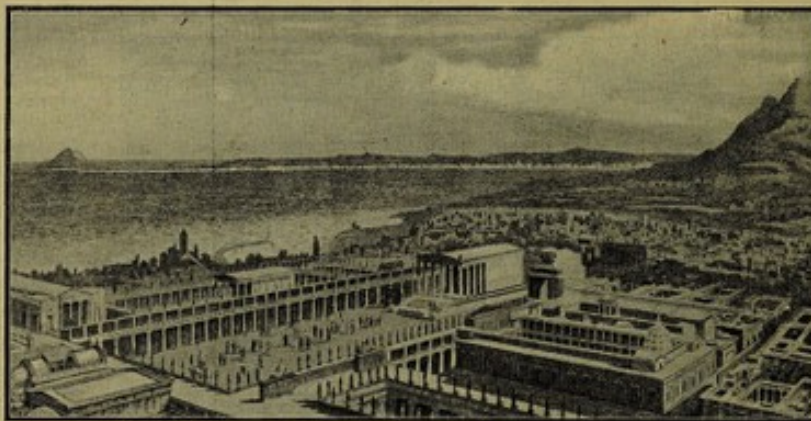
dumplings, jam tarts and cheese-cakes, grapes, pears, peaches and delicious musk-melons, fresh almonds and dried figs, golden dates and sweet honeycombs, whipped cream, ices and nougat, and more and more, again and again, needing repeated use of the peacock feather.

AND THEN DEATH AND DESOLATION.

"Drink one more crater, here where I have sipped the nectar," says Cynthia, her wine-rouged lips revealing the glimmer of pearly teeth; "my name has seven letters to it, you duffer, not six," and she holds up the superb Alexandrine cup of gilded silver with its chased skeletons—shades of "pleasure," and "envy." Thus, exquisite art, generous wine and amorous looks extol a degraded Epicureanism. "Let us eat and drink, for to-morrow we die."

And to-morrow was death.

In A.D. 63 an earthquake had partially destroyed the city, but on that day, the 24th of August, A.D. 79, a tremendous explosive eruption of the long-dormant Vesuvius buried the reckless pleasure-town beneath volleys of volcanic dust, pumice and red-hot stones.



A RECONSTRUCTED PICTURE OF POMPEII.

This is reproduced from an old engraving showing what Pompeii must have been like before its destruction. The background shows the Bay of Naples, and Vesuvius towers to the right.

"This is Vesuvius, lately green with umbrageous vines; here the noble grape had pressed the dripping coolers. These are the heights which Bacchus loved more than the hills of Nysa; on this mountain the satyrs recently danced. This was the abode of Venus, more grateful to her than Lacedaemon; this was the place renowned by the divinity of Hercules. All now lies buried in flames and sad ashes. Even the gods would have wished not to have had the power to cause such a catastrophe."—*Martial*, Book IV., xlv., written soon after the eruption of A.D. 79.

Florus' villa was being redecorated when overwhelmed. It was the home of a wealthy wine-grower of refined taste. The mural paintings of his villa are among the finest examples of Pompeian frescoes; his furniture, his treasure of Alexandrian silverware,* his wife's jewellery, all proclaim him a lover of the beautiful, a true connoisseur of art, and you may be sure he had a fine palate.

THE OLDEST WINE IN THE WORLD.

"Look at this," said Dr. Sambon; "here is a lump of solidified wine from a small amphora in



POMPEII: THE GATE OF HERCULANEUM.

Vignette from Mazois' view of the city.

Florus' cellar." Carefully, reverently, I picked up the dark mass of smooth, translucent substance. It looked like a lump of colophony incrustated with some ochreous earth, but my host broke off a tiny particle of the purplish-black glassy substance and asked me to triturate it between thumb and index finger, then approach it to my nostrils. This I did, and lo! I inhaled a strong, unmistakable vinous odour, possibly the very bouquet of the celebrated Campanian wine which Horace has immortalised.

"Yes," said Dr. Sambon, "it has retained its flavour and character unchanged; indeed, it has the peculiar aroma of the modern Campanian wines which I know well, but, though it certainly is the residue of some choice wine of rare vintage, it would be difficult to decide whether it is oldest Falernian, or some of Florus' own product from his Vesuvian vineyards."

I was shown a photograph of the portrait of Florus' wife, the beautiful Maxima, and one of the pendants from her necklace—a tiny cupid wonderfully wrought in gold. It seemed as if we were talking of some relative or dear friend recently departed, and, almost



THE WALLS AND AGGER OF POMPEII.

The ramparts of Pompeii, on the north and north-east, as shown in the above cut, consisted of an earthen terrace (B) fourteen feet wide, walled and counterwalled, which was ascended from the city by flights of steps (C) broad enough for several men abreast. The external face (A) including the parapet, was about twenty-five feet high.

dreamily, I approached to my lips the wine dust on my fingers, and pledged the memory of good, honest Maxima. And the wine I tasted was two thousand years old!

DR. SAMBON'S BOYHOOD.

In Dr. Sambon's library, to which we adjourned for a smoke and chat, every available chair was

* Florus' furniture is now in the Berlin Museum, his treasure of silver in the Museum du Louvre, Paris.

stacked high with books; book-cases full of books line the walls, and piles of books rose up from the floor. It is, in truth, the work room of one who browses on books; yet Dr. Sambon is no book-worm in the ordinary acceptation of the term. He is a man of action as well as of thought. Gifted with abundant vitality, he has never an idle moment.

Speaking of his boyhood, Dr. Sambon said:

"As a boy I lived chiefly in Naples. Vesuvius, with its stone-pine cloud, was as sacred to me as Fuji-San is to the people of Tokio and Yokohama. An English physician and geologist, Professor Johnstone-Lavis, first taught me to read in the great stone-book. With him I studied the geology of Campania, collected Appenninic fossils, mapped the lava streams of Mount Somma, and watched the Vesuvian crater belch forth steam and lava.

"The Naples Aquarium and the London Zoological Gardens, the National Museum of Naples and the British Museum were, in turn, my chief places of instruction and amusement. I owe to the late Professor Gasco the interest I take in all things zoological, to my father the love I have for art and archæology, to my mother the cult of all that is good. I used to play with early Roman coins and terracotta lamps as other boys play with marbles and tops. My favourite picture-books were Buffon's Natural History, and a stupendous collection of over four hundred Greek vases.



SOLIDIFIED WINE 2,000 YEARS OLD.

(From an original drawing.)

"Lizards, snakes, spiders and soldier-crabs were my usual pets. I knew how the wall-lizard regenerates her brittle tail, how the four-rayed snake swallows rats and frogs, how the garden-spider becomes invisible. I knew the extraordinary powers of the torpedo-fish (that living electric battery used, long before the Leyden jar, by early Greek physicians in the treatment of disease), and I had studied the habits of the tiny oyster-crab which, with one of its hosts, the Pinna, was represented in Egyptian hieroglyphics to symbolise the helplessness of a man without friends.

"I spent several summers fishing in Mediterranean waters, others climbing Swiss mountains. In 1878 I went with my parents to the Paris world-fair, and there spent some enchanted moments of rioting boyish imagination within the great copper head of Bartholdi's statue of Liberty, which to-day stands on Bedloe's Island, in New York Harbour.

"My early studies were carried out at Hoddesdon Grammar School, Hertford, the College Galliard at Lausanne, and the Liceo Umberto at Naples; my medical studies at the University of Naples and St. Bartholomew's Hospital, London."

UNDERGRADUATE DAYS.

During his student days—in 1884—a great cholera epidemic swept over Naples, and Louis Sambon was one of those engaged by the town authorities to fight

the pest. He saw flies swarming over dying patients, lapping up their vomit, then scrambling over food. He came to the conclusion that the house-fly might be a very dangerous germ-carrier, and, indeed, some of the most wonderful of his discoveries have been made on the transmission of disease by flies. For services



THE BAY OF NAPLES.

rendered during this epidemic, and another one which followed two years later at Pozzuoli, the French and Italian Governments awarded gold medals to the young scientist. During the Pozzuoli epidemic he took charge of the Armstrong works, the local doctor having contracted cholera.

Graduating with honours in medicine from the University of Naples in 1891 he, a year later, became an assistant surgeon in the Italian army. Soon, however, on account of his splendid ability and linguistic attainments, he was sent to foreign countries on governmental missions, and later, returning to Rome, devoted himself to the natural sciences, geography, history and medical archæology.

SETTLING IN LONDON.

In 1897 Dr. Sambon settled permanently in London. In an article written by him in the *British Medical Journal*, he endeavoured to prove that the white man could become acclimatized to tropical lands, live and thrive there, were it not for the diseases peculiar to those lands. The tropical climate, *per se*, was not injurious, but the diseases were deadly, and these were not meteorological but parasitic diseases. Eliminate the parasite, he said, and the tropics will be as habitable as any other region. On this theory acclimatization became simply a matter of active and intelligent hygiene. This view was supported at the time by Sir Patrick Manson, Sir James Cantlie, Professor Blanchard and the eminent geographer Sir Harry Johnston, but was opposed by other authorities.

Twenty-five years later, while travelling through the Americas on pellagra work, Dr. Sambon visited Panama at the express invitation of Surgeon-General Gorgas, and there, once the deadliest spot within the tropics, he had the satisfaction of witnessing glorious

proof of his teachings; a healthy place, the white man thriving, the parasite vanquished. "We have proved that you were right," said Gorgas.

Dr. Sambon's article on "Acclimatization" aroused the interest of the late Sir Patrick Manson, England's eminent specialist and pioneer in tropical medicine. An interview followed. Dr. Manson recognised in the young Anglo-Italian a scholarly thinker, and one who would go far as a research worker. It thus came about that Dr. Sambon was appointed in 1898 to the chair of Parasitology in the London School of Tropical Medicine, which was just then being organised by Dr. Manson as the first of its kind.

TROPICAL DISEASES.

It was Sambon who, in 1900, with the assistance of Dr. Low (then a student, now a teacher at the London School of Tropical Medicine), carried out the experiment, devised with Manson and now become classic, to prove in a definite way what had long been suspected (as a Babylonian clay tablet 7,000 years old clearly indicates), that it is the mosquito that carries the malarial parasites from man to man, just as Sir Ronald Ross had brilliantly proved in the case of bird malaria and naturally inferred, and partly even proved, in the case of man. The principle of the experiment was as follows: men who had never had malaria were to live throughout the epidemic season in a place known to be intensely malarious (the Roman Campagna) protecting themselves against mosquito bites and living in a mosquito-proof hut. These men should capture, breed and



DESTRUCTION OF POMPEII (A.D. 79).

"Day was turned into night, and light into darkness: an inexpressible quantity of dust and ashes was poured out, deluging land, sea, and air, and burying two entire cities, Herculaneum and Pompeii, while the people were sitting in the theatre!"—*Dion Cassius*, lib. lxxvi.

For one thousand seven hundred years Pompeii and Herculaneum remained buried at a depth of from fifteen to thirty feet. A new population lived and laboured above them. An aqueduct was constructed over their heads. It was only when a farmer in digging for a well, penetrated the roof of a house, that they were once more brought to the light of day and the knowledge of mankind. It has been estimated that about 20,000 persons perished at Pompeii. In many cases their corpses left perfect moulds in the ashes which enveloped them.

infect mosquitoes, then send them alive to London in order that they should bite and thus infect men who had never before had malaria. The experiment was entirely successful. It proved that the mosquito conveys the disease and that malaria cannot be



MAXIMA.

This portrait is a reproduction of a mural painting found in the Villa of Florus, near Pompeii, and is supposed to be the wife of Florus, who was a wealthy vine-grower, and in whose house the amphora containing the solidified wine were discovered.

contracted in any other way. Many were the difficulties, not least that of forwarding the infected mosquitoes to London, but this was solved by a stroke of genius. Sambon saw mosquitoes hanging on unconcernedly to old cobwebs fluttered by the wind, and at once, by means of three uprights and three circles of wire, made skeleton tubes and covered them with gauze to imitate the spider's web; in these the malaria-carriers travelled luxuriously.

It was Sambon who first pointed out that Castellani's trypanosome, the cause of sleeping-sickness, is transmitted from the sick to the healthy by the Dusky tsetse fly (*Glossina palpalis*) and that the trypanosome is not merely carried passively as Sir David Bruce believed, but goes through a necessary stage of development within the body of the fly. All his teachings in this were confirmed fully some years later.

In an editorial published in the *Journal of Tropical Medicine*, January 1, 1923, on the occasion of the *Journal's* twenty-fifth year of existence, Sir James Cantlie, a leading authority on tropical diseases, proudly reminds his readers that "of the many subjects which have been brought forward in the pages of the *Journal* from time to time, none stands out more prominently than that of the elucidation of sleeping-sickness. . . . Sambon worked out the transmission of the infection, in London, entirely on epidemiological grounds, his paper appearing in our *Journal* of July 1, 1903. He assumed upon scientific grounds that the parasite went through a cycle of development in the tsetse fly—surely one of the most extraordinary prophecies, based not on guesses, but upon sound scientific truths. Prophecy on scientific lines such as these show the importance of epidemiology, a subject which is sadly neglected in our time. This prophecy was not only right with regard to the agency of the tsetse fly, but pointed out the exact part played by the fly as a necessary fostering host of the parasite

in opposition to a high authority's view, that the tsetse fly acted merely as a passive carrier, just like the vaccine needle, in the transmission of both nagana and sleeping-sickness. That Sambon was right as to the part of host played by the tsetse fly—a fact which was first denied by critics, but subsequently proved—fully justified our original contention that Sambon was correct in publishing it, although we alone in any country did so."

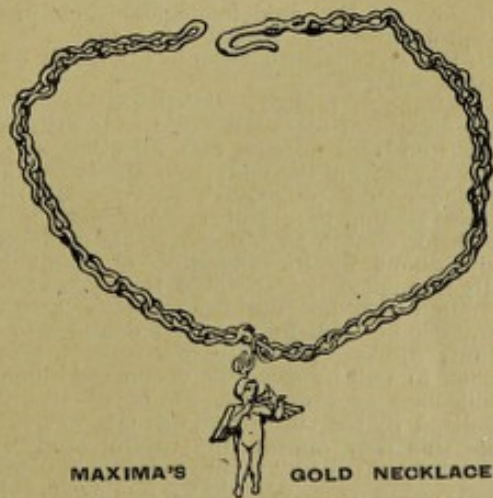
TYPHUS FEVER.

In a paper published in *Allbutt's System of Medicine* in 1907, Dr. Sambon showed that it is the body-louse which transmits typhus fever, and four years later this was proved experimentally in the Tunis Pasteur Institute. This knowledge was of inestimable value during the war.

Dr. J. H. Taylor, of Columbia, U.S. America, in a paper entitled "Dr. Louis Sambon, Scientist and Man," read at the second triennial meeting of the National Association for the Study of Pellagra, October 3, 1912, says: "To our mind, one of his most striking prophetic suggestions deals with our own spotted fever of the Rocky Mountains. Before the publication of Rickett's papers in 1910, Dr. Sambon took exception to Stiles' findings, and in an article written for *Allbutt's System of Medicine* in 1907, favoured the protozoal nature of the disease and its transmission by ticks (now proved). He suggested that the Rocky Mountain fever was but a local variety of typhus fever, and that the latter is not directly contagious, but transmitted by blood-sucking insects, such as the body-louse and the bed-bug. In 1910, Dr. Nicolle, at the Institut Pasteur of Tunis, proved by actual experiments that typhus fever is in very truth conveyed by the body-louse, thus verifying a suggestion Sambon had made, based on a very careful study of the epidemiology of the disease."

SCIENTIFIC RESEARCH.

These examples should suffice to show that Dr. Sambon, like the great Pasteur himself, is one of those men who make new discoveries by means of logical deductions from observations that have conveyed nothing to others. Sir James Cantlie, in calling Dr. Sambon a true pioneer, has said that, apart from Manson, probably there is no one else among those who study tropical medicine who has come forward with so many new ideas or proved himself so true a prophet. Manson himself in 1909 wrote: "Although in my time I have known many medical men, I can confidently assert that I have never met with anyone who has taken so



MAXIMA'S GOLD NECKLACE.

This gold necklace was worn by Maxima, and was among the treasures discovered in the villa of Florus, near Pompeii. The cupid pendant is in the possession of Dr. Sambon.

broad and catholic a view of the etiology of disease or who has brought to bear on this subject so wide and intimate a knowledge not only of the literature but of the various branches of the Physical sciences bearing upon it."



A WINE SHOP SIGN-BOARD.

In a *taberna vinaria*, or wine shop, not far from the Forum in Pompeii was found a terracotta sign-board representing two men carrying a wine amphora suspended from a pole.

THE PELLAGRA PROBLEM.

Dr. Sambon is a brilliant lecturer. I remember a fascinating address he gave at the Royal Society of Medicine. The day after, the President, Sir Humphry Rolleston, wrote to him: "Your address was electric in its influence on the audience and the attractive theme of our inferiority to our ancestors most interesting." The late Professor R. Blanchard, a great French parasitologist, in a letter to *Le Temps*, June 14, 1914, wrote: "Dr. Sambon's researches are well known at the Paris Faculty. Not only do I expound them every year in my lectures, but twice I have had the satisfaction of having them expounded by my excellent friend Dr. Sambon. On the last occasion, Monday, February 8, 1914, he had but recently returned from America, where he had been on behalf of the British Government. He brought back innumerable data which he consented to make known to the vast audience thronging my amphitheatre. During a whole hour he explained the pellagra problem with great elegance of diction, with lucidity and master strokes which aroused the warmest applause. In thanking my learned friend for his splendid address—made extempore, and hence all the more interesting—I insisted on the importance of the epidemiological and parasitological problem he had placed before us."

With this newspaper cutting in my hand, I asked, "What is pellagra?"

Dr. Sambon replied:—"Pellagra is a grave periodic disease of scattered world-wide distribution, characterised by a peculiar rash affecting, as a rule, the exposed parts of the body, severe gastro-intestinal disturbances and progressive nervous and mental symptoms leading to insanity. Until quite recently, it was held, almost as a dogma, that pellagra was brought about by the ingestion of spoiled maize. I boldly impugned the accepted theory, and proved that Indian corn has nothing whatever to do with the causation of pellagra, which I consider to be an infectious disease, probably protozoal, transmitted from sick to well by some blood-sucking midge such as *Culicoides* or *Simulium*. Think of it, insanity transmitted by the stab of an insect! Yet, however strange this may appear, my careful study of the epidemiology of pellagra points to insect transmission as clearly, as inevitably, as do the analogous epidemiological circumstances in better known insect-borne diseases such as malaria, sleeping-sickness and yellow fever."

INTERNATIONAL FAME.

In 1913, Dr. Sambon was invited by the Thompson-McFadden Pellagra Commission to visit the United States and inspect the intensive research work they were carrying out in South Carolina. On his arrival, a conference was improvised. "Never before in the history of America has such a Pellagra Conference been held," says the *Spartanburg Herald*, September 4, 1913, "as that given in honour of Dr. Louis W. Sambon, of London, England, a man world-famed as an epidemiologist and a scientific investigator of international repute."

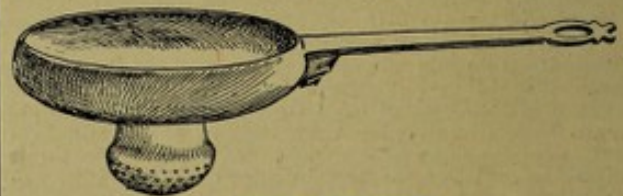
On his return to Europe, Dr. Sambon was invited to lecture on pellagra at the Institut Pasteur in Paris. Professor A. Laveran, the famous discoverer of the malaria parasite, who presided, said: "The researches which Dr. Sambon has been carrying out within recent years in different parts of the world on pellagra, its prevalence, distribution and causation have already yielded very striking and highly interesting results which have signally ruined the exclusive maize theory of the disease."

After lecturing at the Institut Pasteur, Dr. Sambon had the further honour of being asked to address the French Academy of Medicine, and there, as Dr. H. Bianchon relates in the *Figaro*, he was acclaimed as the discoverer of the mode of transmission in both sleeping sickness and typhus, and delivered "*une conférence infiniment intéressante, une argumentation qui est un véritable modèle du genre*" which was enthusiastically applauded.

The pendulum of science constantly swings backwards and forwards, and now the majority of physicians are again prating of deficiency of food and of lack of vitamins as possible causes of pellagra, without giving a thought to the natural history of the disease so thoroughly investigated by Dr. Sambon, who has also shown that, though more or less epidemiologically quiescent and hitherto unrecognised, pellagra is endemic throughout the British Isles.

STUDYING WORM PARASITES IN THE ZOO.

Dr. Sambon's studies on the protozoal and worm parasites affecting man and animals are far too numerous and technical for an outline of his life and work such as this; however, it should be mentioned that for over three years he voluntarily worked at the Gardens of the London Zoological Society, collecting and studying blood and intestinal parasites found in the dead animals brought to the Prosectorium for examination. His researches led to valuable publications, especially on the very little known migrations and activities of the larval forms of worms within the body of their respective hosts; he published several papers on blood parasites of snakes and birds, and a complete monograph



A WINE STRAINER.

This is one of the many kitchen utensils which came from the villa of Florus near Pompeii, now in the possession of Dr. Sambon.

on tongue-worms. These strange, degraded vermiform animals, closely related to the ticks and mites, live as adults in the lungs and air-passages of mammals, reptiles and fishes, while their larval stages are found encysted within the internal organs and tissues of animals preyed upon by the hosts of the mature forms.

Dr. Sambon's object in going to work at the Zoo was the elucidation of human tropical diseases. This may seem strange, but the following was his line of argument: the Gardens contain a large number of animals from the most sundered parts of the tropical zone, and these animals are infested with parasites, or are suffering from diseases peculiar to the tropics, many similar to, some probably identical with, those which affect man there. Their study should throw a flood of light on the many obscure problems of human tropical pathology. His reasoning was correct, and his researches proved wonderfully successful. Indeed, in consequence of his illuminating discoveries, he suggested that a School of Comparative Pathology be established at the Gardens for the purpose of advancing not only animal, but chiefly human, pathology.



AN ALEXANDRINE WINE CUP.

This wine cup was also found in the Villa of Florus, near Pompeii. The Ancient Romans, like the Ancient Egyptians, liked to be reminded of the fact that "in the midst of life we are in death"—hence the skeleton engraved on the wine cup.

IN ADVANCE OF HIS TIMES.

On his return from the West Indies in 1914, Dr. Sambon made two important suggestions. He proposed (1) the formation of a floating school of tropical medicine, and (2) a thorough investigation of tropical diseases of unknown causation to be carried out in the smaller laboratory-like West Indian Islands, together with a serious attempt at the eradication of elephantiasis, leprosy, and pellagra from the otherwise healthy island of Barbados.

With regard to the floating school, we cannot do better than quote from Sir James Cantlie's article on the subject. He says: "The writer well remembers the spirit in which a proposal made by Dr. Sambon was received in the year 1899, when the formation of a School of Tropical Medicine was first thought of in Britain. He argued then that it should take the form of a floating school and laboratory, instead of setting up an establishment on shore, for even at the Albert Dock, in the heart of the shipping, the cases of tropical ailments coming there would be too few to supply material sufficient to teach from, or for investigation purposes. Such a departure from the legitimate teaching of medicine, as by means of a floating school as Sambon then proposed, was received with the hilarity which the ideas of an advanced thinker usually are

when first broached; it has taken twenty years for Dr. Sambon's proposal to be treated as other than a dream, but at the meeting in June, 1919, in the British temple of medicine, it was received with sympathy, approval and acclamation. Let us hope it will not be twenty years more before it finds a fruition and a practical issue."

FIGURING IN *The Age of the Earth*.

Not for nothing did Dr. Sambon, as a boy, study the Vesuvian crater belching forth steam and lava. Here is a thrilling narrative of a descent into the active crater of Stromboli. It is taken from *The Age of the Earth*, published in 1908, by Dr. W. J. Sollas, F.R.S., Professor of Geology in the University of Oxford.

"A steep ash-slope extended from the edge of the crater to the foot of the active cones, and down this, crossing the still smoking cakes of lava which the cones were continually ejecting, my friend Sambon, an experienced and intrepid volcanologist, started to run. Anxious to get a nearer view, I followed him, and as we stopped together he remarked, 'Now you are here, there is but one thing to say—Don't run away, or you will be killed.' 'Run away!' This to an Englishman born in Tipperary! Was it likely? 'As to the four cones to the right,' said Sambon, 'don't mind them; the only one I fear is that little spitfire on the left' (we were close to it!) 'Good; but when it goes off tell me what I am to do.' 'You must look up into the air, and when you see the stones coming down, dodge them!'"

"We waited in the position the front rank takes to receive cavalry. It seemed a long time, but was only five minutes, and then the volcano went off like a cannon, but a cannon with a mouth many yards across. Red-hot stones, sand, and steam were shot out with an appearance remarkably like the flash from a gun, but of longer duration. One glance at this, and then upwards into the air. Down plunged the ragged fragments of half-cooled lava, from a height of 200 feet or more. We had only to stay still without much dodging, but one large mass fell between us, and that is now on its way home to Trinity College Museum. Then a loud cry of 'Look out!' from our friends out of range above; for the scoriae had fallen above and behind us, and were now rolling and bouncing down the loose, steep ash slopes. It must have been a ludicrous sight, the activity we displayed as we hopped, skipped and jumped out of this avalanche, while all the time fine sand and little stones ('lapilli') drove down upon us like a shower of hail. It was over at last, and we rushed up the slope to join our friends, lest another explosion should catch us on the way. Hearty congratulations from them; it was something to have passed unscathed through the volcanic fires."

BEST INFORMED MAN ON FOOD.

Dr. Sambon is probably one of the best informed men on food. In the course of his medical researches, he began to study those famines which often precede or follow epidemics and the way they can be fought; thus he started collecting food and cookery books of all times and places. These now constitute a notable collection. Some of his manuscripts and early printed books of the sixteenth century, with curious woodcuts of culinary utensils, trussed fowls and pot herbs are extremely interesting.

When war broke out he began to study the various food-yielding plants of England, and made experiments to discover how these might be utilised profitably should all imports cease.

HIS WAR WORK.

Dr. Sambon was, indeed, one of the great figures thrown up by the war. Our fighting forces never lost grip of the situation. If Britannia's trident became blunted in the struggle, she still retained sufficient power to hold the seas. Our ships went to and fro—not always safe, and never actually

secure, but they fulfilled their appointed task. They kept up the supplies of food and other necessary things. The nation did not starve.

But there were times when the outlook appeared ominous. The Government had visions of the spectre of starvation, not the people; and those who knew how near a thing it was on more than one occasion trembled in fear, and sought after every device which could render aid if help were needed. Dr. Louis Sambon was one of the men upon whom the Government relied, and behind the scenes he laboured day and night unceasingly.

Of his labours the English people scarcely know anything. An article in the *Manchester Guardian*, purposely vague, a short reference here and there, and that was all. It was not the kind of effort of which details could be published from the housetops. But now no harm can be done to learn something of what was in store for us in the way of Sambon delicacies had Fate so decreed.

SAMBON DELICACIES FOR EVIL DAYS.

The American papers observed less restraint than ours, and having learned about Dr. Sambon's work, cabled glowing accounts. "War Luncheon à la Nebuchadnezzar!" was one of the headlines, and it conveyed some measure of the actual truth, because, availing himself of his knowledge of old Chinese methods in the preparations of medicines and food products, Dr. Sambon had turned fodder crops into the most palatable and nutritious of foods. Clover, for instance, has long been eaten as a vegetable by the Chinese, by the Yuki and Pono Indians of California, and even by the Irish, in time of famine. Dr. Sambon steamed it, made a paste of it, and rolled it out into very thin sheets, which he folded and cut into strips; these bound in skeins keep good for years in paper bags. When cooked and served they look like spaghetti, but are of malachite green, and taste like best French beans.

"It is incredible what delicious foods can be made from plants generally used as fodder for cattle," says Professor Finnbogason, of the University of Reykjavik, in his sketch on Dr. Sambon's life and work. For example, Dr. Sambon treated me to a dish of vermicelli, made of clover, one of the most delicious foods I have ever tasted. He informed me that some of our field grasses would make excellent foods, and I told him that if they proved as palatable as the one he had given me to taste, we should forthwith kill our cattle and eat the grass ourselves. He has made several suggestions about Icelandic food-products which would, without doubt, be of great use to us."

FAMINE FOOD.

Dr. Sambon studied the measures adopted to combat famine in all countries and throughout the ages. He knows all the strange foods that were used to appease hunger and prolong existence, from wild roots, manna, gum and locusts to "mountain-meal," dung, carrion, and the last desperate resort of human flesh. In the Siege of Paris of 1870-71, the famished inhabitants were forced to eat horses, dogs, cats and rats, but far more terrible was the Parisians' plight during the Siege of 1590, when, by advice of Bernardino de Mendoza, then Spanish Ambassador to France, they dug up the bones of the dead, pounded them to dust and used them to make bread. He knows every kind of economic soup ever suggested, be it Sir Francis Eden's soup, a kind of barley broth; Marshal Vauban's concentrated bouillon, made of fried onions and flour; Rumford's mess of barley, herrings, vinegar and samp; or the older and better soup made of fried vegetables and rice or barley by good old Dr. Helvetius about the middle of the eighteenth century. Of bread he has baked every possible kind, such as potato bread, acorn, or banana bread and turnip bread as was made in Essex and other parts of

England when corn failed in 1629 and 1693, and bark and fish-flour breads such as are made in far northern countries.

ENDLESS POSSIBILITIES.

He took, one by one, the various plants cultivated and cultivable in England and explored their possibilities as food. Many of them are valuable foods and at one time were common and welcome at the cottage table, or appeared as standard dishes at our feasts. Later they were supplanted by foreign imports, and abandoned with apparently no better reason than fashion. Amongst them were the succulent roots of rampion, sea holly, salsafy, skirrets and scorzonera; the sweet, hunger-appeasing tubers of heath peas; the tender shoots of wild hops, cotton thistle, willow herb, bracken, purslane, spatling poppy and Thracian bell flower, those of "All Good" or English mercury, those of the milk thistle which surpass the finest cabbage, and those of the Alexanders still found in great plenty by old abbey walls, where they were planted by the monks, who esteemed them greatly; the leaves of chickweed, spotted hawkweed, dandelion, wood sorrel, garden orach, sea colewort, dwarf mallow, garden clary and samphire; the flower-buds of the marsh marigold (which were pickled like those of the caper bush), and those of the safflower, which were mixed in puddings almost as plentifully as currants; the fruit of the dewberry, cloudberry, bilberry, whortleberry and cranberry, and the scarlet hips of the dog-rose, which made an excellent confection. The sea, of course, is a vast reservoir of food material, and from seaweed Dr. Sambon succeeded in making delicious jellies and blancmanges.

CRISP CASSAVA CRUMPET.

The dietetic experience of all countries, according to Dr. Sambon, should be pooled.

Concluding an article on Dr. Sambon's food researches, Mr. Herbert W. Horwill says: "So many admirable food expedients have been utilized in one country and not in another, or in one century and not in another; Dr. Sambon would bring them together for the common good. No one that I have met or heard of possesses such a valuable treasury of information on this subject of vital importance. With him as a companion, one need never starve. If I were cast ashore with him on a desert island, I should be confident of faring more sumptuously every day than on the liner that had just gone down. I should even count on an adequate daily ration if I were lost, in his company, in the middle of the Sahara."

'But is there no fear of being poisoned by eating plants we know little about as foods?' I asked, and Dr. Sambon's surprising answer was that the most deadly plants could be turned into excellent foods. He had himself eaten the Amanita, the deadliest of toadstools, prepared as directed by a sixteenth-century Friar of Vallombrosa, Italy, and would be pleased to eat it again. Why doubt, said he; what else is cassava—a delicious bread of the tropical world—but a most poisonous plant? However, in the far-away past, savage man learned how to express from its amilaceous root the prussic acid which makes it deadly, and surely you know, there is no better tea-cake than a crisp cassava crumpet."

AMAZING VERSATILITY.

Dr. Sambon is a man of amazing versatility. He has written a book on his trip to Iceland, some chapters of which have already appeared in Icelandic, charmingly translated by Professor Finnbogason, who says:—

"I was so fortunate as to make the acquaintance of Dr. Sambon when he was in Iceland at the time of the King's visit, then again in London last autumn, and I think that I have

never met anyone who seemed to me to be so wonderfully well-informed. His ancestry and his upbringing doubtless have had much to do with this. As we have seen, he early began to read in Nature's mighty book, and, indeed, appears to be incredibly well versed in it. But he is an antiquarian also, with a living interest in the history of civilization, both industrial and scientific. I have, for example, seen at his house a complete MS on the History of the Lamp, another, in preparation, dealing with the intercourse between the Old World and the West in Ancient Times. . . . He reminds one of the words of Hippocrates: 'Many excellent discoveries have been made in the past centuries, and many doubtless will follow, if capable men, fully cognisant of the old discoveries, will but make them the starting point of their own researches.' This Dr. Sambon does. No matter what the subject of his study, he brings to bear upon it knowledge from all the ages, not only scientific knowledge, but popular tradition also frequently the result of dearly-bought experience. These comparisons, however, do not burden his writings, any more than food-stuffs do our vital fluids. I have never found this more true than when reading his papers and hear him assert that the highest art is to make the old new, and the distant near. Thus does the spirit conquer time and space."

MEDICAL ARCHAEOLOGY.

Dr. Sambon naturally attaches much importance to the history of medicine, and in 1893 he, as a member of the Medical Exhibition held in connection with the 11th International Medical Congress in Rome, organised an historical section. Professor Baccelli, president of the congress, was an enthusiastic archaeologist, and at the time, happened to be Minister of Public Instruction. He approved of Sambon's suggestion, and gave him authority to select from the Government museums and libraries any object he might consider necessary, to add to his own vast and interesting collection. This was the first exhibition of the kind ever held. It was a great success. Physicians from all parts of the world found in it, not the strange curiosities they had expected, but monumental proof of an unsuspected medical knowledge thousands of years old, yet wider, more enlightened, more helpful than theirs. Many of them were surprised to learn that the surgeons of antiquity performed tracheotomy, lithotomy and paracentesis; that they opened the abdominal cavity to extirpate the ovaries, the womb, the unborn child, or some tumour; that they operated for cataract, resected the ribs and trepanned the skull; that they used the catheter, the pessary, the hypodermic needle and the trivalve speculum; that they were proficient in orthopaedics and masters in restorative surgery; that gynaecology, the knowledge of female diseases, has only recently gained that perfection it had attained in the days of Soranus; that in hygiene we are still far behind the ancients; and that in preventive medicine we are only just beginning to understand the wonderful sagacity of the old laws, provisions and measures.

THE EXCAVATIONS AT POMPEII. Discovery of a Wine Shop of A.D. 79.

PROFESSOR AURIGEMMA, who has supervised the excavating of a section of the "Street of Abundance," Pompeii, says quite a different light has been thrown on the life of the ancient inhabitants who were overwhelmed by the eruption of Vesuvius in A.D. 79. Excavating had been done, says the Naples correspondent of the *Daily Mail*, with the utmost care, horizontally, by strata, so that not a single piece of stone, brick, or cement belonging to the houses has been lost, and everything has been left in its proper place.

It has been discovered that the Pompeian houses had balconies, pergolas, covered terraces with colonnades, or, in place of these, overhanging roofs over the street. This gave the pavement protection against the rain in winter and the sun in summer, and protected the entrances of the various shops, of which there are several in this section of the street.

A POMPEIAN "BAR."

Life in ancient Pompeii must have been very similar to present-day life in Naples. Small statuettes and household articles are being placed exactly where they were found. Some of the house doors were left half open during the flight of the inhabitants, and others were bent by the weight of the ashes and pumice stone. The shop of a dealer in drinks (a Pompeian "bar") is practically intact, and the various urns, glasses, and other vessels are laid on the bench ready for use, while at the end of the bench itself is a cauldron where the drinks were kept hot. A goldsmith's house is remarkable, with several beautiful rooms, one with wonderfully artistic frescoes of mythological subjects.

VINES PLANTED AS OF YORE.

A very large villa has been discovered. It has a beautiful aquarium, with a fountain and a little cascade, the water passing through the mouth of a mask which is held by a deliciously sculptured marble child. The aquarium is surrounded by columns which support a pergola, and vines have been planted so that next autumn that part of the villa will look as if it never had suffered from destruction. In the same villa there is a room with frescoes representing the first and second wars of Troy.

A BRITANNIC WAR-CHARIOT.

The armamentarium, or watch-house, of the municipal militia has also been discovered. It consists of a large room opening upon the street. Outside it are two paintings of trophies, a naval one with an anchor on the left, while on the right there is a military trophy, the main feature in it being the painting of a Britannic war-chariot, an "essedum." It is probable that the trophy was painted at the time of Julius Caesar. Still another house has a beautiful subterranean apartment with a ceiling in bas-relief. Five corpses have been found near the windows in this house, and casts have been taken which show the fate they met with.

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