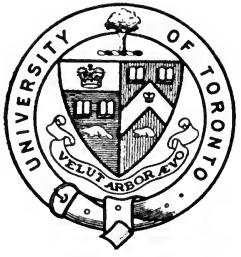

THE

FLUCTUATIONS OF GOLD

BY

BARON ALEXANDER VON HUMBOLDT

AUTHOR OF "KOSMOS," ETC.

THE LAW OF PAYMENT

BY

FRANCOIS GRIMAUDET

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TRANSLATED INTO ENGLISH, REVISED AND ANNOTATED

BY

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VON HUMBOLDT'S

FLUCTUATIONS OF GOLD.

CHAPTERS.

TRANSLATOR'S PREFACE.

The four great æra-making books on the subject of the Precious Metals were those of William Jacob, 1831, Baron Alex. von Humboldt, 1838, Michel Chevalier, 1857, and Alex. Del Mar, 1880 and (2d ed.) 1900. All of these works have been translated into several languages and all of them are well known except that of Von Humboldt, a circumstance which is only to be ascribed to its not having hitherto been translated into English. Although it was written upwards of sixty years ago Von Humboldt's work has its present usefulness. Mr. Jacob having satisfied the capitalist class that the supplies of the precious metals, which had greatly fallen off during the Spanish American revolutions, were not likely to be renewed, it was thrown into great alarm by the unexpected discoveries of gold in Russia and North America. It was especially to allay this alarm that Von Humboldt's work was prepared, for it proved that these new discoveries would hardly more than fill the void which had been occasioned by the previous arrest of supplies. The event fully justified this opinion. In point of fact there was a steady decrease of coined money throughout the commercial world until California and Australia were unexpectedly opened some fifteen years after Von Humboldt's work appeared. During this interval the scarcity of the precious metals enabled the capitalist class to largely substitute their own credit (by means of bank notes) in the place of coins, a device which, while it greatly enhanced their wealth and importance, subjected the rest of mankind to that long interval of poverty and retrogression which followed the bankruptcies of 1836–'39.

But Von Humboldt's work, though it was addressed to the capitalist class, was rich in materials and suggestions that belong to the general inheritance of mankind. A mind so amply stored could scarcely fail to impart something of value to all classes of men. Among the many useful lessons that he taught was one that might have been advantageously remembered when the California and

Nevada scares urged the capitalists to promote that demonetization of one of the great precious metals from whose disastrous effects it has scarcely yet recovered. "*Any increase in the production of the precious metals which our imagination could call into existence*" says our illustrious author "*would seem infinitedly trifling compared with the accumulation of thousands of years now in circulation, especially when we consider the respective proportions devoted to coins and wrought up into the arts for useful purposes.*" It is a pity that this opinion of their greatest engineer, naturalist and philosopher had so little weight with the German financiers who promoted the imperial coinage law of December 4th, 1871.

To undo the mischief which has been done would not recoup those who lost their fortunes by its demonetization, but a new class of persons wholly unentitled to such a gratuity. But there is a higher question involved than justice to individuals. That question relates to the Public Safety, which Grimaudet, in his exhaustive "Law of Payment" clearly proves is imperilled by any monetary system which pledges the government to the payment of special moneys, whether of gold, silver, or any other metal. Such a system can only be safely employed by a nation that commands the commerce of the world and its supplies of metal. Should this conclusion arrest public attention, Von Humboldt's admirable monograph will be ensured a new lease of life.

New York, May, 1900. WILLIAM MAUDE.

LIFE OF HUMBOLDT.

Friedrich Heinrich Alexander von Humboldt, baron, a German mining engineer and naturalist, the most distinguished savant of the 19th century, was born in Berlin, September 14th, 1769, died there, May 6th, 1859. He was less than ten years old at the death of his father, who had been adjutant of Duke Ferdinand of Brunswick in the Seven Years' war, and afterward a Prussian royal councillor. He and his elder brother William were educated at home, with special care in the natural sciences, and heard private lectures from Fischer in mathematics, Engel in philosophy, and Dohm in politics. In 1787 he studied at the University of Frankfort-on-the-Oder, returned to Berlin in the following year, and applied himself to the technology of manufactures and to the Greek language. An acquaintance with the young botanist Willdenow led him to gratify his tastes in the study of the cyptogamous plants and of the numerous family of grasses. He passed a year (1789–'90) at the University of Göttingen, studying philology under Heyne, and extending his knowledge of natural history by the instructions of Blumenbach, Beckmann, Lichtenberg, and Link, and by excursions on the Hartz mountains and the banks of the Rhine. His first literary attempt, on the Art of Weaving among the Greeks, was never published. His first published work, the fruit of an excursion from the university, was: *Ueber die Basalte am Rhein, nebst Untersuchungen über Syenit und Basansit über Alten* (Berlin, 1790.) A rapid but very instructive journey which he made in 1790, in company with George Forster, through Belgium, Holland, England, and France, gave him a sudden passion for seafaring and a desire, which he constantly cherished, to visit the tropics. He returned to Germany with the purpose of devoting himself to finance as a business, and repaired to a mercantile academy at Hamburg, where he heard lectures on the functions of money, learned bookkeeping, familiarized himself with counting-house affairs, and practised the modern languages with the numerous students from various parts of Europe. He also came in contact with Klopstock,

Voss, Claudius, and two Stolbergs. On a visit to his mother in the the following year he obtained permission to change his career and to engage in practical mining; and he went to the mining academy at Freiberg, where for eight months he enjoyed the private instruction of Werner, and the friendship of Freiesleben, Von Buch, and Del Rio, the last of whom he found twelve years later settled in Mexico. He wrote while there a description of the subterranean flora, and an account of his experiments on the colour of plants withdrawn from the light and surrounded by irrespirable gases, entitled *Flora Subterranea Fribergensis, et Aphorismi ex Physiologia Chemica Plantarum*, which first appeared in 1793. With Freiesleben he made the first geognostic description of one of the Bohemian mountain ranges.

In 1792 Humboldt was appointed by the minister Von Heinitz assessor in the mining department, and accompanied that statesman to the margraviate of Baireuth, where he was promoted to the post of superior mining officer in Fichtelgebirge, in the Franconian principalities; and he took up his residence in a mountain hamlet near Naila. This office he held five years, (1792–'7), with numerous interruptions. In 1793–'4 he explored the mining districts in Upper Bavaria, Galicia, and Southern Prussia. In 1794 he accompanied the baron von Hardenberg to Frankfort at his solicitation, and was employed in his cabinet correspondence and in missions to the headquarters of Field Marshal von Möllendorf. On his return he experimented on the nature of fire-damp in mines, and made dangerous researches with a lamp and a respiratory machine constructed on the principle of Beddoes, in spaces artificially filled with irrespirable gases. In 1795 he made a geognostic journey through the Tyrol, Lombardy, and Switzerland, gaining instruction from Volta in Como and Scarpa in Pavia. In 1796 he was sent on a diplomatic mission to the headquarters of Gen. Moreau in Swabia, and was urged by Gen. Desaix to abandon his intended visit to the tropical regions of the new world in order to attach himself to the already meditated French expedition to Egypt. From the time when he first heard of Galvani's discovery he had accumulated materials for his work *Ueber die gereizte Muskelund Nervenfaser, nebst Vermuthungen über den chemischen Process des Lebens in der Thier-und Pflanzewelt* (2 vols., Berlin, 1797–'9). He also familiarized himself with practical astronomy, especially with the use of the sextant for determining geographical positions. On the death of his mother he resolved to prosecute his purpose of a great scientific expedition. Leaving Bai-

reuth, in 1797, he passed three months at Jena, in intimate relations with Goethe and Schiller, studied anatomy under Loder, and then began a second journey to Italy, with a desire to see the volcanoes Vesuvius, Stromboli, and Etna, before his departure from Europe. The revolutionary condition of Italy made his purpose impracticable, and he passed the winter in Saltzburg and Berchtesgaden, occupied with meteorological observations. There he accepted the invitation of Lord Bristol to accompany him on an excursion to Upper Egypt, intending also to proceed to Syria and Palestine. He visited Paris to procure the requisite scientific instruments, when, in the month (May, 1798) of Napoleon's departure from Toulon for Alexandria, he heard that Lord Bristol was arrested at Milan charged with having secret political designs in Egypt. Remaining in Paris, he was received with favour by the most distinguished scholars, and became intimate with the future companion of his travels, the young botanist Bonpland. At this time the members of the institute, the professors of the *jardin des plantes*, and the whole learned public were interested in the voyage of circumnavigation which the Directory had decreed and put under the command of Capt. Baudin. The expedition was to explore the eastern and western coasts of South America from Buenos Ayres to Panama, to touch at many islands of the South Sea, New Zealand and Madagascar, and to return by the cape of Good Hope. Humboldt received from the Directory permission to join the expedition with his instruments, and to leave it when and where he wished. After several months of suspense, the necessities of war obliged the government to postpone indefinitely the whole undertaking. Thus disappointed in his hopes of travel, he accepted an invitation to accompany the Swedish consul Skjöldebrand, who had been appointed by his court to carry presents to the Dey of Algiers, and he intended to proceed by the way of Tunis to Egypt. The delay of the Swedish frigate, and the news from Barbary that during the war between the Turks and French every person arriving from a French port was thrown into prison, thwarted this purpose.

He, therefore, in company with Bonpland, resolved to spend the winter in Spain; and passing leisurely through Perpignan, Barcelona, Montserrat, and Valencia, making botanical, astronomical, and magnetic observations by the way, they reached Madrid in February, 1799. Under the patronage of the first secretary of state, Don Mariano Luis de Urquijo, he was received with distinguished favour at court; and from merely personal confidence, since he was recommended by no other court, all the Spanish possessionsin America

and the East Indies were opened to him. He received two passports, one from the First secretary of state, the other from the Council of the Indies, which permitted him the free use of all instruments for astronomical and geodetic observations, the measurement of mountains, the collection of objects of natural history, and investigations of every kind that might lead to the advancement of science. Such extensive privileges had never before been granted to any traveller. He left Madrid, measuring the elevations on his way through Old Castile, Leon, and Galicia, and on June 5th, 1799, embarked with Bonpland in the frigate Pizarro from Corunna. Easily avoiding the English cruisers, they reached Teneriffe June 19th, where they tarried to ascend the peak and to make many observations on the natural features of the island, and arrived at Cumana, in Venezuela, July 16th, 1799. After exploring the Venezuelan provinces for eighteen months, residing the latter part of the time at Caracas, they set out for the interior from Puerto Cabello over the grassy plains of Calaboza to the river Apure, a branch of the Orinoco. In Indian canoes, consisting of hollow trunks of trees, they made their way to the most southern post of the Spaniards, Fort San Carlos, on the Rio Negro, within two degrees of the equator. They could have advanced only by taking their boats over land, and therefore returned through the Cassiquiare to the Orinoco, which they followed to Angostura, proceeding thence to Cumana. This journey through wild and unfrequented regions was the first which furnished any positive knowledge of the long disputed bifurcation of the Orinoco. They sailed to Havana, but after a few months hastened to seek some southern port, hearing a false report that Baudin, whom they had promised to join, had appeared on the western coast of South America. From Batabano, on the south of Cuba, they embarked in March, 1801. The season of the year forbade the execution of their plan of going to Carthagena and Panama, and they sailed for fifty-four days up the river Magdalena to Honda, in order to reach the high plateau of Bogotá. Thence they made excursions to the most remarkable natural features of the surrounding country. In September, 1801, in spite of the rainy reason, they began to journey southward, passed Ibagua, the Cordillera de Quindiu (at an altitude of 11,500 feet, their highest encampment by night), Cartago, Popayan, Almaguer, and the lofty plain of Los Pastos, and reached Quito after experiencing the greatest difficulties for four months, January 6th, 1802. The next five months passed in comprehensive investigations of the elevated vale of Quito, and of the chain of snow-capped volcanoes

which surround it. Favoured by circumstances, they ascended some of these to heights not before attained. On Chimborazo they reached (June 23d, 1802) the unprecedented altitude of 18,096 feet, about 3276 feet higher than the point reached by La Candamine on the Corazon in 1738, and they were prevented only by a deep crevasse from advancing to the summit. They were joined at Quito by an enthusiastic young French scholar, Carlos Montufar, son of the marquis of Selvalegre, who attended them throughout their wanderings in Peru and Mexico and back to Paris. Over the pass of the Andes in the paramo of Assuay, by Cuenca and Loja, they descended into the vale of the upper Amazon at Jaen de Bracamoras, and traversing the plateau of Caxamarca, by the mountain city Micuipampa (11,140 feet high, near the silver mines of Chota), they reached the western declivity of the Peruvian Andes. From the summit of Guangamarca (9000 feet high) they enjoyed for the first time the long-sought view of the Pacific. They reached the coast at Truxillo, and travelled through the sandy deserts of lower Peru to Lima. After one of the principal designs of their Peruvian journey, the observation of the transit of Mercury over the Sun, was fulfilled, they embarked from Callao in December, 1802, and after a wearisome voyage reached Acapulco in Mexico, March 23d, 1803. They arrived in the city of Mexico in April, remained there a few months, and then visited Guanajuato and Valladolid, the province of Michoacan near the Pacific coast, and the volcano of Jorullo, which had first broken out in 1759, and returned by the way of Toluca to the capital. They remained in that city, then distinguished for wealth and the culture of its better class of citizens, long enough to arrange their rich collections and to reduce their various observations to order. In January, 1804, having measured the volcano of Toluca and the Cofre de Perote, they descended through the oak forests of Jalapa to Vera Cruz, where they escaped from the prevalent yellow fever. They compared their barometric measurement of the eastern declivity of the highland of Mexico with that which they had formerly completed of the western declivity, and made a profile of the country from sea to sea, the first that was ever given of any entire country. On March 7th, 1804, Humboldt sailed from the coast of Mexico for Havana, where during a two months' residence he completed the materials for his *Essai politique sur l'ile de Cuba* (Paris, 1826). He embarked thence with Bonpland and Montufar for Philadelphia, enjoyed a friendly reception at Washington from President Jefferson, and leaving the New World landed at Bordeaux, August 3d, 1804, having spent

about five years in America, and gained a larger store of observations and collections in all departments of natural science, geography, statistics, and ethnography, than all previous travellers.

Humboldt selected Paris for his residence, no other city offering so many aids to scientific study or having so many distinguished savants, and remained there till March, 1805, arranging his numerous collections and manuscripts, and experimenting with Gay-Lussac in the laboratory of the polytechnic school on the chemical elements of the atmosphere. He was accompanied by Gay-Lussac, who exerted a lasting influence on his chemical studies, in a visit to Rome and Naples, and also by Von Buch on his return through Switzerland to Berlin, where, after an absence of nine years, he arrived November 16th, 1805. In the hope of modifying the ignominious treaty of Tilsit by negotiation, the government resolved in 1808 to send the young brother of the king, Prince William of Prussia, to the emperor Napoleon at Paris. During the French occupation of Berlin Humboldt had been busy in his garden making hourly observations of the magnetic declination, and he now unexpectedly received the command of the king to accompany Prince William on his difficult mission, and to aid him by his greater knowledge of influential persons and experience of the world. As the condition of Germany made it impracticable to publish there his large scientific works, he was permitted by King Frederic William III., as one of the eight foreign members of the French academy of sciences, to remain in Paris, which was his residence, excepting brief periods of absence, from 1808 to 1827. There appeared his *Voyage aux régions équinoxiales du nouveau monde* (3 vols. fol., with an atlas, Paris, 1809–'25; translated into German, 6 vols., Stuttgart, 1825–'32). When in 1810 his elder brother resigned the direction of educational affairs in Prussia to become ambassador at Vienna, the former post was urged upon Humboldt by Hardenberg; but he declined it, preferring his independence, especially as the publication of his astronomical, zoological, and botanical works was not yet far advanced. Though the position was one of the highest at the court of Berlin, he chose to remain in the society of the illustrious men who then made Paris the centre of intellectual culture. There he became one of the celebrated *Société d'Arcueil.* He had already decided upon a second scientific expedition through upper Idia, the region of the Himalaya, and Tibet, in preparation for which he was diligently learning the Persian language under Sylvestre de Sacy and André de Nerciat. He accepted from Count Romanzoff in 1812 an invitation to accompany a Russian

expedition over Kashgar and Yarkand to the highlands of Tibet, but the outbreak of war between Russia and France caused the abandonment of the plan. The political events between the peace of Paris and the congress of Aix la Chapelle gave him occasion for several excursions. He went to England in the suite of the king of Prussia in 1814, again in company with Arago when his brother was appointed ambassador to London, and again in 1818 with Valenciennes from Paris to London and from London to Aix la Chapelle, where the king and Hardenberg wished to have him near them during the congress. He also accompanied the king to the congress of Verona and thence to Rome and Naples, and in 1827, at the solicitation of the monarch, gave up his residence in Paris, and returned by way of London and Hamburg to Berlin, where in the following winter he delivered public lectures on the cosmos.

In 1829 began a new æra in his active career. He undertook, under the patronage of the czar Nicholas, an expedition to northern Asia, the Chinese Soongaria, and the Caspian Sea, which was magnificently fitted out by the influence of the minister, Count von Cancrin. The exploration of mines of gold and platinum, the discovery of diamonds outside of the tropics, astronomical and magnetic observation, geognostic and botanical collections, were the principal results of this undertaking, in which Humboldt was accompanied by Ehrenberg and Gustav Rose. Their course lay through Moscow, Kazan, and the ruins of old Bulghari to Ekaterinburg, the gold mines of the Ural, the platinum mines at Nijni Taghilsk, Bogoslovsk, Verhoturye, and Tobolsk, to Barnaul, Schlangenberg, and Ustkamengorsk in the Altai region, and thence to the Chinese frontier. From the snow-covered Altai Mountains the travellers turned toward the southern part of the Ural range, and, attended by a *pulk* of armed Cossacks, traversed the great steppe of Ischim, passed through Petropavlovsk, Omsk, Miask, the salt lake of Ilmen, Zlatoosk, Taganay, Orenburg, Uralsk (the principal seat of the Uralian Cossacks), Saratov Dubovka, Tzaritzyn, and the beautiful Moravian settlement Sarepta, to Astrakhan and the Caspian Sea. They visited the Calmuck chieftain Sered Dshab, and returned by Voronezh, Tula, and Moscow. The entire journey over 10,000 miles was made in nine months; its results are given in Rose's *Mineralogisch-geognostische Reise nach dem Ural, Altai und dem Kaspischen Meere* (2 vols., Berlin, 1837–'42), and in Humbold's *Asie centrale, recherches sur les chaines de montagnes et la climatologie comparée* (3 vols., Paris, 1843; translated into German by Mahlmann, 2 vols., Berlin, 1843–'4). It extended the knowledge

of telluric magnetism, since in consequence of it the Russian imperial academy established a series of magnetic and meteorological stations from St. Petersburg to Pekin, an example which was afterward followed by the British government in the southern hemisphere. The convulsions of 1830 gave a more political direction to Humboldt's activity for several years, without interrupting his scientific career. He had accompanied the crown prince of Prussia on May, 30th, 1830, to Warsaw, to the last constitutional diet opened by the emperor Nicholas in person, and he attended the king to the baths of Töplitz. On the news of the French revolution and the accession of Louis Philippe, he was selected, partly on account of his long intimacy with the house of Orleans, to convey to Paris the Prussian recognition of the new monarch, and to send political advices to Berlin. The latter office fell to him again in 1834–'5, and he was called upon to fulfil it five times in the following twelve years, residing four or five months in Paris on each mission. To this period belongs the publication of his *Examen critique de la géographie du nouveau continent* (5 vols., Paris, 1835–'8; translated into German by Ideler, 5 vol., Berlin, 1836 *et seq.*), and *The Fluctuations of Gold*, which was published both in Paris and Berlin. He made a rapid journey with King Frederic William IV. to England in 1841, to attend the baptism of the Prince of Wales, to Denmark in 1845, and resided in Paris several months in 1847–'8, from which time he lived in Prussia, usually in Berlin, pursuing his scientific labour in his advanced age with undiminished zeal and energy.

Humboldt is distinguished, as a man of science, for the comprehensiveness of his researches, and especially for the skill and completeness with which he connected his own observations with all the stores of previous knowledge, and for the clearness with which he expounded facts in their relations. This tendency appeared in one of his earliest works on the contractions of the muscles and nerves, in which, after the progress of physiology for more than half a century, may still be seen the sagacity of his experiments on galvanism, and the truth of most of the inferences which he drew. In his travels he measured elevations, and investigated the nature of the soil and the thermometrical relations, at the same time collecting herbariums, and founding, by a combination of the materials in his hands, the new science of the geography of plants. Linnæus and some of his successors had observed some of the more palpable phenomena of the migrations of plants, without, however, considering the elevation or temperature. It remained for Humboldt to bring to-

gether the vast series of facts collected from the most remote points, to combine them with his own observations, to show their connection with the laws of physics, and to develope the principles in accordance with which the infinitely numerous forms of the vegetable world have been spread over the earth. He was the first to see that this distribution is connected with the temperature of the air, as well as with the altitude of the surface on which they grow, and he systematized his researches into a general exposition of the laws by which the distribution of plants is regulated. Connected with this subject he made those extensive investigations into the mean temperature of a large number of places on the surface of the globe, which led to the drawing of the isothermal lines, so important in their influence in shaping physical geography and giving accuracy to the mode of representing natural phenomena. Before Humboldt we had no graphic representations of complex natural phenomena, which make them easily comprehensible, even to minds of moderate cultivation. It is not too much to say that this mode of representing natural phenomena has rendered it possible to introduce into the more elementary works the broadest generalizations from the investigations of Humboldt in South America. By associating many important questions with botany, he made it one of the most attractive of the natural sciences. He showed the powerful influence exercised by vegetable nature upon the soil, upon the character of a people, and upon the historical developement of the human race. This new view of the connection between the physical sciences and human history opened a path which has been followed by a school of subsequent investigators, notably Mr. Buckle, with novel and important results. Though wholly free from mystical meanings and obscure phraseology, his works are marked by poetical conceptions of nature wherever it is his aim to present broad and complete pictures. His delineations of the tropical countries give delight to readers who have no special knowledge or interest in natural history. At the beginning of this century even the coasts of the immense Spanish colonies in America were scarcely known, and but little confidence was placed in the best maps. More than 700 places of which he made astronomical measurements were calculated anew by Oltmann, whose work (2 vols., Paris, 1808-'10) forms the 4th part of Humboldt's "Travels." He himself made the map of the Orinoco and Magdalena, and the greater part of the atlas of Mexico. It was with the barometer in his hands that he travelled from Bogotá to Lima, ascended the peaks of Teneriffe, Chimborazo, and numerous other mountains, and he made 459 measurements of

altitude, which were often confirmed by trigonometrical calculations. His measurements in Germany and Siberia, combined with those made by othor travellers, furnished valuable results to geography, and were the foundation of theories of the dispersion of plants and animals. Climatology was intimately connected with his researches. By his daily record of the meteorological, thermometrical, and electrical phenomena of the countries through which he passed, he gave a model to Boussingault, Pentland, and others, and instituted the science of comparative climatology. Originally educated to be a geologist, he early emancipated himself from the prevailing views of the last century, and not only made special observations, but gave comparative views of the geological formation of continents. He was the first to entertain the idea of estimating the average elevation of continents above the sea, previous geographers and geologists having considered only the altitude of mountain chains and of the lower lands. His principal works in this department are: *Physique generale et geologie* (Paris, 1807); *Essai géognostique sur le gisement des roches dans les deux hemispheres* (Paris and Strasbourg, 1823-'6); and *Fragments de geologie et climatologie Asiatique* (2 vol., Paris, 1831; translated into German by Löwenberg, Berlin, 1832). The phenomena of the volcanoes of South America and Italy he keenly observed and explained. In connection with Bonpland, he made very important observations on the sites, uses, and structures of plants, which he also regarded in their relations to man and from a politico-economical point of view. His principal botanical works are on the geography of plants: *Essai sur la geographie des plantes* (Paris, 1805), *De Distributione Geographica Plantarum secundum Cœli Temperiem et Altitudinem Montium* (Paris, 1817). The rich herbarium collected by him and Bonpland contained more than 5000 species of phanerogamous plants, of which 3500 were new. They were arranged and illustrated by Humboldt, Bonpland, and Kunth, in the following works, which form the 6th part of his "Travels:" *Plantes equinoxiales recueillies au Mexique et dans l'île de Cuba* (2 vols., Paris, 1809 *et seq.*, with 144 plates); *Monographie des melastômes et autres genres du même ordre* (2 vols., Paris, 1809-23, with 120 colored plates); *Nova Genra et Species Plantarum*, &c. (7 vols., Paris, 1815-'25, with 700 plates); *Mimoses et autres plantes legumineuses du nouveau continent* (Paris, 1819-'24, with 60 plates); *Synopsis Plantarum*, &c. (4 vols., Strasbourg and Paris, 1823-'6); *Revision des graminees* (2 vols., Paris, 1829-34, with 220 colored plates). The zoological results of his travels are contained in his *Recueil d'observations de zoologie et d'anatomie comparee* (2 vols., Paris, 1805-'32), in the publication of

which he was aided by Cuvier, Latrielle, and Valenciennes. Another costly work, the *Vues des Cordillères et monuments des peuples indigènes de l'Amerique* (Paris, 1810, with 69 plates), contains elaborate pictures of the scenery of the Andes and of the monuments of the ancient civilization of the aborigines. They were the first examples of landscapes adhering strictly to the truth of natural history. The study of the great architectural works of the ancient Mexicans and Peruvians led Humboldt to investigations of their language, myths, religions, records, early culture, and migrations. Statistics and ethnography were greatly advanced by him, he being the first foreigner to whom the archives of the colonies were opened. In this department his treatment was peculiar, for his *Essai politique sur le royaume de la Nouvelle Espagne* (2 vols., Paris, 1811) contained statistics united with the facts of natural history, and presented various doctrines of political economy from a new point of view. Especially original and influential were his reflections on the culture of the soil under different climates and on its effects upon civilization, and on the circulation of the precious metals. Beside his general work, he made many special investigations, as his treatise on the geography of the middle ages, in which he appears at once as historian, astronomer, and savant, his chemical labours with Gay-Lussac, his system of isothermal lines, his experiments on the gymnotus and on the respiration of fishes, and numerous contributions to physical geography.

Soon after his return from America he gave a general sketch of the results of his inquiries in his *Ansichten der Natur* (Stuttgart, 1808), in which he aimed to present a picture of the physical world exclusive of everything that relates to the turmoil of human society and the ambitions of individual men; and in the evening of his life he determined to give a systematic view of the results of his investigation and thought in the whole domain of natural science. This was the design of his "Kosmos" (4 vols., Stuttgart, 1845-'58), which explains the physical universe according to its dependencies and relations, grasps nature as a whole, moved and animated by internal forces, and by a comprehensive description shows the unity which prevails amid its variety. It was translated into all the European languages, and has been without an equal in giving an impulse to natural studies. Imitations, explanations, complements, and confutations have since appeared in great numbers. The best works designed to give it a more general and effective character were by Schaller, Cotta, and Bromme. To the personal influence of Humboldt is due nearly all that the Prussian government did for science in the latter part of his

life. He obtained the privileges of a citizen for many a young student, was the protector of many unfortunate scholars, and by an irreproachable and generous life obtained the love and esteem of all men of learning, while he enjoyed the favour of princes. The personal habits of Humboldt were very peculiar. He slept but four hours, rose at 6 in the winter and 5 in the summer, studied two hours, drank a cup of coffee, and returned to his study to answer letters, of which he received at a low estimation 100,000 annually. From 12 to 2 he received visits, and then returned to study till the dinner hour. From 4 till 11 he passed at the table, generally in company with the king, but sometimes at the meeting of learned societies, or in the company of friends. At 11 he retired to his study, and his best books are said to have been written at midnight. He died after an illness of about two weeks, and in the long procession which followed his funeral car to the tomb, were the ministers of state, generals of the army, professors in the university, officers of the court, the diplomatic corps, academicians, students and citizens; and the coffin was received at the church by the prince regent and the princes of Prussia. "The influence he exerted upon science," says Agassiz, "is incalculable. With him ends a great period in the history of science, a period to which Cuvier, Laplace, Arago, Gay-Lussac, De Candolle, and Robert Brown belonged."

FLUCTUATIONS OF GOLD.

I. THE GOLDEN REGIONS OF THE EARTH.

HERODOTUS remarks (Thalia, CXVI,) that in the unequal distribution of the earth's treasures, some of the most valuable productions were conferred upon the remotest regions. This observation was not founded on the gloomy feeling that happiness dwells far from us; it expressed the fact that the Greeks and other inhabitants of the temperate zone, were dependent on distant lands and commercial intercourse for gold. When, by means of the Phœnicians, the Edomites on the Gulf of Acaba, the Egyptians and the Romans, the distant coasts of Southern Asia came gradually to be explored, the productions of those regions were received more directly; and in the fertile imagination of man the metallic treasures of the earth were driven back further and further toward the east. Thrice have the Arabians, during the æras of the Lagidæ and the Cæsars, as well as at the period of the Portuguese discoveries, pointed out to the western world the route to India. Ophir (the Dorado of Solomon) was placed to the eastward of the Ganges. There also was supposed to be situated Chrysé, so long sought for by travellers, which was considered, at one time as an island, at another, as part of the Golden Chersonesus. The quantities of gold, which according to John Crawford, are supplied by Borneo and Sumatra, even at the present day, explain the ancient celebrity of those regions. Near to Chrysé, the land of gold, (according to the Greek ideas of a systematized geography,) must symmetrically be situated a silver island, Argyre, in order to unite, as it were, the two precious metals. Solomon more wisely separated the Indian Ophir and the Iberian Tartessus. The geography of the middle ages, reflected, under various forms, the geographical fables of classical antiquity. In the works of the Arabians, Edrisi and Bahai, we find mentioned, at the extremity of the Indian Ocean, an island (Salahet) possessing silver ores; and near it, Saila (not to be confounded with Ceylon, or Serendib,) where dogs and apes were said to wear golden collars.

However, in determining the proper region of gold, and of all the precious productions of the earth, the idea of remote distance was mixed up with that of tropical heat. "So long," writes in 1495, Mossen Taime Teener, a Catalonian lapidary, to Christopher Columbus, "as your excellency does not find black men, you must not look for great things, real treasures, such as spices, diamonds and gold." This letter was recently found in a book printed at Barcelona in 1545, and bearing the singular title of "Sentencias Catolicos del Divo Poeta Dante." Yet the gold productiveness of the Ural mountains, which extends northward to where the snow scarcely thaws during the summer months, and the diamonds, which (during my Siberian expedition, made at the request of the Emperor Nicholas, in 1829,) were discovered by two of my companions on the European declivity of the Ural, near the 60th degree of latitude, do not bear out the connection of gold and diamonds with tropical heat and coloured men. Christopher Columbus, who ascribes a moral and religious value to gold, "because," as he says, "whoever possesses it obtains what he will in this world, nay, even (by means of masses) brings many souls into paradise," Columbus was entirely devoted to the system of the lapidary Teener. He looked for Zipangu (Japan) which was given out as the gold island Chrysé; and while sailing (14th of November, 1492,) along the coasts of Cuba, which he took for Cathay, a part of the Asiatic continent, he writes, in his log-book: "From the great heat which I suffer, the country must be rich in gold."

Thus did false analogies cause to be forgotten what Herodotus had recorded of the metallic treasures of the Massagetæ and Arimaspi, in the extreme north of Europe. I say of Europe, for the barren table land of Northern Asia, the modern Siberia, with its pine forests, was considered as a wearisome continuation of the Belgian, Baltic and Sarmatian plains. If we cast a glance over the history of commercial intercourse we shall find the richest gold mines of ancient times, in Asia. From the termination of the Middle Ages, and for three centuries later, they belonged to the New World. At the present day, and since the commencement of the nineteenth century, the most abundant supplies are again found in Asia, although in different zones of that continent. This change in the direction of the current, this compensation presented by accidental discoveries in the north, when the supply of gold suddenly ceased in the south, is deserving of serious consideration, of examination guided by numerical data; for in political as well as in natural phenomena, numbers are ever decisive; they are the last inexorable judges in disputed questions.

II. HISTORY AND MYTHOLOGY OF GOLD.

WE learn from the researches of Bœckh [1] how, on the opening of the East by means of the Græco-Persian War, and the subsequent expedition of Alexander, to Asia, gold gradually accumulated in Greece, so that in the age of Demosthenes, for instance, the precious metals were of nearly five times less value than in that of Solon. The stream flowed at that time from east to west, and the influx of gold was so abundant that the ratio in value of gold to silver, which in the time of Herodotus was 1 to 13, stood at the death of Alexander, and for more than one hundred years afterwards at 1 to 10.

The less general the commercial relations of the ancient world, the greater and more sudden the changes in the relative value of gold and silver must necessarily have been and the more inconsiderable the quantity of bullion already existing in a country, the more easily, by means of influx from without, may extraordinary fluctuations be brought about.[2]

[1] Bœckh, Polit. Econ. Athenians, p. 43.

[2] Down to the time when Von Humboldt wrote, no critical examination had been made of the ancient Oriental and Greek monetary systems and therefore no knowledge existed of the ratio of value between gold and silver, except what could be gleaned from the scant notices in the pages of Herodotus, Livy and other classical writers. The substance of this information was that Darius Hystaspes, about B.C. 520, exacted his tributes variously in gold or silver at the ratio of 1 to 13 and that in the treaty between the Romans and the Etolians, B.C. 191, the ratio for the payment of a war indemnity was fixed at 1 to 10. (Herod., III, 95; Livy, XXXVIII, 11.) Upon this slender basis the economists of the last century promulgated the theory that the ratio of value between the precious metals was due to their relative cost of production. When the unsoundness of this theory was demonstrated it was superceded by another theory which held that the ratio was due to the relative quantities of these metals in use, or in use as coins. It is the second one of these hypotheses that our illustrious author has here adopted. But modern research has shown that (at least down to a comparatively recent period) it was no more true than the other. It appears that in all the great states of antiquity, in India, Assyria, Egypt, Greece and Rome, the coinage of gold was reserved and maintained as an hierarchical prerogative and that the ratio of value between gold and silver was fixed by the chief-pontiff and practically had nothing whatever to do with either the cost of production or the relative quantities of those metals. The ratio in the coinages of Oriental states varied from 1:4 to 1:6½, whilst the Assyrian and Persian ratio was at the same times fixed at 1:8 and at 1:13. By this means those western nations who controlled the Oriental trade and exported Iberian and Greek silver, in exchange for Bactrian or Indian gold, of which they monopolized the coinage, secured one hundred per cent. profit. See Del Mar's History of "Ancient Moneys;" "Hebrew and Persian Moneys;" and "The Middle Ages Revisited." Trans.

In the modern world, the universality and rapidity of communication, which always tends to restore an equilibrium, and the vast amount of the accumulated masses of gold and silver already existing, both combine to render still more stable the relative value of the metals. After the Revolution in Spanish America the annual supplies of silver were, for several years, reduced to one-third, and the inconsiderable oscillations of the ratio here and there are not to be attributed to this cause. With regard to the relation of silver to the so little accumulated and therefore so unequally disseminated metal, platina, the circumstances are totally different.

Of statistical data, shewing, like those of modern days, the productiveness of entire countries, we find nothing among the ancients. The nature of their public administration did not admit of that control, which, in more recent times, the more refined fiscal system of the Arabians has imparted to the states of southern and western Europe. A datum like that given by Pliny, (XII, 18; VI, 23;) according to which the commerce with Yemen, India and Serica, absorbed annually one hundred millions of sesterces worth of the precious metals, remains isolated and problematical.[3]

Where comprehensive results are wanting, numerical examples of the partial metallic productiveness of certain mountainous countries would be the more valuable; as we should be enabled to compare them with the modern produce of celebrated mining districts, weight by weight, in the absolute sense, without relation to the difficult consideration of gold as a measure of value of a given quantity of corn, etc. Treasures amassed by princes, the results of conquest or of long continued extortion, are only evidences or what have been accumulated in extensive regions during an unknown number of ages. Results like these may be compared with the data which our statisticians venture to put forth concerning the masses of precious metals existing in a state at a given period. If Cyrus, according to Pliny, (XXXIII, 15,) amassed by the conquest of Asia, 34,000 lbs. weight of unwrought gold, without reckoning that which was wrought into vessels, still it is scarcely to be compared with two years produce of the Ural. On the other hand, Appian, on the authority of public records, estimated the treasure of Ptolemy Philadelphus at 740,000 talents, that is, according as we calculate by the Egyptian or the smaller Ptolemaic talent, 1017 or 254 millions of Prussian silver thalers. "Such state-

[3] This probably consisted entirely of silver. In the time of Pliny there were 100 silver sesterces to the aureus, a gold coin containing about the same quantity of fine metal as an English guinea, or an American half-eagle. Trans.

ments," says Bœckh, "sound fabulous, but I venture not to question their credibility. There was amongst this treasure much wrought silver and gold. The countries were completely exhausted; taxes and contributions were collected by rapacious prætors. The revenues of Cœle-Syria, Phœnicia, Judea, and Samaria, alone were leased by Ptolemæus Euergetes for 8000 talents; whilst a Jew purchased them for double that sum." Jacob, in his excellent work on the Precious Metals, published at the request of Mr. Huskisson, confirms these data. The figure of 1017 million silver thalers will come near the present circulating medium of France and Belgium; the 254 million thalers approximately represents that of England.[4]

According to Strabo, Alexander collected in Ecbatana eighteen myriads (180,000) of talents. We must not, however, lose sight of the fact, that whilst at the present day the precious metals are proportionately distributed over extensive districts and among numerous populations, they were at that time concentrated on a few points, or in the coffers of princes.

That the golden treasures of the east, by which the western world was inundated, flowed from the interior of Asia northeastward from Ladak, along the upper course of the Oxus, toward Bactria and the eastern satrapies of Persia, there cannot exist a doubt; still it is easier to point out the direction of the stream, than its particular sources and their relative productiveness. The scene of the fabulous gold-seeking ants must be sought for far from the griffins of the Arimaspi. The former story would seem to belong to the table land of Kashgar and Aksu, between the parallel chains of the Celestial Mountain and the Kuenlun, where the river Tarim flows into the Lap. We shall again have occasion to refer to the more northern Arimaspi when we come to notice the gold masses of the Ural, lying immediately under the surface of the ground. The fame of Indian wealth resounded, in

[4] Just as there is at the present time a pound weight in which sums of money are never expressed and a pound sum in which such sums are always expressed, so there was in Greece a talent-weight in which sums of money were not and a talent-sum in which they were, expressed. In their preference for the marvellous, modern writers have chosen the weight, because it is greater; and they have thus exaggerated the ancient accounts. In the time of Ptolemy Philadelphus the Greek talent was a sum of five gold staters, each of about 127 grains fine or about the weight of the Roman aureus of the time of Pliny mentioned in the last note. As the Greek ratio was 1 to 12 a silver talent was a sum of money containing about 7620 grains of fine silver. The treasure of Ptolemy Philadelphus therefore contained about the same quantity of gold as £3,700,000 sterling; whilst Ptolemy Euergetes farmed the revenues of Asia Minor for about £40,000 sterling a year. Of course these sums were worth in commodities or services far more at that period than at present. Trans.

oft mistaken echoes, as far as Persia. Ctesias, of the tribe of the Asclepiads, physician to the king Artaxerxes Mnemon, without appearing to be aware of it, under the figure of a gold spring, most distinctly describes a smelting-furnace, out of which the liquid metal flows into earthern moulds. Nearer to the Greeks was Lydia, and, on the rivers which have their sources in Tmolus, were the gold-producing countries of Phrygia and Colchis. The quickly exhausted nature of alluvions, or gold washings, renders it intelligible to the practical miner why so many of the above-named and recently revisited countries appear to the traveller poor in gold. How easy would it be, were we to visit at the present day the ravines and torrent-beds of Cuba and St. Domingo, or even the coasts of Veragua, in ignorance of the existing historical testimony, to doubt of the rich booty afforded by those districts at the conclusion of the fifteenth century? More durable, when not disturbed by external relations, is the subterranean mining in permanent veins of gold ore; precisely because the entire bed cannot be discovered at once, as well as because, by the process of mining by galleries, the mountain is only laid open by degrees, thus affording a more permanent employment to human activity. How many of the forty gold washings so carefully described by Strabo could be recognized at the present day? This remark, founded on mining experience and analogy, is the more deserving of place here, now that ignorant scepticism so eagerly attacks the traditions of antiquity.

That part of Europe known to the Greeks was as far inferior to Asia in metallic riches, as the whole European continent has proved to be in recent times, to the New World. The relative productiveness of Europe and America, in gold, at the commencement of the nineteenth century, the period when the mines of the Spanish colonies were wrought with the greatest activity, was as 1 in Europe to 13 in America; in silver as 1 to 15. To me it appears probable that during the Alexandrian and Ptolemaic periods, the proportion would have been still more unfavourable to Europe, especially in gold, could statistical data of this nature be obtained. In Greece itself, it is true, that besides the originally rich silver mines of Laurium, the quantity of gold found in Thessaly, as well as in the mountains bordering on Macedonia and Thrace, was considerable. Iberia, also, was to the Phœnicians and Carthaginians not merely a country of silver, for Tarshish and Ophir (the latter either Arabia or the eastern coasts of Africa, or rather according to Heeren, the general name for rich southern countries) were the destinations of the united Hiro-Solomonian fleets. Although, in the metallic abundance of Spain, silver from Bœtica and

the neighbourhood of New Carthage was the chief object of foreign commerce, yet Gallicia, Lusitania, and especially Asturias, produced, during many years, 20,000 lbs. weight of gold; that is to say, almost as much as Brazil during its most flourishing period. It is not surprising, therefore, that the Spanish peninsular acquired, among the Phœnicians and Carthaginians, the reputation of a western Dorado. It is certain that in many districts, which at present discover but faint traces of metallic deposits, the earth was at some former period covered, near the surface, with beds of gold sand, or traversed by solid rocks containing "leads" of gold ore. The local importance of such mines in southern Europe is not to be denied, though in comparison with Asia, their productiveness in gold must be deemed insignificant.[5] The latter continent remained long the chief source of metallic wealth; and the direction of the current of gold, as far as Asia and Europe are concerned, must be considered as from east to west.

III. THE GOLD OF SPANISH AMERICA.

IT was Asia itself, or more properly the rumours spread by travellers during the middle ages, of the incalculable treasures of Japan and the Southern Archipelago, which caused a sudden change in the direction of the metallic current. America was discovered, not (as was so long falsely pretended) because Columbus predicted another continent, but because he sought by the west a nearer way to the gold mines of Japan and the spice countries in the southeast of Asia. "The greatest geographical error (the notion of the proximity of Spain to Asia) led to the greatest geographical discovery." Christopher Columbus and Amerigo Vespucci both died in the firm conviction that they had touched upon Eastern Asia—the peninsular of the Ganges. The reputation of having discovered a new continent, therefore, could give rise to no dispute between them. In Cuba Columbus wished to deliver up the credentials of his monarch to the Grand Khan of the

[5] Without questioning the general correctness of Von Humboldt's deductions in this place, it should be stated that the alluvions of Asturias, Leon and Gallicia, considerable portions of which, because they are "out of grade" for hydraulic mining, still remain untouched, were very rich and extensive. Whether they were worked on a large scale at the remote period alluded to by Von Humboldt, has not been determined, but they certainly were so worked during the Roman period; for their excavations and works, which are of the largest character, can still be seen. The alluvions are situated chiefly on the upper affluents of the rivers Minho and Douro. Del Mar's "Money and Civilization," p. 58. Trans.

Mongols. He mistook that island for Maugi, the southern part of Cathay (China), and there expected to find the celestial city, Quinsay, (now Hang-tscheu-fu,) described by Marco Polo. "The island of Hispaniola,"(Hayti,) writes Columbus to Pope Alexander the Sixth, "is Tarshish, Ophir and Zipangu. In my second voyage I have discovered 140 islands and 333 miles of the continent of Asia (de la tierra firma de Asia)." This West Indian Japan shortly produced golden nuggets (pepitas de oro), of eight, ten and even twenty pounds weight. The newly discovered America now became the chief source of the precious metals.

The new stream flowing from west to east, shortly traversed Europe, since, owing to the increasing intercourse created by doubling the Cape of Good Hope, a more considerable value was required in return for the spices, silks, and dyeing materials of southern and eastern Asia. Before the discovery of the silver mines of Tasco, (1522,) on the western declivity of the Mexican Cordilleras, America furnished gold only; and Queen Isabella of Castile, was induced to considerably alter the legal relation of the precious metals to each other. The early but hitherto little noticed Edict of Medina may be explained by this circumstance, and by the accumulation of gold on a few points in Europe.[6] I have attempted to prove, in another place, that from 1492 to 1500 the entire importation of gold from the then discovered regions of the New World scarcely afforded a yearly average of 2000 marks.

Pope Alexander VI., who conceived he had presented to the Spaniards one-half the globe, received in return, from Ferdinand the Catholic, a quantity of golden nuggets from Hayti, for the guilding of the entablature of the basilica of Santa Maria Maggiore, "as the first-fruits of the newly-discovered country." An inscription in metal mentions, "Quod primo catholici reges ex India receperant." So great at that time was the activity of the Spanish government that so early as 1525, as we learn from the testimony of the historian Muñoz, a miner named Paolo Belvio was sent with a provision of quicksilver to

[6] In 1475 the Spanish mint ratio was fixed at 10.985 silver to 1 gold; in 1480 at 11.555 to 1; in 1483 at 11.675 to 1; and in 1497 (by the Edict of Medina) at 10.755 to 1. The Edict of Medina therefore merely reënacted a ratio which had been enacted before the discovery of America and had nothing to do with that event, or with the production of gold which followed it. It simply expressed the will of the Crown, which monopolized the coinage of gold and exchanged it for silver coins at whatever ratio it deemed proper. Memorias de la Real Academia de Historia, tome, VI, p. 550. In the course of little more than a single century, 1454-1546, the ratio in Spain was altered by the Crown from 7½ to 13⅓ for 1. Del Mar's "Money and Civilization," p. 101. Trans.

Hayti, in order to expedite the gold washings by means of amalgation. It is very curious to read, in a newly-discovered part of the geography of the sheriff Edrisi, recently published, "that the negroes in the interior of Western Africa, as well as the inhabitants of the fertile settlement of Wadi el Alaki (between Abyssinia, Bodja and Nubia,) washed gold by means of quicksilver." This Nubian geographer of the twelfth century speaks of it as a thing long known. During the ages of classical antiquity, we find mention of quicksilver having been generally used for the purpose of detaching the gold from the threads of old fringe,never, however, of a techinal application of it, on a large scale, in those processes of catching and purifying the precious metals which have been so circumstantially described to us by ancient writers.[1]

The relative value of gold and silver is at all times modified rather by the discovery of new, than the drying up of old sources. Thus, for the second time since the discovery of the Antilles, the relative value of gold rose about the middle of the sixteenth century, on the opening of the rich silver mines of Potosí and Zacatecas in Peru and North Mexico. The result of my very careful inquiries shows that down to the opening of the Brazilian gold washings at the commencement of the eighteenth century, the importation of American gold bore a relation to that of silver, weight for weight, as 1 to 65. At the present day, this proportion, if we embrace in one view the Europearn commerce in metals with all parts of the world, is scarcely more than 1 to 47. Such, at least, is the result derived from a comparison of the masses of both metals contemporaneously existing in Europe in the condition of coins. The data contained in the otherwise excellent work of Adam Smith, as well as the greater part of the commercial results therein given, are erroneous in the above-named proportion, by more than half. Among the civilized and consequently European nations, carrying on immediate commercial intercourse, the relative value of gold and silver was altered during the first hun-

[1] According to Wilkinson's "Egyptians," II, 213*n*., (ed. 1878,) quicksilver in flasks has been discovered in ancient Egyptian tombs. The process of amalgamation is alluded to by Vitruvius and Pliny. It was well known to the ancient Hindus. Edrisi mentions its use in the eleventh century by the Arabs. It was employed during the reign of King Diniz of Portugal, thirteenth century. Rep. U.S. Silver Com. 1876, I, 458. Von Humboldt shows that it was used by the Spaniards in 1525. The claim that amalgamation was invented by Medina in 1567, which will still be found in most books of reference, is therefore groundless. It probably arose from the fact that in that year quicksilver mines were first discovered in Peru. Boisard, I, 270. Or it may relate to the "patio" process. Trans.

dred years subsequent to the discovery of the new continent, from 10.7 to 12 for 1; in the last two centuries from 14 to 16 for 1. These changes by no means exclusively arose from the relative quantities of the metals annually obtained from the bowels of the earth. The relative values of the two metals is dependent on a variety of causes, for example, the cost of production and the demands for consumption and conversion into trinkets and other metallic wares.[8]

So many different causes acting at once, as well as the present facility of intercourse and the enormous masses of the precious metals already accumulated in Europe, render any considerable or permanent involuntary variation in the reative value of gold and siver impossible. Experience has shown that interruption of the production —such as that caused by the outbreak of the Revolution in Spanish America—or the immoderate consumption of the precious metals by one of the more considerable mints, both fail to disturb the ratio. In England, for instance, in the ten years from 1817 to 1827, more than 1,294,000 marks of gold were converted into money, and yet this monopoly of gold only raised the proportion of it to silver in the London bullion market from 1:14.97 to 1:15.6. Since that time the exchangeable value of gold as compared with silver, has undergone but little depression; for at the conclusion of the year 1837 a pound weight could be purchased in London for 15.65 lbs. of silver. We shall presently furnish numerical data for the solution of the question as to what influence may be attributed to the combined effect of the Ural and the North American mines.

The quantity of the precious metals imported into Europe, from the Discovery of America to the breaking out of the Mexican Revolution, was 10,400,000 Castilian marks (2,381,300 kilogrammes) of gold, and 533,700,000 marks (or 122,217,300 kilogrammes) of silver; their united value amounting to 5,940 millions of piastres, or doilars, each of 4*s.* 4*d.* sterling. The silver obtained, during this period, from the American mines is calculated, in this valuation, at the standard fineness of 0.903 for the piastre, which, for 122,217,300 kilos. silver piastres will give but 110,362,222 kilos. pure silver. This would form

[8] It has been shown in a previous note that in respect of the causes of the relative value of the two precious metals, one to the other, neither cost of production nor relative quantity, either the quantity produced or coined, had any observable influence upon it, previous to a comparatively recent period. The basis of this ratio was purely historical and reached backward to remote ages. After the adoption of individual coinage or so-called "free coinage" in Holland, England and other states, during the sixteenth and seventeenth centuries, other circumstances began to influence the ratio, for the first time, at least, since the foundation of the Roman Empire. Trans.

a globe of 83.7 Parisian feet in diameter. Such a reduction to form and dimensions I consider allowable for graphical description. If we compare the result of 318 years' produce of Spanish America with that of one years' production of iron in a single country of Europe we shall have, according to the data of my friend, the celebrated geognost, Dechen, a globe of iron for Great Britain of 148, for France 111, or for the Prussian monarchy of 76 Parisian feet in diameter. So great is the difference in quantity of the two metals, silver and iron, in that part of the earth's superfices accessible to man!

Whilst the stream of gold and silver flowed from west to east, Spain was merely the channel of communication. But little of it remained in that country; still less in the coffers of the king.[9] Of the pecuniary difficulties of Charles V., the historian Ranke has treated in his work on Spanish finances. That talented writer, by means of fresh documents, has enlarged and confirmed my official proofs of the inconsiderable quantity of the precious metals furnished by the American mines and the so-styled Inca treasures, down to the year 1545.

A more intimate acquaintance with the history of the metallic productiveness or gradual discovery of rich and considerable beds of ore in the New World, enables us to explain why the depreciation in value of money, or what is the same thing, the increase in the prices of grain and other commodities, first began to be felt toward the middle of the sixteenth century, and more especially between 1570 and 1595. The abundance of silver from the mines of Tasco, Zacatecas and Pachuca, in New Spain, and of Potosí, Porco, and Oruro in the Peruvian Andes, then first began to be regularly diffused throughout Europe, and effected a material alteration in the prices of wheat, wool and manufactured wares. The actual opening and working of the mines of Potosí by the Spanish conquistadores, took place in the year 1545; and the famous sermon preached by Latimer before Edward the Sixth, in which he expresses his anger at the increasing price of

[9] "Ferdinand the Catholic," (writes his admirer and friend, Anghiera, a few days after that monarch's decease,) "was so poor that it was difficult to procure money to furnish decent clothing for the servants at his funeral." We add this remarkable passage from the letter to the Bishop of Tuy: "Madrilegium villulam Regis tibi alias descripsi. Tot regnorum dominus, totque palmarum cumulis arnatus, christianæ religionis amplificator et prostrator hostium, Rex in rusticanâ obiit casâ, et pauper contra hominum opinionem obiit vix ad funeris pompam et paucis familiaribus præbendus vestes pullatas pecuniæ apud eum, neque alibi congestæ, repertæ sunt, quod nemo unquam de vivente judicavit."

all the necessities of life, is of the 17th of January, 1548. The English corn-laws, between 1554 and 1688, indicate the increase of money still better, perhaps, than the prices of grain collected by Fleetwood, Dupres de St. Maur, Garnier and Lloyd. It is well known that the importation of wheat into England is only allowed when the price of a given measure has reached a certain figure prescribed by law. In the reign of Queen Mary (1554) this limit was six shillings per quarter; under Elizabeth (1593) about twenty; and in the year 1604, under James the First, more than twenty-six. These numerical data are undoubtedly of great value; still, considerable caution is required in the interpretation of them, since the problem of the prices of corn, as well as of prices in general, is a very complicated one; and varying theoretical views, the influence of land-owners, as well as the unequal local accumulation of money and commodities, all produce their effect on legislation. Besides this, atmospheric changes, (the mean warmth of the spring and summer months,) affecting the cultivation of cereals, do not embrace at the same moment the entire area of agricultural Europe. A disproportionate increase in population, and consequently increasing intercourse, multiplies the demand for the precious metals. In the standard which we think to find in the fluctuating prices of grain, we have to deal with two contemporaneously fluctuating quantities. The increased price of grain, even for a particular country, no more indicates the relative increase of money, than it informs us concerning the state of the weather and the quantity of sunbeams. Data which should embrace a considerable portion of Europe contemporaneously are nowhere to be found; and careful inquiries have shown that in the north of Italy the advance in the price of grain, wine and oil, from the fifteenth to the eighteenth century, was much less considerable than we might reasonably conclude from what is known to us of England, France and Spain, in which latter countries the prices of grain, since the discovery of America, have advanced four and even sixfold. Here it may not be superfluous to insert a numerical result based on the average price of fourteen years for the whole of the Prussian states, and drawn out with the greatest industry, at my request, by the Counsellor Hoffman. In the year 1838 for a pound of gold you might purchase in Berlin 15.692 lbs. of silver, 1611 lbs. of copper, and nearly 9700 lbs. of iron. The pound of gold, according to the averages of 1816 to 1829, and 1824 to 1837, was exactly equal, in value, to 20,794 lbs. of wheat, 27,655 lbs. of rye, 31,717 lbs. of barley and 32,626 lbs. of oats.

The apprehensions respecting the diminished importation of gold

and silver from the New World—caused by the appearance of the important, but in Germany not sufficiently appreciated, work of Jacob on the Precious Metals—have not been realized.[10] The depressed condition of the metallic production from 1809 to 1826, has, notwithstanding the unsettled state of Spanish America, revived to three-fourths of what it was at the period when I quitted those countries. In Mexico, in fact, according to the latest intelligence, for which I am indebted to the active charge d'affaires of Prussia, Mr. von Gerolt,[11] the annual produce had risen to twenty or twenty-two millions of piastres, to which, besides Zacatecas, the newly-opened mines of Fresnillo, Chihuahua and Sonora, had largely contributed. During the last peaceable period of Spanish dominion, I could not estimate the annual produce at more than twenty-three millions of piastres. The administrative control was then more complete, as there existed a Central Mining Commission; besides, severe laws restricted commerce to a more limited number of ports. The greatest activity which at any time prevailed was in the Central Mint of Mexico, which, from 1690 to 1803 struck exactly 1353 millions of piastres from domestic gold and silver; but from the discovery of New Spain to the liberation of the country, probably 2028 millions—that is to say two-fifths of the entire amount of the precious metals which the whole of America has poured into the Old Continent—was furnished before the seventeenth century.

The assertions so often made, in consequence of unsuccessful speculation, concerning the exhaustion of the Mexican mines, are disproved as well by the geological formation of the country, as by the most recent experience. The mint of Zacatecas alone, during the unsettled period from 1811 to 1833, coined more than 66,332,000 piastres, and in each of the last eleven years of the period (1822 to 1833) between four and five millions of piastres.

	Piastres.		Piastres.		Piastres.
1829. . .	4,505,180	1831. . .	4,469,450	1833. . .	5,720,000
1830. . .	5,189,902	1832. . .	5,012,000		

In Zacatecas, a single vein, the Veta Grande, which had been wrought since the sixteenth century, and which down to 1738, had frequently fur-

[10] The fear that the diminished supply of the precious metals which was demonstrated by Jacob would be followed by an overplus of new supplies from Russia and North America appears to have prompted this work of Von Humboldt, which proves that these sources would hardly more than fill the void caused by the falling off in the South American supplies. Trans.

[11] Afterwards Baron von Gerolt, from whom the writer received further information concerning some of the subjects embraced in the present notes. Trans.

nished as many as three million piastres in a year, has recently brought only the following quantities into use:

	Marks weight of silver.		Marks weight of silver.		Marks weight of silver.
1828.	117,268	1830.	279,288	1832.	258,498
1829.	235,741	1831.	272,095	1833.	209,192

NOTE.—The Castillian mark contained 3550½ English grains.

It is true that Guanahuato, on the other hand, which even in my day furnished annually 755,000 marks weight of silver, has of late years fallen to lesss than half. The produce was:

	Gold; marks wt.	Silver; Marks wt.		Gold; Marks wt.	Silver; Marks wt.
1829.	852	260,494	1832.	1451	300,612
1830.	1058	284,386	1833.	1144	316,024
1831.	622	258,500			

And should those regions, so highly favoured by nature, ever enjoy the blessings of peace, the extended cultivation of the soil must lead to new discoveries of mineral strata in the vicinity. In what other region of the globe are we enabled to produce instances of a similar productiveness in silver? We must not forget that near Sombrerete, where mines were opened so early as 1555, the family of Fagoaga (Marques del Apartado) within the space of five months, in an extent of ninety-six feet in length, obtained from falls of red ore in the Veta Negra, a clean profit of four million piastres; and in the mining district of Catorce, an ecclesiastic, (Juan Floreo,) between 1781 and 1783, from the shaft called by the common people "the Purse of God, the Father" (la Bolsa de Dios Padre) obtained three and a half million piastres.

The quantity of gold produced in Spanish and Portuguese America has diminished considerably more than that of silver; this diminution, however, must be dated much further back than the outbreak of the political revolutions in those tropical countries. I have already pointed out, in another place, how erroneous were our impressions in Europe, down to the commencement of the present century, concerning the continuance of the productiveness of the Brazilian gold washings, and how far we had confounded its flourishing days with its more recent condition. The report (so important to the gold trade) of the British Bullion Committee first threw some light on this subject. I am indebted for the most authentic details to the communications of the late Director-General of the mines of Germany, Freiher von Eschwege. Mr. Jacob's work on the precious metals, though later, contains merely some trifling additions. From 1752 to 1761 the gold produce of Minhas Geræs varied from 6,400 to 8,600 kilos. This production is certainly considerable, far exceeding that of the Ural and

Altai at the present day; but we must recollect that in 1804, Spanish America furnished nearly 10,400 kilos. of gold, as follows:

	Kilos.	Value.		Kilos.	Value.
New Granada. . .	4,700	£470,000	Buenos Ayres. . .	500	£ 50,000
Chili. . . .	2,800	280,000			
Mexico. . . .	1,600	160,000			
Peru. . . .	780	78,000		10,380	£1,038,000

NOTE.—The kilogram contains 15,442.42 English grains.

Intermediately, that is to say, during 1785-94, the product of Minhas Geræs fell to 3,300 kilos., and between 1818 and 1820, to 428 kilos. These figures agree with the account furnished by the Chevalier de Schaffer, according to which, in the year 1822, only twenty-four arrobas of gold (350 kilos.) were delivered to the smelting furnaces of Villarica. Since that time, owing to the exertions of some English quartz mining companies, Brazilian gold mining appears to have somewhat recovered. However, the decline of gold washing, is rather to be attributed to the disposition to cultivate colonial produce, favoured as it is by the continued infamous importation of slaves from Africa, than to the exhaustion of the gravel beds. Owing to the enormous amount of smuggling at present carried on in the Brazils, it is to be wished that some native, thoroughly acquainted with the circumstances of the country, would give himself the trouble to discover the annual amount of gold produced since 1822.[12]

IV. THE NEW SUPPLIES FROM RUSSIA.

IT is a remarkable circumstance in the history of mining carried on by Europeans, that since the supplies of gold from the Brazils have so far diminished, those of Northern Asia and for a time those of the southern districts of the United States, have attained an unexpected degree of importance. The mountain chain of the Ural is found to produce gold for nearly 17 degrees of longitude. Though the Ural, in the years 1821 and 1822, only furnished 27 to 28 puds (440 to 456 kilos.) of gold, yet the produce of the gold sands gradually rose, in the three following years (1823, 1824 and 1825), to 105, 206, and 237 puds. According to the manuscript communication made to me by

[12] The annual gold product of Brazil from 1680 to 1877, when it had fallen to about £50,000, is given in Del Mar's "Hist. Prec. Metals," p. 122. That writer personally inspected and worked the auriferous alluvions of Minhas Geræs. The reason for their previous abandonment is not a preference for cultivating coffee or sugar, but the fact that for the most part they are "out of grade." Trans.

the Russian Minister of Finance, Count Cancrin, entitled "Return of the Precious Metals obtained in the Russian Empire, and refined in the Mint of St. Petersburg," the amount of pure gold was as follows:[13]

Year.	Puds.	Pounds.	Year.	Puds.	Pounds	Year.	Puds.	Pounds.
1821.	27	—	1828.	209	29	1833.	368	27
1822.	28	—	1829.	289	25	1834.	363	10
1823.	105	—	1830.	347	27	1836.	398	—
1824.	206	—	1831.	352	2	1837.	469	—
1825.	237	—	1832.	380	31			

NOTE.—The Russian pud consists of forty Russian pounds and each pound of 6378½ English grains.

At the period of the expedition which I undertook into Northern Asia, at the request of the Emperor Nicholas, the gold washing was confined to the mountains on the European declivities of the Ural. The Altai, (in Mongol, "Gold Mountain,") furnished merely an inconsiderable quantity (about 1900 marks) of gold which was obtained from the silver ores of Smeinogorsk, Riderski and Syrianowske. Since 1834, however, the industry of gold washing in this central part of Siberia has been unexpectedly rewarded. A bed of auriferous gravel has been discovered, precisely similar to the beds on the declivities of the Ural. The house of Popof, so deservedly celebrated for the encouragement it has afforded for improving intercourse with the interior of Asia, has also taken the lead in mining. Among the 398 puds (27,884 marks) of gold produced by the entire Russian Empire in 1836, 293 puds, 26 lbs., were from the Ural, and 104 puds, 15 lbs., from the Altai. In the following year the produce of Eastern Siberia had already so much increased that the Altai furnished 130 puds and the Ural (from Crown and private washings) 309 puds, alluvial gold. If to these amounts we add 30 puds derived from the quartz ores of the Altai, it will give for the entire produce of Russia for the year 1837, precisely 469 puds or 7644 kilos. The gold washing in the Ural is, therefore, in a very gradual decline; the Altai, however, contributes so much to the general mass, that its produce, as compared with that of the Ural, is already as 4 to 9½.

Concerning the actual situation of the gold gravels in the Altai, the most recent information has been communicated by a distinguished geologist, my former travelling companion in the southern Ural, Mr. von Helmerson. The alluvial gold, which for some years past has been obtained in constantly increasing quantities in the eastern part of the Tunskisch district, does not belong to the great mountain chain which Ledebour, Bunge aud Gebler, have explored, and in which the

[13] The annual gold product of Russia since 1814 is given in Del Mar's "Hist. Prec. Metals," pp. 158-60. Trans.

mountain Belucha, with its inaccessible snow-peaks, majestically raises itself to the height of both the Wetterhorn and the peak of Teneriffe. The situation of the golden gravels is observable on both, but especially on the eastern side of a small mountain chain, which the Altai, in its course from east to west, sends out in the meridian of the Telezkishen Lake, and extends into the parallel of Tomsk. "On the maps," says my friend, Mr. von Helmerson, "this mountain spur, producing alluvial gold, is distinguished by the names of Abakans-chrish, Kusney-chrish and Alatua mountains. In direction, internal composition and formation, it possesses the most striking similarity to the Ural; it is, in fact, a repetition of it, only at less considerable length. The analogy goes so far that here also the eastern declivity is rich, whilst the western is poor in gold. As it is precisely this western declivity which has been reserved by the Crown, it is almost entirely private adventurers who have profited by the productiveness of the Alatua, or this branch of the Ural running toward the north." The importance of these observations of Mr. von Helmerson cannot escape such geognosts as are familiar with my inquiries concerning the mountain system of the interior of Asia, or with the original views of Elie de Beaumount concerning the parallelism and relative antiquity of different mountain chains. I have not myself seen the northern beds of the Altaian gold gravels, as the direction of my journey was from Tobolsk, by Turu, through the Barakinskish steppes, to the western and southern Altai, and from thence to the Chinese frontier-post, Chunimailachu, in the province Ili, northward from Lake Saysan. The wash-gold of the Altai contains more silver than the gold of the Ural. The Siberian merchants, powerfully seconded by the Imperial Mining Department, have now established winter washings; and the working of this new branch of Asiatic industry is the more remarkable and satistactory in that the workmen consist of well-paid freemen. According to recent accounts, for which I am indebted to the Minister of Finance, M. von Cancrin, rich gravel beds have been discovered in the Salairskisch chain of mountains, as well as on the river Beriusa, which separates the "governments" of Teniseisk and Irkutik. For the whole of Siberia, 240 licenses (permission to work the auriferous beds) have been granted.

Such is the importance which the influx of gold from the eastward has attained in modern times. The principal object of the present inquiry, is to point out the change of direction in the gold supplies.[14] Those 469 puds of Uralian and Altaian gold (the produce of the year

[14] See Note 10.

1837) are worth in Russian silver money, 7,211,000 roubles, or about £1,031,650 sterling; which produce is only an eighth less than that of Minhas Geræs, Brazil, in the richest years of the flourishing period from 1752 to 1761; and one-third less than the produce of New Granada, Chili and Mexico, shortly before the breaking out of the Revolution in Spanish America. If we consider the enormous extent of the Siberian continent, and recollect the rapid increase of gold from the Ural in the years 1822, 1823 and 1824, it will appear extremely probable that the reflux from east to west (from Asia to Europe) has by no means reached its maximum. The produce of eastern Siberia will, perhaps, increase more rapidly than that of the Ural washings, where the richest beds were first (and in the beginning unfortunately) only superficially worked. In the hydrostatic separation on the washing floors, a considerable quantity of the precious metals clings to grains of oxide of iron and other substances and is thus lost. This is not the place to enquire whether the ingenious and plausible method suggested by Colonel Anussaw, Intendent at Slatonst, of amalgamation with iron and the application of sulphur to the substance thus produced, would be successfully applicable on a large scale. When we consider the sizes of the masses to be treated, the expense of transporting gravel so poor in gold, as well as the quantity of fuel required, the continued and well-directed experiments hitherto made, would seem to have their impracticable side.

The notions we have obtained during the last fifteen years concerning the present productiveness of northern Asia in gold lead us almost involuntarily back to the Issedones, the Arimaspi and the gold-guarding griffins, for whom Aristeus of Proconnesus, and, two centuries later, Herodotus, have obtained so lasting a reputation. I had the pleasure of visiting in the southern Ural the spot where a few inches under the turf, nuggets of brilliant gold, weighing 13, 16 and even 24 Prussian pounds, were discovered. Still larger masses may have lain, like stones, unobserved on the surface of the ground. No wonder, therefore, if, even in remote antiquity, this gold was obtained by venatic and pastoral tribes; or that the fame of such riches should resound to such a great distance as the Grecian colonies on the Euxine; colonies which at a very early period had inherited a commercial intercourse with north-eastern Asia, beyond the Caspian Sea. Neither the trading Greeks nor the earlier Scythians came themselves as far as the Issedones. They had intercourse only with the Argippæi. Neibuhr, in his inquiries concerning the Scythians and Getæ (enquiries by no means confirmed by what we have since learned concern-

ing the diversities of race and structure of languages among the northern tribes) places the Issedones and Arimaspi to the northward of Orenburg, on the eastern declivity of the Ural, that is to say, in the region now become familiar to us through its product of gold.

This opinion is supported in the valuable work of the Privy Counsellor Eichwald, recently published, "On the Ancient Geography of the Caspian Sea." On the other hand, Heeren and Volchen place this gold country of Herodotus in the Altai, and I admit that the local circumstances appear rather to justify this latter interpretation. Herodotus describes a trading route, along which, by means of the Issedones and Scythians, the gold of the northern Altai, or at least the fame of it, could reach the Hellespont. In order to penetrate as far as the Argippæi, who are represented as bald-headed, with flat noses and large jaw-bones, the Scythians and Greeks of the Euxine were compelled to employ seven interpreters of seven different languages.[15] Since the discovery of deep rich beds of gold gravel in the mountain chain which the Altai sends out to the northward, in the parallel of Tomsk, the position of the Arimaspi in a region far to the eastward of the Ural, certainly gains in probability. The fable of the gold-guarding griffins of Herodotus, according to the surmise of a learned and intelligent traveller, Adolph Herman, is connected with the fossil remains of the antediluvian pachydermæ, so frequently met with in Siberia, which the imaginative tribes had transformed into the claws and head of a gigantic bird. "Were we," concludes M. Herman, "disposed to find in this Arctic saga the prototype of the Grecian one of the griffins, it is strictly true that the northern researches for ore draw the gold from under the griffins; for gold under beds of earth and peat, filled with these bones, is now, as it was formerly, one of the commonest phenomena." However attractive this explanation, the circumstance that the fabulous beings, the griffins, are mentioned in the poems of Hesiod, is somewhat opposed to it, as is also the fact of their decorating the gates of Persepolis, together with lions, eagles and sphinxes.

I have already noticed the circumstance that in the Ural enormous masses of gold are found a few inches below the surface. Running water or other adventitious agencies may have so far laid them bare that they touched the very surface of the earth. The discovery of beds of gravel containing gold, beyond the Obi, in Northern Asia, and the increase in the amount of one year's produce of the Altaian

[15] Herodotus, IV, 24.

or Kusneskish wash-gold to 130 puds, is an event in the history of the gold trade; an event the more remarkable because it belongs to that part of Asia more immediately subject to Europe. The entire produce will consequently be at once thrown into the European gold market. However ancient vein-mining may be in Siberia, under the ambiguous denomination of "Tschudisher Tchurfe," still the considerable masses of wrought gold found in graves, on first taking possession of that country, may be more readily accounted for by an early discovery of gold nuggets in diluvial soil near the surface of the earth. Müller, the excellent historian of Siberia, relates that a remarkable depreciation in the value of gold in Krasnojarsk took place oh the first discovery of the treasures contained in the graves, (karganui.)

The interior of Asia, between the mountain ranges of the Himalaya and the volcanic Celestial Mountain, forms, like China, one great political and commercial community. What little we know of those regions, since the brilliant period of the Mongol dynasty, at the close of the thirteenth century, as illustrated by the travels of Marco Polo, has recently been enlarged in the south through India and in the north through Siberia, by those Europeans who have written concerning the gold gravel-beds of that extensive tract. The journals of Calcutta inform us that rivers throughout the whole of western Tibet contain gold, which the natives obtain by amalgamation.

The old Indian mythologist makes the ruler of the north (Kuwera) the god also of Riches; and it is remarkable enough that the residence of this deity (Alaka) must be sought for, not on the Himalaya itself, but on the Kailasa, beyond the Himalaya, in Tibet. Still further to the north-west, beyond the mountain chain of the Kuenlan, which separates the districts of Ladak and Khotan, Heeren places, and, I think, with much probability, the great golden sand deserts, visited by the Indians bordering on the Cashmir; and containing "ants less than dogs, but larger than foxes." It is on the western declivity of Bolor that the most recent and intelligent explorer of this terra incognita (Alexander Burnes) has found and described the gold sand-beds of Durwaz and the upper course of the Oxus.[16]

[16] Herman and Heeren are not the only learned men who have devoted their ingenuity to the patching of this fable. Mr. Ball assures us that the "ants" were men clothed in sheepskins, the "ant-hills" were pit-dumps and the "horns" were the pick-axes of the miners, etc. It is a pity that the discovery of the story in the Mahabharata destroyed all this erudition. See Mahabharata Sabha Parva, vol. 1, p. 375, cited in "Ariana Antiqua," p, 135. Trans.

V. GOLD OF THE ALLEGHANY RANGE.

ALMOST at the same moment in which the Ural opened its golden treasures, and began to replace what the diminished alluvions of Brazil were no longer in a condition to supply, strata containing gold were discovered in the southern part of the Alleghanies, in Virginia, North and South Carolina, Georgia, Tennessee and Alabama. The most flourishing period of these American gold washings was from 1830 to 1835.

It is true that, in the last eight years they have not produced more than 4½ million dollars; the appearance, however, of gold so near the coasts of the Atlantic, is in a geological point of view, deserving of more attention than has been given to it in Europe. It is a circumstance which also possesses great historical interest, for it assures us that the gold obtained by the first Spanish conquistadores from the natives of Florida, need no longer be considered as the result of intercourse with Mexico or Hayti. Jacob, in his oft-cited work, was only able to estimate the produce of the North American gold washings at 130,000 dollars; but in a few years it rose to 800,000, and even to a million dollars. In the county of Cabarrus (North Carolina) was discovered a gold nugget weighing 28 pounds Troy, and near it several from 4 to 10 lbs. Since my return from Siberia I have incessantly, but almost fruitlessly, attempted to procure more precise information concerning the progress of gold mining in the Southern States; and it is only quite recently that owing to the kindness of the president of the National Bank, Mr. Albert Gallatin,[17] one of the most intelligent men of the present day, my wishes have been gratified. I here insert some extracts from the letter of this distinguished gentleman: "The productiveness of the gold mines of the Ural, and perhaps of the entire Northern Asia, must certainly have drawn your attention to our gold washing and mining in the Southern States. I hope shortly, by the assistance of Professor Patterson (Director of the Mint) and Professor Renwick of New York, both distinguished mineralogists, to be in a condition to answer your geological questions. I send you, from official documents, a special report of what has been coined at the Mint, from our domestic gold, since 1824."

[17] Mr. Gallatin was the Finance Minister of the United States from 1801 to 1813. In 1831 he became president of the National Bank of the City of New York. Trans.

VALUE OF THE ANNUAL DEPOSITS OF GOLD, BY PRIVATE PERSONS AT THE MINT, FROM MINES IN THE UNITED STATES:

Year.	Virginia.	South Car.	North Car.	Georgia.	Tennessee.	Alabama.	Total.
1824.	——	$5,000	——	——	——	——	$5,000
1825.	——	17,000	——	——	——	——	17,000
1826.	——	20,000	——	——	——	——	20,000
1827.	——	21,000	——	——	——	——	21,000
1828.	——	46,000	——	——	——	——	46,000
1829.	$2,500	134,000	$3,500	——	——	——	140,000
1830.	24,000	204,000	26,000	$212,000	——	——	466,000
1831.	26,000	294,000	22,000	176,000	$1,000	——	519,000
1832.	34,000	458,000	45,000	140,000	1,000	——	678,000
1833.	104,000	475,000	66,000	216,000	7,000	——	868,000
1834.	62,000	380,000	38,000	415,000	3,000	——	898,000
1835.	60,000	263,000	42,400	319,000	100	$12,200	696,700
1836.	62,000	148,000	55,200	201,300	300	——	466,800
	$374,500	$2,465,000	$298,100	$1,679,300	$12,400	$12,200	$4,841,500

The profit, and with it the taste, for mining speculation, has rapidly declined since 1835. In a country in which uniform prosperity is accompanied by unfettered intercourse, channels for the more profitable employment of capital than is afforded by mining, will necessarily present themselves.

VI. NO CAUSE FOR ALARM

IN the history of the bullion trade, however, the metal obtained from the bowels of the earth and brought into circulation, as well as the ebb and flow of the precious metals in different directions, are subjects of greater interest than the mere profit afforded by the working of mines. The flow of the precious metals from Asia or America to our smaller continent, and from it partially back again to the parent source, follows, like fluids, the laws of equilibrium. The rich, but almost unexplored, regions of Central Asia and Africa, form smaller isolated basins, possessing slight intercourse with the coasts, and consequently with general commerce. Under the influence of European demand there flows from Nertshinsk, the Altai, and the Ural, on the one side and from the mines of the United States, on the other, a continual stream of the precious metals; the exchangeable value of which, whether we consider the metals in relation to each other, or as the measure of the price of commodities, is by no means entirely or principally determined by the increase or diminution in metallic production. This exchangeable value (I here repeat it) is affected in an unequal degree by the complicated arrangements and fluctuating relations of modern society; by an increasing or decreasing popula-

tion, and its progress in civilization; by the demand (regulated by the population) for an increased monetary circulation; by the frequently recurring necessity of remittances of bullion, as well as by their destination; by the unequal wear and tear of the two precious metals; by the amount of paper money, as part of the circulating medium; all acting upon the existing metallic medium of exchange. A rise in the relative value of gold as compared with that of silver, may as easily occur during a general increase in production, as a temporary depression of the barometer and an increased elevation of temperature, with a strong north-east wind. In the meteorological changes of the atmosphere, as well as in the general exchange of the precious metals, many disturbing causes are contemporaneously at work. The effect of each individual cause, in raising or depressing prices, may be determinable. Such, however, is not the case with all of them together; their infinite number, their accumulated action and the amount of partial compensation to be made, must defeat any á priori attempt to determine their aggregate influence.

ANY INCREASE IN THE PRODUCTION OF THE PRECIOUS METALS WHICH OUR IMAGINATION COULD CALL INTO EXISTENCE, WOULD SEEM INFINITELY TRIFLING COMPARED WITH THE ACCUMULATION OF THOUSANDS OF YEARS NOW IN CIRCULATION, ESPECIALLY WHEN WE CONSIDER THE RESPECTIVE PROPORTIONS DEVOTED TO COINS AND WROUGHT UP IN THE ARTS FOR USEFUL PURPOSES. Every increase, however inconsiderable, produces its effect in the long run; but as an increasing population with increasing requirements, has occasion for a greater monetary circulation, a sensible deficiency may occur in the midst of an increasing production. Before the important discoveries on the eastern side of the Ural, which only began to produce their effects in the years 1823 and 1824, the exchangeable value of silver, as compared with gold, in the important market of Hamburg, taking the average of the years 1818 to 1822, was as 1 to 15.2; while subsequently it fell on the average of five years from 1830 to 1835 to 1 to 15.233. In the same interval, in order to restore the metallic currency in England, as I have already stated, 1,294,000 marks were brought into circulation. What share, therefore, has the diminished exportation of the precious metals from the New World had, in bringing about this alteration in the ratio? It is scarcely necessary to take into calculation the Brazilian gold washings, since their annual product, during that period, scarcely amounted to 1700 marks.

If we assume that, in the twelve years immediately subsequent to the Revolution (of 1815) the production of Spanish America had sunk

to below one-third of what it had been during its last flourishing period (1800-1806) still the twelve years diminution only amounts to 83,200 kilos. Now the Ural, in the years 1823 to 1827, has already furnished compensation to the amount of 19,300 kilos; so that the diminution in the quantity of gold received in Europe only amounts, for the whole of these twelve years, to 286,000 marks. I have purposely selected an example presenting tolerably exact numerical elements. The result is a decrease in the production and importation of gold equal to between one-fourth and one-fifth of the quantity coined during the twelve years by the London mint. If even we take the ratio of value between the precious metals, freed from local causualities, for example, the silver value of gold bars at Hamburg, we shall be unable to discover, between 1816 and 1837, either the affluence of the Asiatic mines, or the diminished production of Spanish America.[18]

The maximum value which gold attained in 1827, was maintained with trifling variations, till 1832; at which period a gradual but progressive depreciation is observable. The Russian gold, from the Ural and Siberia, has partially contributed to this result. However, we must not forget that the entire gold produce of Russia, whatever importance we may attach to it in other respects, in the years 1823 to 1837, only amounted to about 302,000 marks, one-nineteenth less than the diminished production of Spanish America during the twelve years 1816-1827. Down to the present moment, the renewed working of the gold mines in the South American Republics has not been so general as that of silver. Beside this, the North American states, which have scarcely recovered from a recent financial panic, (the Great Panic of 1837,) have occasion for considerable remittances of bullion from Europe. This drain to the westward, together with other and more permanent causes, may have brought about the effects which we are disposed to attribute to the increased product of Asia alone. However, the principal reason of the small influence produced by the supplies from the Ural and Northern Asia lies in the relative insignificance of the influx, compared with the quantity of precious metals already existing.[19] The exports to Asia, which, in another place and

[18] Some fifteen years after Von Humboldt wrote this work, California and Australia together suddenly threw 24 to 38 million pounds sterling worth of gold per annum upon the market; yet this did not occasion the slightest variation in the ratio of value between gold and silver. Westminster Review, January, 1876. Trans.

[19] This important fact, so often and strenuously emphasized by our illustrious author, lies near the basis of all the practical problems of money; among them, the Silver Question. The enormous Stock on Hand, the accumulation of ages, almost entirely withdraws gold and silver from the operation of the economic laws of supply and demand. Trans.

at different periods I have had occasion to examine, are decidedly on the decline. In the year 1831 Jacob still estimated the annual loss in the balance of trade by the Cape of Good Hope at £2,000,000 sterling.[20] As far as I can recollect, this was also the opinion of that great statesman, Huskisson, so prematurely taken from us. Notwithstanding the general use of coffee, tea, sugar, and cocoa—articles unknown in the fifteenth century—the trade in spices is still a considerable item in the passive commercial balance of Europe. In the states of the German Union, the consumption of spices, according to the most recent official enquiries, has increased as follows: (Values in Prussian thalers:) 1834, 2,426,000; 1835, 2,592,000; 1836, 2,876,000.

In France, the consumption during the same years declined as follows: (Values in francs:) 1834, 5,476,000; 1835, 3,982,000; 1836; 4,856,000.

In the whole of Europe, however, with a population of at least 228 millions, it is probably not less than fourteen to sixteen millions of thalers, two-thirds of which consist of vanilla, nutmegs, pepper, and cinnamon. When we reflect how considerable must be the amount of spices in the present consumption of Europe, compared with what it was at the conclusion of the fifteenth century, though constituting the greater part of the then existing commerce, we shall discover another remarkable example of the potency of the precious metals, when exercising their concentrated force in a narrow space; at that time the shores of the Mediterranean and Western Europe.

The trade in spices accidentally caused the Discovery of the New World and it led the Portuguese around the southern extremities of Africa to India, as it had the Greeks and Romans to Taprobana, or Ceylon. At the time when Christopher Columbus sought to "reach the east through the west," Paul Toscanelli, of Florence, wrote to him, as early as the 24th of June, 1474, "I am rejoiced to hear that you are approaching the accomplishment of your great and laudable desire to reach, by a nearer route, the regions where spices grow—onde nacen las especerias." With what complaints do the writings of the Italians abound, what imprecations are heaped upon the Portuguese, because they had penetrated by sea to India and threatened to annihilate the spice trade of the Venetian, Pisan and Genose merchants! Cardinal Bembo calls it a "malum inopinatum," and seeks for philosophical grounds of consolation. Petrus Martyr d'Anghiera writes to his learned friend, Pomponius Latus, "Portugalenses trans

[20] Jacob, p. 307, says one million sterling a year to 1811 and p. 368, two millions sterlings a year to 1831. Trans.

æquinoctium aliamque arcton, aromatum commercia prosequuntur, Alexandrinos ac Damacenos mercatores ad medullas extenuant." The opinion propagated by the Genoese, that the new route by the Cape of Good Hope would soon be relinquished because the spices during the long transit suffered from the sea-air, found but little credence; and the long calumniated Amerigo Vespucci (only three years after De Gama) with his usual acuteness, detected the right point of view here also. He observes, in a newly-discovered letter, written to Lorenzo Pietro de Medici, 4th June, 1501, from the Cape de Verde islands, on meeting the remains of Cabral's fleet, on his return to the Tagus,[21] "You will soon hear great news from Portugal. The king has now a most important commerce and great riches in his hands (grandissimo traffico e gran richezza). May Heaven lend its blessing thereto. (Vespucci was at that time in the Portuguese pay.) Now will spices go from Portugal to Alexandria and Italy, instead of as hitherto from Alexandria to Portugal. Such is the way of the world."[22] (Cosi va el mundo!) ALEX. VON HUMBOLDT.

Berlin, June, 1838.

[21] From India, which he had reached in 1501.

[22] Throughout this work the pud has been reckoned as equal to thirty-six pounds avoirdupois, the kilogramme at about two and a-fifth pounds avoirdupois; the mark weight of silver at forty-two shillings sterling (old value); the mark weight of gold at eight ounces Troy weight and the piastre at the old value of four shillings and four pence sterling. These were the equivalents which prevailed when Von Humboldt wrote. The reader will find more exact equivalents and a continuation of Von Humboldt's statistics in Del Mar's "History of the Precious Metals" and "History of Monetary Systems." Trans.

INDEX

TO

"HUMBOLDT'S FLUCTUATIONS OF GOLD."

THE LAW OF PAYMENT

BY

FRANCOIS GRIMAUDET

SOLICITOR FOR THE CROWN OF FRANCE IN THE PRESIDIAL COURT OF ANGERS

THE

FLUCTUATIONS OF GOLD

BY

BARON ALEXANDER VON HUMBOLDT

AUTHOR OF "KOSMOS," ETC.

TRANSLATED INTO ENGLISH, REVISED AND ANNOTATED

BY

WILLIAM MAUDE

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MEMOIR OF GRIMAUDET.

François Grimaudet was born in 1520 at Angers in the ancient province of Anjou, now called Maine-et-Loire. His family claimed descent from the illustrious Italian, Francisco Grimaldi, who was Treasurer to Louis II., of Anjou during the sojourn of that prince in Italy. Whatever may have been the merits of this claim, the family of Grimaudet were always noted for their fidelity to the House of Anjou, and to this circumstance must be attributed the fortunate exemption of François and his brother John from the murderous proscriptions of Saint Bartholomew's Day, of which more anon.

About the year 1545 François became a member of the Provincial Assembly of Angers and some few years later of the General Assembly (Etats) of Orleans. The great learning, probity and patriotism of our author soon marked him for political preferment, and in 1558 he was appointed Avocat du roi, or solicitor for the crown, or King's Counsel, in the Presidial Court of his native city. In two years' time he completely rehabilitated this office, whose functions had fallen into great neglect, and made for himself a name that reached to distant Paris and secured for him both the approbation of his patron, the Duke of Anjou, (afterward King Henry III.,) and the respect and admiration of the learned.

The political differences that rent the kingdom at this period turned upon the usurpations and claims of the Latin See. The discovery of America had opened a world which by no process of reasoning could be regarded as part of the Roman Empire, and one to which, therefore, the papacy could prefer no legitimate claim. The independent royalties which the Fall of Constantinople had erected were threatened with subversion by Italian art, when the discovery of a continent which turned out to be no part of India, and therefore no part of the Roman Empire, revived the spirit of royalty and gave encouragement to the demands of the Calvinists. The King of France, Charles IX., was a child, (born 1550,) and the affairs of State were entirely in the hands of his mother, Catherine de Medici, an Italian, a devotee and a blind instrument of Rome.

At this juncture Grimaudet, who was a loyal Catholic and had not the remotest intention to afford any assistance to Calvinism, but was imbued with a firm belief in the supremacy of the civil power and the

indispensability of divorcing Church and State, aroused the attention of the entire nation by a speech which he delivered in the Provincial Assembly of Angers on the 14th of October, 1560. It was printed with the title *Remonstrances aux Etats d'Angers*, and sustained among other theses, the following: "That the welfare of the State demanded the subjection of the ecclesiastical to the civil power, in whose hands all the functions of society were legally invested."

This startling proposition at once drew attention to him from all parts of the kingdom. The Calvinists saw in the brilliant and rising advocate a new leader; the Sorbonne of Paris discovered in him a rank heretic, who must be at once removed from his sphere of mischievous activity; while distant Rome began to sharpen anew those formidable weapons which she had used so often upon the doubting and recalcitrant. But all these parties were mistaken. Grimaudet was neither a Huguenot, a heretic, or a kicker. He was merely a clear-sighted lawyer, who perceived that the State was impossible unless it was free; that it could not go on if it was to be governed at Rome; and that unless the prerogatives of sovereignty were rescued from those, (whether noble or priest,) who had usurped them, the kingdom would inevitably fall. His design was not to weaken Rome, but to strengthen Henry of Anjou.

Within a few months after the delivery of his address it was antagonized by a speech delivered in the same assembly by Raoul Surguin, one of his colleagues at the bar. This adversary was compelled to retract his statements of fact; after which we hear no more of him. On the 15th of April, 1561, the *Remonstrances* of Grimaudet were condemned by the Sorbonne of Paris, who in their judgment especially enumerated the proposition above mentioned, together with five others, all of which they pronounced to be heretical.

From the accounts that have come to us of this judgment it does not appear to have been accompanied by any anathema or threat of deprivation of office; nevertheless Grimaudet, whose sense of honour and propriety refused to wait upon a condemnation, which, however reluctant, he felt would be sure to follow sooner or later, deemed it fit to resign his office of King's Counsel; and retiring from practice at the bar, he devoted himself to literature, an occupation that frequently took him to Orleans and Paris, where he became a welcome guest at the houses of the nobles who constituted the party of Anjou.

In 1572, while at Angers, François was visited by his brother John, the Treasurer to Henry, King of Navarre. Whether such passports or safe conducts were at that period sought for by travellers as a

matter of ordinary prudence, or whether they were especially issued on this occasion by the Duke of Anjou, anxious for the safety of his partizans, does not appear, but certain it is that the possession of such a document, addressed to the Aldermen (échevins) of Angers, was the one thing that saved John's life on the fearful day of St. Bartholomew. It is quite likely that François was protected by a similar document; at all events, no harm befell him.

In the following year François was taken more immediately under the protection of his royal patron by being appointed his Master of Requests, in which capacity he delivered a Discourse on the 29th May, 1574, which was regarded at the time as full of learning and timely suggestion. On the day following, namely, on the 30th May, 1574, the King of France, Charles IX., died, and was succeeded by his brother the Duke of Anjou, as Henry III. It would be supposed that from a master whom he had served so faithfully, Grimaudet would have received a reward befitting his own great merits and the good fortune of his royal patron; but whether it was that the exigencies of State made it necessary for Henry to conceal his pretensions by relegating to obscurity those who had previously maintained them, or because our author was not anxious for additional preferment, we hear little of him during a reign which he had done so much to emancipate from the suzerainty of Rome. Henceforth Grimaudet's life seems to have been devoted entirely to literature, a circumstance which, while it deprived his own age of the benefits of his activity, has enriched posterity by its legacy of wisdom and research. The following is a list of his works:

Commentaria ad edictum de jurisdictione judicum præsidalium, publicatum anno 1550; Paris, 8vo. *Remonstrances aux États d' Angers;* Angers, Tours, Paris, 1561, 8vo; Poitiers, 12mo. *Paraphrase du droit des retraits lignagers;* Paris, 1564, 8vo.

These treatises were all republished in folios as the works of François Grimaudet by P. Ayrault, at Amiens and Paris, 1669, together with the following:

De la Nature, Variété et Mutation des Lois; Paris, 1569, 8vo. *Des causes qui excusent le dol;* Paris, 1569, 8vo. *Paraphrase du droit des usures et contrats pignoratifs;* Paris, 1577, 8vo. *Paraphrase du droit des dixmes inféodées et ecclésiastiques;* Paris, 1574, 8vo. *Traité de l'Augmentation et Diminution des Monnoies;* Paris, 1579. 8vo. Translated into English and republished with the title of *The Law of Payment;* New York, 1900, 8vo. *De la Puissance royale et sacerdotale;* Paris, 1579, 8vo. *Opuscules politiques;* Paris, 1580, 8vo.

Works of Grimaudet omitted from the collection of Ayrault:

De Hæreticis a principe puniendis et gratia hæreseos resipiscentibus facienda; Paris, 1560, 8vo. *Traité de la Dignité royale dans l'Église;* MS. *Annotations sur la Coutume d'Anjou;* MS.

Grimaudet died on the 29th August (formerly St. Augustine's Day) in the year 1580, aged 60 years. W. M.

GRIMAUDET'S

LAW OF PAYMENT.

CHAPTERS.

TRANSLATOR'S PREFACE.

Notwithstanding the numerous laws favourable to creditors, which have been enacted in various countries during the past thirty years, the Law of Payment is still very unsettled. To say nothing of the chances that silver may be remonetized at one of the great historical ratios—a subject, the discussion of which would open a political controversy with which this work has no concern,—there is the probability that the requirements of a growing population and trade will impel the American government to authorize excessive issues of paper notes; and there is also the possibility that these issues may in time fall in value below coins of the same denominations. The acquisition of Cuba, Puerto Ricto, the Hawaiian and the Philippine Islands has added many millions to our population and will in due time drain away no inconsiderable portion of our circulating money, which will necessarily be slow to find its way back to governmental and financial centres for re-disbursement. When this drain begins Congress will inevitably be called upon to authorize an increased issue of notes; and as it will be difficult for legislators to accurately measure the void which is to be filled in the circulation, it is not impossible that it may be filled too generously. Should the redundancy prove sufficiently great to be noticeable, the creditor class will undoubtedly resort to the device of couching their contracts in special moneys, or "species;" and the courts of law will again and again have to pass upon the Law of Payments.

The important question then will be: is a contract for species, or a special kind of money, for example, gold coins of a given weight and fineness, lawful, valid and enforceable? Contrary to general belief, the Act of February 14th, 1900, *does not* settle this question, the Federal Courts *have not* settled it and the States Courts *cannot* settle it. Whenever it comes to be settled, it is safe to say that the legal arguments and judicial decisions contained in Grimaudet's admirable work will have to be consulted.

The Roman jurisconsults held that "that was money which the law declared to be money" and that the maintenance of this principle was essential to the safety of the State. It was in fact upheld in numerous decisions by the Imperial courts of law during many ages. The same principle was afterwards affirmed by the courts of the great States which grew up from the ruins of the ancient Empire. This is abundantly shown by our author. Shortly after the publication of his admirable work the same Law of Payment was affirmed in the celebrated Mixt-Money Case, which was tried at Trin., 2 Jac. I., 1604. This decision entirely destroyed the validity of contracts for special moneys in Great Britain, and to this day the decision has not been reversed. However, its consequences were cleverly evaded by the land-owners and financial classes of England, who obtained the passage of an Act (18 Car. II, c. 5) which authorized and commanded the unlimited and gratuitous coinage of the precious metals by the government on individual account and the legal acceptance of such coins by the community. So long as the money of the Kingdom consisted exclusively of coins, this sinister act served its purpose, because it put an end to the coinage of overvalued issues by the State, whose credit it thereby usurped. But its operation was unwittingly arrested and greatly modified when the Bank of England was authorized to issue paper notes (1694), a result that became painfully evident during the Bank Suspension of 1696-8 and notably during that of 1797-1821. The exchanges of commercial states have since become so enormous that the available quantity of coins is now concededly inadequate to maintain the customary level of prices, and paper notes (to say nothing of bills of exchange and book credits) have become an indispensable adjunct to metallic issues; indeed, in some countries they have entirely superseded coins.

TABLE SHOWING THE POPULATION, STOCKS OF COINED MONEY, PAPER MONEY AND TOTAL MONEY, MONEY PER CAPITA AND PERCENTAGE OF PAPER TO TOTAL MONEY, IN USE IN THE EUROPEAN WORLD (INCLUDING AMERICA AND THE COLONIES) AT INTERVALS SINCE 1829. (POPULATION IN MILLIONS; STOCKS OF MONEY IN MILLIONS OF POUNDS STERLING; PER CAPITA OF MONEY IN STERLING SHILLINGS. TURKEY AND ASIATIC RUSSIA EXCLUDED.)

Year.	Pop.	Coin.	Paper.	Total.	Per Cap.	Paper p. c.
1829.	240	345	115	460	38 *sh.*	25
1850.	300	400	169	469	38	30
1876.	400	700	462	1162	58	39
1883.	430	600	600	1200	56	50
1893.	470	550	665	1215	52	54½
1896.	500	600	744	1344	53¾	55⅜
1900.	525	788	787	1575	60	50

Such being the case, the principles of the Roman Law of Payment have obtained a new lease of life. Perhaps it is in view of this circumstance, that such systematic efforts have been made to evade its operation by inducing the government more and more to surrender the issues of paper notes into the hands of the so-called "national" but really private, banks.

At such a juncture the work of Grimaudet, though written three centuries ago, becomes an invaluable guide to the legislator, the jurist, and the citizen. Indeed, I know of no other work in the whole range of economical or forensic literature that fills its place. It is thorough, for it recites all the decisions; it is impartial, for it gives the arguments on both sides of the question; and it is conclusive, because it proves first that government has the right to issue any kind of money and stamp such value (or denominations) upon it, as it pleases; that such right is one of the necessary prerogatives of sovereignty; that all debts are payable in such money as is legal tender, or current, on the day of payment; and that no man can contract himself out of the operation of these fundamental laws. WILLIAM MAUDE.

New York, May 1, 1900.

THE LAW OF PAYMENT

CHAPTER I.

THE INVENTION OF MONEY.

Money was devised to facilitate commerce and promote equity—Why it must have the stamp of the State—Coinage, or the creation of money, is a necessary prerogative of State—The earliest moneys—Servius Tullius, the first Roman magistrate who stamped money—The bronze nummularies of Rome and their origin.

ARISTOTLE says that "money was devised to facilitate commerce between man and man and to satisfy a social want." In the early stages of societary life, men traded by barter, but as such trade was crude, difficult and limited, this practice gave way to the legal institution and use of money, which last, for this reason, received the name of nummus (from the Greek word nomos, or law,) because all its efficacy is derived from law. The pieces of money or coins were originally made of gold and afterwards of iron, silver and other substances. These at first were stamped with rude designs (sufficient to indicate their lawful origin); afterwards their denomination and value were specified. Thus the symbol and denomination of the denarius (the ten-ace piece) indicated or gave warning (monere) of its value. From the verb moneo (to warn) comes the Latin word money. The highest of the Roman authorities held these, or similar views.

The following principles of money are from the Pandects of Justinian and are said to have been introduced into that code of laws from the works of Julius Paulus, a Roman lawyer of the third century of our æra. They may be much older. "As it seldom happened that what one (man) possessed (to sell) the other (man) wanted (to buy)—and conversely—a device was fixed upon, whose legal and permanent value remedied, by its homogeneity, the above-named difficulties of barter. This thing being fabricated by the State, circulates and retains its value not so much from its substance, as from its limited quantity." However, the invention of money in Rome was long anterior to the codification of the Civil Law. In other States, money was of still greater antiqity. Abraham used a kind of money called

shekels, which Josephus says were four times the weight of Attic drachmas.[1]

Herodotus, in the First book of his History, affirmed that the Lydians first struck gold money; whilst Strabo alleged that Pheidon (of Argos) first struck silver money. Macrobius relates that Saturn, having entered the domains of Janus, and taught him to cultivate the earth, Janus invited the god to share his kingdom, and in token of this joint rule caused the bronze money of Rome to be stamped on one side with a double-faced head, and on the other with the prow of a ship, in memory of the vessel from which Saturn landed upon the shores of Latium. Pliny has a different account of the Roman brass or bronze money, which he says was not coined until the time of Servius Tullius, previous to whose reign, the only money in use was brass bars or ingots. In proof of this he adduces the statement that when he organized the trade-guilds, Numa Pompilius (who was earlier than Servius Tullius) though he included brass-founders, did not include brass-coiners; from which, Pliny inferred that there were none at that time.

According to the same author the earliest design on Roman coins was a sheep (pecus) from which he deduced the word pecunia. He afterwards mentions that the brass Ies or Ace, was stamped with the two-faced effigy and ship's prow. In this manner he intimates that the Janus-head coins were later than those of Servius Tullius with the sheep. Ovid is of the same opinion, namely, that it was not Saturn who stamped this sort of money, but posterity, who did so in his honour. Says Ovid:

> . . . . . sed cur navalis in ære
> Altera signata est, altera forma biceps?
> . . . . . .
> At bona posteritas puppim servavit in ære
> Hospitis adventum testificata Dei.
>
> *Fastes*, I, 229, 239.

Other nations have stamped their coins with commercial and miscellaneous devices.

[1] The earliest shekels (coins) of the Hebrews were struck by the Asmonians under the authority of their suzerain, Antiochus IV., B. C. 176-64. About a quarter of a century later when Judea revolted, Simon Maccabæus struck independent silver coins, of which sixty or more genuine examples, in good condition and still extant, were weighed by Queipo and found to contain about 49⅓ English grains of silver each. This was about the same weight as one Attic drachma, (not four drachmas,) of the same period. As the statement of Josephus relates to shekels of the time ascribed to Abraham, and none such are extant, it cannot be positively confirmed or contradicted. However, the authorities of the British Museum deny that any coins at all, whether Hebrew, Greek or any other, existed at the period ascribed to Abraham.

CHAPTER II.

RIGHT TO ISSUE MONEY.

The value of money depends upon the State—The right to coin money belongs only to the State—Why Ariander was condemned to death for coining—Simon Maccabæus obtained lawful privilege to coin—Money coined at Rome by the præfecti of the Mint—Declaration of the right to coin money—Emperor Frederick—Emperor Charles IV.—The coinage privileges granted by them did not include the right to coin gold—Cause of the war between Justinian II., and Abd-el-Melek—Authority granted by the King of France to the Duke of Bretagne—Whether kings can change the monetary system without consulting the people—The King of France may do so—Money may only be coined in places permitted by the State—The place in ancient Rome where money was coined—Money was also coined in the provinces—The places in France where money was coined—In Aragon the reals have to be coined in Valencia—Rebellion of coiners against the Emperor Aurelianus—The Comes sacrarum largitionum.

THE value of money depends upon the State: that is to say, in a monarchy, upon the prince, and in an oligarchy, upon the State, which alone has the right to coin money, or to have it coined and to stamp a valuation upon it. No private persons may do this, because they neither have the right to command nor the power to enforce, obedience, as is required of one who coins, or has money coined for the use of the people, among whom it is to circulate at the value stamped upon it. None may refuse it in commerce. Such attributes cannot be given to pieces of metal struck by private persons. For this and other reasons the right to coin money has always been upheld as a royal prerogative. The King alone has authority to make laws for the use and circulation of money, an authority, says Baldus, which prevails in all places owing him allegiance. None other but he and those to whom he has given authority, may coin or issue money, not even his governors or viceroys. This rule is shown by an ancient example given by Herodotus, who says that Darius, King of Persia, having coined gold money, stamped with his own image, Ariander, his viceroy in Egypt, was accused and condemned to death, for having coined similar pieces in silver. For the same reason the Jews, who were subjects of Antiochus, son of Demetrius, King of Asia, could not coin money without the consent of Antiochus, until Simon Maccabæus, their leader, obtained from him the right to coin.

At Rome, after the kings were expelled, money was coined by the magistrates, called præfecti monetales. In the time of the Roman emperors, the right to coin money was jealously guarded; and though

some individuals obtained from them authority to coin silver money, this authority was declared by Valentianus, Theodosius and Arcadius, to have been wrongly obtained; and it was annulled. This annulment, Accursius (thirteenth century) declares had reference only to private persons, not to public persons, towns, or communities, that had obtained this privilege from the prince.

After the princes, influenced by the Germans or Almans, took the title of Emperors, many noblemen (seigneurs), towns, and communities of Italy, being ravaged with wars, usurped the right to coin money. This right they afterwards surrendered to the Emperor Frederick Barbarosa, as is shown by a clause of the constitution, the title of which is "Qua sunt regalia."

This same Emperor, by special favour, granted to Pope Lucius III.. that in Tuscany no other money should circulate except that which was coined in Lucca, where he (Lucius) was born. Afterwards, the Emperor Charles IV., in his letters patent, called "Bulla Aurea," which he issued as a guide to the Electors, princes and cities of Germany, and in order to maintain concord between them, allowed the Electors of the Empire, ecclesiastic as well as secular, to coin gold and silver money in their several dominions. Most notable is the circumstance which René Choppin, King's Advocate, writes in his commentaries "de Jure domanii," a copius and learned compendium of royal laws, namely, that the privilege of coining money, when granted by the sovereign, did not include the coining of gold, because this metal being the purest and finest of all the metals, therefore it is reserved for coins which are stamped with the effigy of the sovereign.

Pierre Ayraut, Judge of the Court of Angers, took note of this fact, apropos of Procopius, that in the Roman Empire it was not permissable for any prince, except the Emperor, not even the King of Persia, nor any other of the subject princes, to coin gold. If any person obtained the privilege to coin metal, it could not have been gold. The effigy of the Emperor had to be stamped upon all coins of this metal and he alone might stamp his effigy.

For this reason Leontius, Lieutenant-general of the army of Justinian II., (as Zonaras writes,) broke the treaty of peace made with the prince of the Arabs (Abd-el-Melek) upon pretext that the tribute money sent every year, was not stamped according to Roman law and custom, it being contrary to law that gold pieces should have any other stamp upon them than that decreed by the Emperor of Rome. A similar occurrence in 1464 was the cause of the disgrace of the Duc de Bretagne with the king of France. The Duc had coined gold money

stamped with his own image, contrary to the treaty of peace made at Angers in 1231, between Louis IX. and his ancestor Pierre de Dreux, Duc de Bretagne, and his wife Alexia, by which he was forbidden to coin any except white and black money. (Mauclerc.)

It may be asked here whether a prince is obliged to get the consent of his subjects when he determines the material of which money is to be made, or imposes a value, or alters the value, of the same. This certainly should be the practice, because money is for the convenience of the public, who are exposed to danger if it is made with less metal than it should be, therefore they have great interest in being consulted concerning such ordinances, in order to conserve their rights and to retrieve such loss as may follow; especially when the prince is influenced by interested counsellors. Such counsellors Pope Innocent III. calls public traitors. It therefore appears that the consent of the people *is* requisite in making ordinances which alter money. Such is the opinion of Lucas de Penna, Petrus de Ancar, and the Abbots Siculus and Debelluga, an opinion which seems to be favoured by Innocent in his Decretale "d. c. Quanto," which disapproved the ordinance of the King of Aragon ordering the lowering or weakening of money, because the ordinance had been made without the consent of the people. Such an ordinance could not lawfully be made in kingdoms where the Kings do not have absolute sway; for example, in ancient Sparta, where the kings had Ephores to control their actions, or in Venice, where the Doge could do nothing without the advice of his Council.

In France, however, the kings have more absolute power and they can make and alter money without the consent of the people. Faber is of opinion that they alone can grant authority to coin money. Guido Papak states that the Dukes of Dauphiny and the country about, having obtained this privilege from the Mint of Paris, are the only nobles of France who have the authority of the king to coin money. The same authority has prescribed the material, the alloy, the weight and the stamp which the coins must bear. In order to control the coinage of money and prevent its falsification and deterioration, it is forbidden to be coined anywhere except in the places stipulated.

In Rome, money was coined in the house of Manlius, who was condemned for læsæ majestatis. Livy, (VI, 20,) speaking of the evidence against him, says: Adjectæ mortuo notæ sunt; publica una; quod, quum domus ejus fuisset ubi nunc ædes atque officina Monetæ est. This place was consecrated to the goddess Juno Moneta. The reason

is given by Cicero in his Treatise on Divination, I, xlv. He says it was due to a *warning* voice which issued from the enclosure when Rome was besieged by Gallic Senones. Ovid (VI, 183) also tells us:

> Arce quoque, in summa Junonis templa monetæ.
> Ex voto memorant facta Camille tuo.

There were places in the provinces where money was also coined, as in Appolonia in Albania, anciently called Epirus, as we note from the words of an epistle of Cicero to Plancus. Cum signaretur argentum Apoloniæ non possum dicere eum præfuisse, noque possum negare eum adfuisse. Strabo says that the Roman magistrates had gold and silver money coined at Lyons. Charlemagne in one of his capitularies ordered all money to be coined in his own palace.

In this kingdom of France there were anciently twenty-five cities where money was coined, which by ordinance, made at Blois in the year 1540 by King Francis I., were reduced to seventeen, as follows: Paris, Lyons, Troyes, Rouen, La Rochelle, Bordeaux, Bayonne, Limoges, Tholouse, Montpelier, Angers, Tours, Nantes, Renes, Dijon, Grenoble and Marseilles. In order to distinguish the place where each piece of money was coined, the same ordinance provided that the engravers appointed by the King should put on their coins a mark indicating the place where it was coined and the name of the Mint-master. All moneys and matters pertaining thereto were subjected by the same ordinance to the superior jurisdiction of the Mint established in Paris. In Spain, by the ordinance of Valencia, made by King John, who conquered the Kingdom of Aragon, it is expressly provided that reals shall be only coined in Valencia and that the mintners shall be supervised by two well known citizens, so that no fraud shall be committed as to material or weight. (In England this supervision is called the Trial of the Pyx. Trans.) In Aragon there was no private coinage, as there was in ancient Rome, where a certain number of mintners were formed into a corporation by Numa Pompilius.[1]

When the Romans, according to Pliny, used ingots of copper in trade (since called money), the mintners, who were entrusted with the coinage of money, were taken from a low class of men who could not be exalted to any dignity. In after times, there were great numbers of mintners and they appear to have been badly treated. Vopiscus and Aurelius Victor state that in the reign of Aurelian they became so powerful, that being led by Felicissimus, they rebelled against the Emperor and openly appeared in arms against him, so that before they

[1] This does not contradict the statement from Pliny, on a previous page, because the latter only relates to bronze coins. Trans.

were suppressed seven thousand of the imperial troops were killed. Under the Emperors, the coinage was subjected to an officer called Comes Sacrarum Largitionum. Upon the coins appeared the effigy of the sovereign-pontiff. This we learn from the formula of the charge given to this magistrate which appears in Cassiodorus. Verum hanc libertatem, (says he,) nostram alio decoras obsequio, ut figura vultus nostri metalis ususalibus imprimatur, monetamque facis de nostris temporibus futura secula commonentem.

In this Kingdom (France) mintners are much better circumstanced, because they have a great number of immunities contained in Letters Patent granted by Phillippe le Bel, Charles le Bel, his son, and their successors. The jurisdiction of money, the regulation of the alloy, weight and stamp, and the appointment of officers of the mint, is given to the General Mint established in Paris; to whom is also given absolute power to judge of moneys as a court of last resort. This last function was created by edict of King Henry, published at Fontainebleau in January, 1551, and certified in the Court of Parliament in May, 1552.

CHAPTER III.

THE ESSENTIALS OF MONEY.

The earliest Roman coins were made of bronze (ære)—Edict of Marius Gratidianus—Mark Antony debases his silver coins with iron—Edict of the Emperor Tacitus—The medieval silver coins were nearly pure—Anciently the Lacedæmonians and Byzantines used iron coins—Tin coins of Dionysius Tyrannus—Lead coins—Leather money of Frederick II.—Chinese and Tartar leather and paper moneys—Salt money of Prester John—The usual coinage metals are gold, silver and bronze (ære)—Metallic mixtures, or alloys—Obrysum, or pure gold—Argentum pistulatum, or pure silver—Standard coins of gold and silver—Crown silver—Silver bullion.

FOUR things are requisite in money, the material, the weight, the stamp and the denomination, or value. The customary materials of coins are gold, silver and bronze. Bronze was the earliest metal stamped as money at Rome. Pliny writes that the place where the public treasure was amassed was called Ærarium, while the treasurers who had charge of the place were called Tribuni æerarii. The soldier's pay was called ære militum. Debts were called ære and those who owed them obærati, that is to say, charged with debts. Æs nostrum is that which is due to us and æs alienum, that for which we are indebted. I shall not speak here of how copper was anciently esteemed in Rome nor of the Corinthian bronze, of which Pliny, (II, 30,) has written sufficiently.

Silver money was first struck at Rome A. U. 585, (B. C. 169,) in the consulate of Quintus Fabius, five years before the first Punic war. Sixty-two years later, gold coins were struck at Rome.[1] The purity of the coins was soon afterwards corrupted. About B. C. 92 Livius Drusus, Tribune of the People, authorized an eighth part of bronze to be put in the silver money, from which it was called Aurum argentosum and from the copper (ære) it was called Ærosum. In opposition to this, Marius Gratidianus issued an Edict about B. C. 90 specifying the weights and alloy of the coins and providing for the restoration of the former standard. Nevertheless, Mark Antony afterwards mixed iron with the silver in his denarii. To prevent the mixing of silver with gold, and of bronze with silver, or lead with copper, the Emperor Tacitus made an Edict (says Flavius Vopiscus) which prohibited such mixing and condemned those who were convicted of this offence to capital punishment and their property to confication. In eadem oratione (says Vopiscus) constituit ut si quis argento publice privatimque æs misquisset, si quis auro argentum, si quis æri plumbum, capitale esset cum honorum proscriptione. Constantine enacted a similar law, adding that those who were convicted should be held guilty of læsæ majestatis.

In this Kingdom (of France) the coins were made of nearly pure silver down to the time of Philip le Bel, who was the first to debase the money of France, making the coins two parts of copper and the third of silver. At least so says Antonine. Dante calls Philip the Great Debaser of money. These debased coins so infuriated the people of Paris that they sacked the houses of those who, it was reputed, had counselled the change, especially the suburban residence of a man named Etienne Barbette, near Paris. Afterwards they went to his town house in the rue Sainte Martin in Paris, broke in the doors and windows, pillaged the coffers, smashed the furniture and rioted there all day in great numbers; so that the King's officers were frightened and the King himself, greatly concerned.

Money was made of iron in ancient Sparta by order of Lycurgus, circ. B. C. 884, who, as Plutarch writes, prohibited all kinds of gold and silver coins and ordered that such iron money only should be used. In Byzantium, afterwards called Constantinople, iron money was used, about B. C. 431, which was proverbially called Nummus Sparteus or Spartan money; in other words, money of great value, but little cost.

[1] This account is from Pliny. The numismatic finds prove it to be quite worthless. Cf. Del Mar's History Monetary Systems. ch. III.

Tin money was employed by Dionysius, the Tyrant of Syracuse, who made it legal-tender. Plautus mentions a denarius of lead, cui homini, says he, in casina hodie peculi nummus non est plombeus. In his comedy of Trinummus he says cui si capitis res siet nummus nonquam credam plumbeum. Erasmus, under the head of Nummus Plumbeus, notes that lead money was also used in England.

Money has not only been made of metals, but of other materials, such as leather and paper. Cœlius Rodiginus speaks of having read that Numa Pompilius issued leather money and that he conferred upon the people both wooden and leather moneys. Seneca speaks of this leather money (lib. v, de Beneficium) and notes that the Lacedomonians also used it. Æs alienum habere dicitur, (says he,) et qui aureos habet, et qui corium forma publica percussum quale apud Lacedæmonios fuit quod usum numeratæ pecuniæ præstat.

The Emperor Frederick, when pressed by necessity, also used leather money, a fact which lends great probability to the opinions of those who hold that in this kingdom (of France) leather money was also used. Some say that it was in the time of Saint Louis, while he was a prisoner in Africa, others say in the time of the captivity of King John. Olaus Magnus writes that in the Northern countries leather money, with a little silver nail driven through it, was long in use. Sabelic writes that the Cathayans and Tartars used paper money in a square form, on one side of which was printed the seal of the Emperor. Leo Africanus writes that Prester John did not use metallic money, but pieces of salt, which he valued at so much money, prohibiting the use of gold and silver for coins. He amassed all the gold he could, and locked it up in safe places. By this plan he became richer than all other princes, ancient or modern.

From what has been said it is manifest that of the various materials of which money has been made, the best have been gold and silver. Yet the use of these metals engenders avarice and is the cause of much of the wickedness and crime with which the human race is tainted. While it is true that money can be made of other materials besides metals, yet it has commonly been made of metals, chiefly gold, bronze and silver. No other metals were used in the coinages of Rome before or since the Empire, except when Mark Antony mixed iron with silver. Pomponius therefore declared that the Triumviri monetales were so called because coins were made only of æris, argenti, et auri flatores. The other materials mixed with them, such as has since been done in this kingdom of France, were but the alloys of coins and not the principal materials of them. In this respect the less val-

uable metal was used to alloy the more valuable, as copper mixed with silver or silver with gold. Gold has also been mixed with copper. Indeed this is still done and by the authority of law. A certain proportion of each metal is mixed, together forming an alloy. The prescribed alloy is called standard bullion.

It appears that anciently coins were sometimes made of a nearly pure gold, called obrysum. Hence they were called solidi obrysati. Money has also been made of pure silver, called argentum postulatum. Coins of absolutely pure metal, though easier to strike than alloyed coins, were rarely struck hy the ancients. The refiners account for this by alleging that no matter how much gold is refined, there remains always a little silver, copper, or other material, in the bullion, and that the greatest practical purity is 23¾ carats out of 24. The gold coins which circulate to-day are not made of fine gold, because they would be too soft and pliable and would not withstand the wear and tear of commerce, nor preserve their stamp. In order to make gold coins harder, they are usually alloyed with silver. The monetary ordinances prescribe the proportion of silver which is allowed to be added. This is declared in carats, a term used by the goldsmiths in order to measure the degree of fineness of gold. Fineness cannot be greater than twenty-four carats. The proportion of alloy which the mintners and coiners are allowed to add to gold or silver. is called remedy or allowance.

As the fineness of gold is marked by carats, so the fineness of silver is marked by pennyweights. The greatest degree of fineness in silver is twelve pennyweights: yet practically pure silver cannot be made. No matter how carefully refined it is, the finest known silver is only eleven pennyweights and eighteen grains fine (0.979,167 fine). A French collet has 11½ pennyweights of silver and a half pennyweight of copper. This last alloy being lawful by ordinance of the King, such silver is called crown silver, or standard silver of Paris, (0.958,333 fine). To recognize good silver alloyed with copper or other material, it should be understood that under ten deniers, or ten-twelfths fine, it is not called silver at all, but billon. In making the coins called douzaines (worth a French penny each) which coins have been struck during the last two hundred years, the silver is lowered to three deniers, sixteen grains, fine metal; the rest is of copper. Further information on this subject is contained in the work of Molinæus or Du Moulin in Latin and French, Question No. 100, where will also be found an extract from the records of the Mint of Paris, which gives the materials, the alloy and weight of the various coins.

CHAPTER IV.

THE WEIGHTS OF COINS.

The Greek Mina, the Libra and the Pondo were the same thing—The Libra, or Livre, in France—The Mark—The weight called the ounce and its parts—Weights of Roman coins—Denominations of money—Weights of coins—Law to inspect and weigh money—All the Roman moneys formerly conformed to weights.

BEFORE treating of the weights of coins it will be found expedient to speak of weights themselves. The Greeks had the Mina which was called by the Romans the Libra or Pondo. The Attic mina was heavier than the Roman libra by four drachmas, because the mina contained 100 drachmas and the libra 96. In coins, this difference is so small, it is hardly noticeable. The mina and libra were each divided into 12 ounces and each ounce into 8 drachmas, or Roman denarii, both having about the same weight. The drachma had 3 scruples and the scruple, 2 oboles.

In France we have two different livre weights, one is for merchandise and weighs 14 ounces; the other called poid de marc, contains 16 ounces, like the Egyptian livre, which also contained 16 ounces. The French marc contains 8 ounces. The jewellers and bullion dealers use this weight. The ounce of the moneyers and bullion dealers, as reported by Budæus, equalled 576 French (or 472.19 English) grains and was divided into 20 esterlins, or 8 groats. The 2-groat weight equalled a quarter ounce, which was the weight of the Noble à la rose, or the ancient "Philip" of France, or a desudict (?) noble. The Attic Stater was of the same weight (a quarter of an ounce) and according to Paulus, the gold coins in Rome weighed either the same or else double that of the silver coins.[1] The (medieval) moneyers divided the marc in another manner—into 24 deniers.

Money is usually counted by denomination, value, ratio, or tale (taille), the moneyers using the word sols to signify 12. Thus Du Moulin (Molinæus) speaks of the Carolus as consisting of 6 sols 8 deniers taille; that is to say, 6 sols equal 72 deniers and 8 more make 80, which was the number of little bronze deniers to the Carolus. This subject is treated at length by Claudius Galenus in his "de Ponderi-

[1] So established by the system of Julius Cæsar B.C. 45. The denarius weighed 62½ English grains, and the aureus 125 English grains. However, the former only contained 60 grains of fine silver, whilst the gold coins were practically pure. The ratio was 12 for 1.

bus" and by Alciati, in a work with the same title. Originally the stamp or mark of authority upon coins gave testimony as to the authenticity of the material of which the coin was made, as well as to its fineness and correct weight. This was afterwards found to be unnecessary. Since the corruption of weights and of material, it has been made lawful to inspect coins with the object to determine their weight and alloy. Pliny, VI, ii, 22, writes that even in his time, sellers sometimes had a warrant to examine and weigh all the coins offered to them, to see if they were corrrct. This practice is revived to-day. All payments made in gold or silver coins may be tested by weight. Pliny states that the coins of the Empire were of many sorts; nevertheless that they were all related to the libra. It is so with the coins of this Kingdom; they are also all related to the livre.[2]

CHAPTER V.

MARK OF AUTHORITY UPON MONEY.

Coinage marks of the Greeks—Of King Darius—Greek coins known to the Romans—The Roman stamp of Janus and the ship's prow on the bronze coins—Roman silver coins.

THE Athenians stamped their coins on one side with the owl and on the other, with the effigy of Jupiter. The Samians having gained a victory over the Athenians and taken a number of prisoners, mocked them by having an owl branded on their foreheads. The Athenians also stamped their coins with a bull. This "bull" was worth 2 Attic drachmas. The bull was first stamped by Theseus in memory of the Marathon bull or the emblem of Minos, which was employed, as it is said, to incite the citizens to agriculture. This money is alluded to in the following line: "Bonem habere in lingus." The Athenians had also a piece of money stamped with the image of Pallas, whose temple, by Euripides, is called the Parthenon.

The Trœzeniens in honour of Neptune, whom they adored as the God-protector of their city, stamped their coins with a trident, which is the attribute of that god. The Corinthians stamped their coins with the figure of Pegasus; the inhabitants of Chios with the figure of Homer, who is said to have been a native of that country. The people of Mytilene used the image of Sappho and the inhabitants of Ragusa, the figure of a hare. Darius, King of Persia, used the figure of an

[2] For explanation of this practice see "£ *s. d.*" in Del Mar's "History of Monetary Systems."

archer on his gold coins, which were called Aureus Daricus, of which Agesilaus found occasion in his Apoththegm, to say that he was chased from Asia by 30,000 archers, signifying that the King of Persia had bribed the Athenians with this sum to secure him.

Three species of Greek coins were known to the Romans in the time of the Emperors: streiotes, cistophores and testudinati; the first bore the effigy of an armed man, the second a wreath of ivy and the third a tortoise, which last was the stamp of the Peloponessians. The Egyptians (of the Ptolemaic period) used the figure of the ox Apis. On the coins of the ancient Romans there was on one side the image of Janus with two faces; on the other, the prow of a ship. With this piece, the Roman youth were accustomed to play pitch and toss. Throwing the piece of money into the air, they chose the "Head" or "Ship," just as to-day children play a game called "cross" and "pile."

In our first chapter we touched upon the reason of this stamping. Plutarch, in his brochure on the Demand for Roman Things, justly says that there is nothing good and honest in cities, yet much that is necessary to living. Janus instituted good government, established good laws in Italy and reformed the manner of living, which had previously been rude and savage. The river Tiber being navigable, enabled him to afford the Romans abundance of supplies. Therefore coins bore the stamp of the Founder (the head with two faces) by reason of the improvement in the means of living which he introduced. The Romans also used another kind of money on which there was stamped the figure of an ox, sheep, or hog, signifying that their wealth was chiefly pastoral. From this circumstance is derived many of their ancient family names—such as Shepherd, Cowherd, Swineherd, etc. At least so says Fenestella.

The Roman silver money was stamped with a two-horse chariot, also with four horses, coins which were respectively called bigati and quadrigati. Coins were also stamped with the effigies of the gentes and other notabilities. In the time of the Emperors the coins were stamped with their images, also with the mark of some memorable act, such as victory over a subjugated province, a king vanquished, sacrifices, and other notable events.

In this kingdom (France) the arts were once so rudimentary that we cannot make out the emblems on the coins of the ancient Gauls nor of the first two families of Merovingian Kings, nor of Pepin and his descendants. As to the coins of the Capetian dynasty, the oldest gold coins, écus, are stamped with the effigy of King Philip, (A. D. 1270-85,) which is the reason that they were called "Phillipuses."

King John was represented on his coins as armed and mounted on a horse. Those of King Charles, on one side represented Justice; on the other side was a cross. The écus since made by other kings are stamped on one side with a cross and on the other side with the shield (écu) of France, from which they take their name of écus. King Henry II. had the écus and double écus (called "Henrics") stamped with his own effigy. Large silver coins stamped with the effigy of the King called Testons, had on the reverse the shield of France. The billon and the tin coins were stamped with a cross on one side and the fleur-de-lis on the other. The Germans, Italians, Spanish, English, Scotch and others, had lengthy legends on their coins. However, most of their coins are stamped on one side with the effigy or arms of the Kingdom or Republic by whose authority they were made, and on the other side with a cross.

CHAPTER VI.

LEGAL VALUE ASSIGNED TO MONEY.

The value of money is what the law imposes—Such value should be proportionate to that of the material—The value of money depends upon the will of the Prince—The Prince should not augment the value without the pressure of great necessity—Two benefits of money—The material and its value are both considered by the Prince in striking money—The value imposed depends upon the Prince, not upon the material—Why mention is made in edicts of the material, of which money is made—The question as to whether the material of which money is made, is good or bad, belongs to the Prince, not to the people.

WE shall now speak of the effectiveness or value of money, which in every state should substantially conform to that of the material of which it is composed. That the imposed value should not exceed the value of the material, is the opinion contained in the glosses of Bartolus and of Baldus.[1] Nevertheless the doctors of the Canon law [2] have held that the chief magistrate may legitimately reduce the standard, and thus increase the profits of coinage. There are others who hold that the value of money should entirely depend upon the will of the Prince. Such indeed has been the practice and some princes have made great profits from the coinage. This is tolerable when it is done from public necessity, but if the Prince augments the

[1] In lex 1, ff. de contra. exemp. et vendit. In d. lex 1; et in lex qui falsam C. Ad. Leg. Cornel. de fals.; in lex 1, de veter. munif. protest. lib. 11. C. In lex non amplius § fin. col. 4, ff. de leg. 1, et in lex Titia § fin. ff. de Ann. leg.

[2] In lex quarto de jur.

value of money when no such necessity threatens, or if he makes coins of inferior material instead of good, *e. g.*, copper, instead of silver, as did Dionysius, he does not act as a Prince but as a tyrant, because the people are bound to receive in trade a corresponding return for such money.

From what has been said it appears that coins have two values; one is intrinsic and due to the material, the other is extrinsic, and is due to the operation of Law. The Prince in striking coins, should take great care that the imposed or legal value does not exceed the value of the material, or if so, by very little. The subject has no power to refuse money in trade even when the value imposed by law exceeds that of the material, as in billon money, in which the imposed or legal value is six times greater than that of the material. The extrinsic value of money depends upon the will of the Prince and not upon the worth of the material. This extrinsic value is the very essence of money; not the worth of the material; because when the extrinsic value is taken away it becomes merely so much metal. The jurisconsults who teach us the difference between money and metal, expressly state that under the names of gold and silver are not comprised the coins of these materials.

In all edicts concerning money it is expressly stated of what material it should be made and the weight thereof, so that the subjects of the realm may fully understand its composition. In commerce, the subject may dispute the weight and material of which the Prince desires his coins to be made, but not the value imposed, because the fabrication of money belongs to the Prince, not to his subjects, who owe him obedience. If the money is of the quantity and quality of metal stated in the ordinance of the Prince, it must pass for its legal value without dispute. The imposed or legal value is the law of the land.

CHAPTER VII.

NAMES OF GOLD, SILVER AND BRONZE COINS.

The ancients commonly used coins of gold, silver and copper-bronze—Definition of the Roman ace—First silver money in Rome—First gold money—Diminution in the weight of the gold coins struck by Nero—The gold Aureus—Its value—Declaration "Sed nostra instit. de success. libert."—Wealth of the slaves of ancient Princes—The solidus—The solidus and aureus were the same—The stater of the Greeks, Macedonians and Persians—Gold écus of France and ducats of Italy and Spain—The French douzain and Roman ace—The Athenian obole—Proportionate valne of gold to silver and silver to bronze.

THE principal coins used by the ancient Romans were the bronze ace, silver denarius and gold aureus. Servius Tullius was the first of the Romans who struck bronze money. Concerning the Ace libralis et libella, Varro, in the first book of his "De Ling. Latina," says that "ace" is derived from the word æs, from which the following words are also taken: tressis, quadressis, decussis, et centussis, meaning three, four, nine and one hundred aces.[1] When bronze coins of two "uncia" were made, valued at the sixth part of an ace, they were called sextans. Those of three "uncia" were called triens or teruncius and of four "uncia" quadrans, the last being valued at three to the ace. Long afterwards, in the consulate of Quintus Fabius, silver coins were struck in Rome. The denarius had the value of ten aces, the half-denarius, called quinarius, was valued at five aces and the sesterce at two-and-a-half aces. In modern times and in like manner the deniers Tournois were each worth four carolusses.

According to Pliny, gold was coined in Rome sixty-two years after silver money. The scruple was the ninth of the denarius of gold, or aureus, each of 72 sesterces, so that a gold livre of 5 aureii was

[1] This is a compound blunder. The quotation is from the *fifth*, not the *first* liber of Varro's work, (v, 169.) The word *ace*, not *as*, as given given by Varro, is not from *æs*, which means bronze, but from the sanscrit *ayas*, the Doric *eis*, and the Tarentine *ies*, meaning totality, entirety, or unity, in which sense it was employed by the Romans in numerous cases. This is the meaning which Grimaudet himself adopts (further on in his text) from Volusius Metianus. In the case of the Romans the word was identical with the name of the sun-god Ies, Ianus, or Janus, whose effigy appeared on the coins. Cf. Gibbon, IV, 336; Gaston L. Feuardent in the American Journal of Numismatics, 1878; Rev. Henry Thompson, in his "Dissertation on the Latin Language;" and note to p. 18 of the third (New York) edition of Del Mar's "History of Monetary Systems." Trans.

worth 900 aces. After that period (A. U. 437) the aureus was lowered to the proportion of fifty to the livre weight. Even this was diminished little by little by the Emperors. Pliny writes that Nero struck 55 aureii to the livre weight. The weight of this coin was again lowered in a later age, so that eventually the aureus was coined at the rate of seventy-two to the livre weight.

During the republic the gold aureus was valued at eighteen, afterwards at twenty silver denarii. As the republic drew near its end (second Punic war) the value of the aureus was raised to 25 denarii of silver, or 100 sesterces. This value is verified by Suetonius and Tacitus. In his life of Otto, Suetonius writes that Otto, when he supped, was accustomed to give to each of the soldiers of the guard an aureus, and Tacitus, (Annales, lib. XVII.) says that each 100 sesterces has the value of an aureus. When it is said that an advocate may charge centum aureos for his fee, it means this sum in each cause. In the Civil Law fines are usually stated in aurei or solidi.[2] A poor man was one who was not worth fifty solidi.[3] In this chapter and throughout this work, the modern "écu" is to be taken as synonymous with the Latin aureus or solidus.

Against what is above written, objection may be made from what Justinian writes in "Sed nostra instit. de success. libert.," as follows: Ut si quidem libertus, vel liberta minores sint centenariis, id est, minus centum aureis habeant substantiam, sic enim legis Papiæ summam interpretati sumus, ut pro mille sesterciis, aureus computetur.

In this place the word aureus must not be taken for 1000 sesterces, but as a vehicle for reducing the requirement of the Lex Papia, as to the property to be owned by a freedman, before his patron could accept his succession. In reality one hundred sesterces went to the aureus. By the Lex Papia one thousand sesterces were required. Justinian permitted 1000 sesterces, in the case of a freedman's succession, to be paid with an aureus. In the time of the republic and the first Emperors, when Demetrius was freed by Pompey; Crisogonus by Sylla; Amphion by Quintus Catulus; Hilaro by Antony; Mena and Menogenes, by Sextus Pompeius; Palleus, Marcissus and Licinius by Claudius Cæsar; and in many other instances, the wealth of these freedmen was so great as to rival that of kings and princes. But after the wealth of the Romans was diminished by taxes, tributes, a falling money and other causes, it was but reasonable to diminish the property assessment of those who were still rich, having regard to

[2] Lex ult. lex penult. ff. de in ins. vocad. Lex si id quod. ff. de jurisd. ominum ind.

[3] Lex nonnulli ff. de Accusatio.

the time in which they lived. Justinian, for the benefit of the freedman, reduced each thousand of sesterces to one aureus; not that he estimated the aureus as worth 1000 sesterces, but he ordered that instead of what was formerly required, namely, 100,000 sesterces, it sufficed if a freedman's property was worth 100 aureii in order to admit his patron to the succession. The above suffices to show one meaning of the word aureus or solidus, which is so often mentioned in the laws. To avoid ambiguity, the tributes (capitation taxes) were imposed in aurei. Alexander Severus reduced them to the half-aureus, then to the third-aureus and wished to reduce them to the quarter-aureus, but this was found to be impracticable. It was to enable these tributes to be paid that he struck the half and the third of the aureus, or solidus, which first got this name, says Lampridinus in his life of Alexander Severus, "Vectigalia publica in id contrakit, ut qui decem aureos sub Heliogabalo prestiterant, tertiam partem aurei prestarent, tumque primum semisses aureorum formati sunt, atque etiam cum ad tertiam partem aurei vectigal decidisset, tremisses: dicente Alexandro, etiam quartarios[4] futuros, quando minus non posset quos quidem iam formatos in moneta detinuit, expectans ut si vectigal contraherre potuisset, et eosdem ederet: sed cum non potuisset per publicas necessitates, conflari eos jussit et tremisses tantum, solidosque formari." Ever since this period the solidus and aureus have been taken for the same gold piece. The word solidus signifies "entire." The ace and the libra had the same meaning, that is why the ace and the libra are sometimes called by the name solidus. See Volusius Metianus in his work "De Asse." The Emperor Majorianus in a constitution, de Curiatibus, mentions the Gallic solidus, which was less esteemed than the Roman, because it was of baser gold than the Roman aureus or solidus. The Greek, Persian and Macedonian stater, called Atticus, Philippeus, Daricus and Alexandreus, had divers weights, some of one drachma, others of two, others double, treble, quadruple; and still others of an ounce weight, like the modern Portuguese doubloon.

For the past three hundred years the principal gold coins of Italy and Spain were called ducats. In France we have had the gold franc, worth twenty sols Tournois. When, in France, one sees pure silver coins, they are called Philippuses. The écus (shields) made in the time of King John were sometimes called moutons (sheep); both of them from the effigies they bore. None of the extant edicts of our kings describe the effigies on ancient French coins. As these

[4] This is the origin of the modern "shilling." Trans.

were probably struck from finer gold than later coins of the same denomination, they may have been melted down by the avaricious for the sake of the profit they yielded. During the Roman republic the gentes and after them the Emperors had their effigies stamped on the coins, with the object to commemorate their names and honourable record. In regretting the disappearance of these effigies on the coins, one practically only regrets the superior material of which they were made.

In France we have coins of bronze, silver and gold, just as the Romans had; and we have the Tournois douzains (which were first made of billon by Charles VII.) just as the Romans had the ace, because it divides into 12 Tournois the deniers of bronze, like the Roman "ounce" division of the ace. We also strike a double bronze coin answering to the ancient sextantes. The liards, which are slightly alloyed with silver, are also called quadrains, teruntis and quadrantes. So, anciently, the first denominations of money were the "uncia" and the ace. The first counting of sums in France is made in deniers; then in sols below twenty, of which number the livre is composed, after which, sums are counted by livres. The numbers that do not amount to 20 sols are added as sols. Below these are the Tournois deniers, sometimes called mailles or oboles, which are not usually spoken of on account of their small value, except in cases where they are added or multiplied many times, as in books of exact account. These coins are of much lower value than the ancient Attic oboles, which were valued at the sixth part of a drachma, practically equal to seven Tournois deniers. Plutarch, in his life of Lysander, notes the word obole, and says there is much conjecture as to whether coins were always round, or drawn out like a skewer or a nail, because the name obole signifies a nail, stick, stem, or reed.

Before finishing this chapter, it is in order to mention the proportionate value of silver to bronze and of gold to silver. Silver metal was anciently valued 100 times as much as bronze, so that one ounce of silver was worth 100 ounces of bronze. The proportinate value of silver and gold has not always been the same. Herodotus notes the proportion (in Persia) of one of gold to thirteen silver. At the time when gold money was first made in Rome, one denarius of gold was valued at ten of silver. This proportion lasted to the time of the Emperors, when it was altered at the ratio of 72 solidi to the libra of gold and five solidi to the libra of silver. According to the edicts of Honorius and Arcadius,[5] the gold libra was worth 14 4-10 times that

[5] In lex internus de Argens. pract. quod thes. inf. lib. 10. c.

of silver.[6] Du Moulin, in Question 100, (Not. 779,)[7] refers to the very ancient registers of the Mint of Paris, where the ounce of gold was valued at eight ounces of silver. To-day, in France and Spain, the ratio of value is one denier of gold to twelve deniers of silver, so that the écu sol of France is worth twelve reals de la marque of Spain, each one of which is of the weight of an écu sol.

[6] This is a bunder, which arises from confusing the libra or pound weight with the pound (libra) sum of money, which consisted of five aureii. The ratio of silver to gold in the Roman Empire was always 12 for 1. This ratio was kept constant by the operation of law from the time of Julius Cæsar to the fall of the Empire in A. D. 1204. Trans.

[7] This 779 refers either to the marginal numbers in Molinæus, a sort of section mark, or else to the paging from a previous volume. Trans.

CHAPTER VIII.

THE TESTING OF COINS.

Marius Gratidianus first established the assay of money, or Trial of the pix—The Emperor Julian appointed magistrates called zingostates, with authority to officially test coins—Difference of judgement as to whether coins are good or bad—Mode of testing gold and silver coins—At whose expense coins should be tested.

THE adulteration of coins has been the cause of numberless frauds. Marius Gratidianus was the first Roman magistrate to establish the assay of coins, so as to authoritatively distinguish the good from the false or defective. This edict was so popular (among the merchants) that a statue of silver was erected in his honour.[1] Long afterwards, the Emperor Julian ordered that when there was a dispute as to whether a solidus was good or bad, or of proper weight and fineness, it should be examined by a magistrate appointed in each large city and called zingostate. Quoties, (says he,) de qualitate solidorum orta fuerit dubitatio, placet quem fermo græcus (zigostatem appellat) per singulas civitates constitutus, qui pro sua fide, atque industria neque fallat neque fallatur contentionem dirimere.[2]

This magistrate was like a modern Master of Weights and Measures. Du Moulin, Question 92, says that the officers of the mint privately assigned to others the right to approve or disapprove of coins. If this be true, their judgment as to the quality of the coins must sometimes have been of doubtful validity. Some have made this distinction: when it is a public question as to the quality of money,

[1] Pliny, lib. XXXIII, c. 9.

[2] Lex quoties de ponderit, lib. 10, c.

whether it is good or bad, it is necessary to submit the matter to the masters and officers of a mint as experts.[3] Recourse is had to such masters because they are best informed.[4] This, in a town where there is a mint, would be the masters and officers of that establishment; but when it is merely to determine a question of good or bad money among private individuals, the changers, called Nummularii, and even the goldsmiths, are competent to judge the matter.[5] Aristotle compares a judge to a changer. As the changer discerns the good coin from the bad or false, so should a judge discern the just from the unjust; the lawful from the illicit.[6]

In places where there are no monetary assizes and the question is whether the money is good or bad, the changers and goldsmiths may be consulted as experts, because of their knowledge in the art of discerning the good from the false, by sound, touch and acids. The art of testing gold and silver money by the touch-stone, is well known to goldsmiths, changers and other traffickers in money. On the excellence of this method of testing gold and silver, see Pliny.[7] As gold and silver can be proved by touch, it may be here mentioned that anciently the touch-stone was only obtained near the river Tmolus, in Lydia, but now it is to be found in many places. The Latins called it Coticula, Lapis Lydius, or Lapis Heraclius. Touch-stones are never more than four inches long and two broad. The best side of the stone to touch with, is that side which is turned to the sky when it is found; the side that is turned to the earth is not so good. Experts at this business know how to reach the ore in a mine, and tell how much gold and silver there is in it almost to a scruple.[8] Pliny also described other means employed to judge bad from good coins.

Bartolus[9] asks to what account the expenses of such testing should be charged, and he replies, to the account of the community.[10] It should be avoided, firstly, by demanding redemption. It is a general rule that those who are obliged to redeem bad money should pay all the losses incurred by the other side.[11] Otherwise, the innocent would suffer. This should be understood in the redemption of all large sums, *e. g.*, of sums exceeding 100 livres, especially between the common people who have a great interest in not mistaking the

[3] Lex. 1 § fin. ss. de vent. inspi. et ibi Doctor Bartolo, in lex septimo mense, ff. de Stat. homi. doctor in. c. significavit. 3. de homicid.

[4] An. in lex qui luminib ff. de furvit urba pred. [5] Lex si. soluturus. ff. de solutio.

[6] Cap. XXXVII, lib. 1. Rethor. ad Theod. [7] Pliny, lib. XXXIII, cap. 8.

[8] An illusion. Trans. [9] In lex. Paulus. ss. de solutio nu. 5.

[10] Arg. lex. 4, § fin., alter. ss. fun. rogand.

[11] L. Ediles § ult. cum. lex. sequent. illud sciendum lex. debet ff. Edilit. edict.

money in which payments are made to them. But if it is a question of a small sum paid in a gold or silver coin, which seemed good, but yet was not of right weight, it would only increase the expense to call in a goldsmith or changer. If the money is doubtful, redemption could be demanded, and if necessary, the decision of the question could be left to the courts. If there is a trial to ascertain if the pieces are good or bad, and if there is cause to invite a judgement, the buyer or payer should defray the costs.

CHAPTER IX.

DEALERS AND TRADERS IN MONEY.

Dealers in coins and money were anciently called argentarii and nummularii—Distinction between them—The locality of the silversmiths in ancient Rome was called the Old Shops—Why the silversmiths still retain their privileges—Their questionable standing in ancient times, due to their loans on usury—Roman bankers and banks—Curtailment of their usages—Bills of Exchange—Opinions of the canonists—Usury—The profits of commerce do not justify excessive usury on loans of money.

AMONG those who deal in ready money, some do so who never lose and always profit: these are the usurers. The other dealers in money were anciently called argentarii and nummularii. Although these two classes are often taken to be the same, there was a difference. Paulus, the jurisconsult, writes:[1] Nummularios quoque non esse iniquum cogi rationes edere Pomponius scribit, quia et hi sicut argentarii rationes conficiunt. In this text the argentarii and nummularii are clearly distinguished. The argentarii were silversmiths who also lent money on usury, keeping it ready for this purpose, as affairs presented themselves. This is the function of bankers; such as is exercised to-day in the banks of Lyons, Antwerp, Venice and other cities. The nummularii were those who bought small change in quantities and exchanged it for more valuable pieces, or vice versa. Qui accipiunt, (says Paulus,) pecuniam erogant per partes. Such to-day are the exchangers who collect quantities of silver money, which they exchange for gold pieces. Nevertheless, one class was often taken for the other. The silversmiths in Rome transacted their business in shops or booths, which were first built near the public market by Tarquinius Priscus, and were like the shops of the goldsmiths of Paris on the Pont au Change, or Exchange. These Roman shops were afterwards called Veteres, Old Shops, in contra-distinction to

[1] Lex quædem sunt § nummularios. ff. de edend.

the New Ones, which were called Adiontes. Livius mentions these shops in several places, amongst others in Book IX, Ab ubre condita, when he speaks of the triumph of the Dictator Papirius for a victory obtained over the Samnites. He says that the golden armour and shields taken by the victors were distributed by the masters of the silversmiths, to decorate the market-place at the time of the triumph. And in Book VI of his Third Decade, he says, Hannibal was vexed that the ground where he had pitched his camp had cost so much; and just as though he was already in Rome, he had it announced in his camp that the Old Shops near the market-place of Rome were for sale to the highest bidder.

The silversmiths received valuable assistance from those who had business with them, because, as M. Brisson notes, they were employed both in public auctions and sales, as well as in discharging private contracts. They bought and sold money, and sometimes they charged for keeping it on deposit.[2] This can be seen in De argentariorum contractibus, which is in the 136th constitution of Justinian. For this reason Caius, the jurisconsult, writes of the silversmiths: Argentarios rationes edere jubatur, nec interest an tum ipso argentario controversia sit, an alio. Ideo autem argentarios tantum neque alios ullos absimiles eis rationes edere cogit, quia officium eorum atque ministerium publicam habet causam, et hæc principalis eorum opera est, ut actus sui rationes diligentes conficiant.[3]

The social standing of silversmiths (still questionable, as is that of the bankers of to-day) was not always regarded as honourable; this is manifested by the reproach of Marc Antony addressed to Augustus, that his grandfather was a banker, or silversmith. The basis of the censure was the usurious measures employed and great profits made by, the bankers. This can be seen by the following verses of Plautus:

> Sub veteribus ibi sunt, qui dant, quique accipiunt fœnore.[4]
> Quia triduum hoc unum modo fero operam assiduam dederim.
> Dum reperiam qui queritet argentum in fœnus.
> (By the word veteribus he means the Old Shops of the silversmiths.)

For this reason Cicero, in an epistle to Atticus, calls the money lent by the silversmiths on usury, by the name of "Æs circumforaneum." In this place it is appropriate to mention that changers existed in Lyons, Antwerp, London, Venice, Florence and other commercial towns in which the traffick of money was done under the name of exchange. Because the merchants of Germany, Italy, Spain and Eng-

[2] Lex Item vivendum ff. de petit. hæred.
[3] Lex argentarios ff. de edend.
[4] In Curculio.

land, as well as others who came to the Fairs, paid and received money which had not currency between one country and another, and in order to accommodate them, there were other merchants who changed their money. This was not done by giving them other coins which had currency in their own country, but by valuing their coins as bullion and weighing them by poid de marc. They received the pieces as so much bullion and paid for them in current money, a kind of permutation which is called "exchange." The place where such exchange is made was anciently called banc in France, from which we get our name of banker. A similar form of negociation in money was practiced between the ancient Greeks and Romans, who called the profit of the exchange colibus, from which word is taken the word colibistes, for a banker. This office Cicero said there would be no use for, if all people used the same kind of money.

The merchants invented another form of exchange and traffick in in money; they had representatives in each town who had connections with other merchants. These representatives received money from such as desired to remit it to other countries, and gave them letters called Bills of Exchange addressed to distant bankers or merchants who were required to pay to the party named therein the sum received by him who drew the letter and to whom a compensation was paid for this service. This business has since been pursued with great profit. These letters are sometimes drawn without receiving any money, but on credit and good assurances, and the banker often makes as much as 20 per cent. per annum profit, that is to say, 5 per cent. for each term of payment in case of four renewals within the year.

One is asked whether such contracts of exchange are not usurious. John Lescot, Doctor of Theology, has dealt at large with this question, and also with the commerce which results from the practice. One assists the other. It is a contract of permutation. There are also contracts of exemption. Denier for denier is the contract of loan which is regarded as lawful; if it is abused, it is usury. This distinction is just. As for the first two forms of exchange, they are not loans and in consequence cannot be usurious. As to the third, it is a banking business which is exercised in two ways. The first is, when money is lent in one place to be returned to (the same person) in another, and for which the bank is paid a compensation by him who forwards the money. This form of contract is comprised (in the Civil law) under the head of contracts innominate, or do ut des. These are lawful and approved by the doctors of law, provided the fees are

reasonable, and according to the custom observed in the trade, and in view of the cost of carrying the money, and the other expenses of the banker, as well as the risk he runs.

The other form is when bills of exchange are addressed by one banker to another in a different country requiring the latter to pay money to the Bearer or to he who bears the bill or letter. The banker is assured of a certain sum as profit. This kind of bank is a contract of lending, because the banker is the debtor and the person in favour of whom the letter of credit is written is the creditor, until he has received the money for which the bill is drawn. In such contracts one must observe the rules of usury prescribed for loan contracts, as well as what is written concerning future interest; also, in case of gain or loss in the exchange of the money, such rules as are noted by the law doctors.[5] We agree with the doctors who speak of the usurers of Lyons, Antwerp, Florence and other places, that when they were usurious and exceeded the rate of interest permitted to merchants by Justinian [6] which was 8 per cent., or in some cases 10 per cent., (because this profit in commerce is reasonable).[7] They were open to censure, as acting against the Scriptures.[8] The transgressors of Holy Writ cannot be excused under pretext of Letters of privilege from the kings, which the bankers by importunity are said to have obtained. It was pretended that under the royal authority bankers were at liberty to traffick at the Fairs of Lyons, and take or demand usury as high as 20 per cent. Such practice is iniquitous, and if the Church declares that such authority was obtained in opposition to human rights, no one would care to respect it. For a still higher reason, authority obtained contrary to the Divine law, is of no effect and value. It does not excuse the banker or merchant should he say that he could have earned more if such money had been invested in trade. His not having so invested it, is not a sufficient cause to demand a higher rate of interest than is legitimate. Says Hemagenianus: Venditor si emptor in pretio soluendo moram fecerit, usuris duntaxat præstabit, non omne omnino quod venditor mora non facto consequi potuit, veluti si negociator feurit, et pretio soluto plus quam ex usuris querere potuerit.

[5] In c. salubriter de usur. ext., et in lex rogasti. § si tibi ff. si cert. petat.

[6] In lex. eos. C. de usur.

[7] Host. et Godefrid. in sum. titul. de usur.

[8] Bald. in lex fin. § 1, C. de jur. dot.

CHAPTER X.

LEGAL ALTERATIONS OF MONEY.

Usual ways of altering money—These may or may not be for the public benefit—Cases when the State should indemnify the losers—Money should not be demonetized without grave deliberation—Reasons for altering the value of money—Raising the value—Various historical examples—Gylippus the Lacedæmonian—Emperor Frederick—Philippe le Bel—Nicephorus Phocas—Dionysius of Syracuse—Solon—The English under Henry V.

MONEY is usually altered in two ways: the first when it is cried down or demonetized and ordered to be melted. The second when it keeps its form, but is diminished in bullion. Money may be cried down for good or bad reasons: for example, for purposes of political reform, as when Lycurgus of Sparta cried down all kinds of gold and silver money and commanded that only iron money should be used. That gold and silver corrupt the highest as well as the lowest of a country, is shown by the act of Gylippus, who having bravely assisted Lysander to gain a victory over the Athenians and being entrusted with the spoils taken from the enemy and the gold crowns that were presented to his commander, he embezzled a good portion of them and hid them under the tiles of his house in Sparta. This was afterwards discovered through a servant of Gylippus, who in veiled words said that under the tiles of his master's house slept many owls: these being the well-known stamp of the Athenian coins. For this crime Gylippus, notwithstanding his many gallant exploits, was banished from Lacedæmonia. This moved Lysander to protest before the Ephores that they should banish from Sparta all the gold and silver which had been brought in, deeming such metals a pest and a temptation to do wrong; and he recommended that only their own money, made of iron, should be used for the purposes of trade.

Money may be discredited when it is corrupt and base, as we have seen it in France in past times, or when foreign money has crept into circulation through the commerce of merchants. However, if the Crown has permitted this money to be received by the people, it should not be discredited without indemnifying those who have received it. The people have accepted this money according to the imposed value, which perchance may surpass the value of the bullion of which it is composed three or fourfold. If discredited, it will fall to the value

of the bullion only, and will thus defraud the public of the difference. For this reason the Crown should deliberate well before giving circulation to any money unless it is of good material and quality and such as deserves to be circulated. It should be designed to remain in circulation perpetually: so that the edict of monetary authority should command the public respect. If money is of inferior material and in consequence comes to be discredited, it works great damage to the public. However, if pressing necessity obliges the Crown at any time to debase or weaken the coins, it should atone the necessity by discrediting the base money and substituting good money in its place, so soon as may be convenient. This was done by the Emperor Frederick II., who being in Italy about the year 1240, when after having coined his gold and silver plate, there was still a dearth of coins, he caused money to be made of leather stamped with his effigy. Upon each leather note he imposed the value of a ducat and ordered that at such value it should be legal-tender and have "course," or circulation. When his metallic resources increased, he called in the leather notes and ordered them to be redeemed by his treasurer in ducat coins. Philippe le Bel was not so considerate, for having debased by two parts the money which formerly was made of nearly pure silver, he discredited it and had money coined of pure silver, without indemnifying those who held the base money at the time it was discredited. He thereby ruined a great number of his subjects as well as foreigners who had come to live in this Kingdom. So at least writes Father Antonius in his History, tit. 20, c. 8, § 16.

For a bad reason, good money, which by law circulated at a certain value, has been sometimes discredited through the avarice and bad advice of counsellors who have urged the demonetization of such coins for no other reason than profit to themselves in buying up the pieces. Such edicts are not always observed, and notwithstanding the law, the discredited coins have continued to circulate as good money.

Savants allege that money may justly be discredited on account of its antiquity, a doctrine which seems to me cannot be upheld. The reason they give is that ancient coins do not retain either their form or weight; but this cannot be true in general, for among ancient coins a part only may be diminished by antiquity and use. The remainder may have been preserved entirely both in form and weight. Such coins are to be found among the most ancient issues, Greek as well as Roman, and these should be all the more venerated and esteemed on account of their antiquity. Such was the practice among ancients. For instance, Augustus, in order to enhance his liberality on the fes-

tival days which he celebrated, gave to the people coins issued by the ancient kings of Rome. Such was the veneration aud honour in which ancient coins were held, that they were almost as valuable as precious stones. Indeed, the law required that when such coins were loaned, the loan should be returned in the same coins, or kind of coins. On the other hand, Constantine required that the ancient coins stamped with the effigies of ancient princes, when of due weight and not defaced, should be used as current money and at the value stamped upon them. This policy has not always been followed in France, for with the discredit given to the memory of certain kings, came the refusal of their gold and silver coins, some of which hardly lasted two hundred years before they were discredited.

The second form of altering money is when it retains the same name and value imposed upon it, but is diminished in weight, or when the gold coins are unduly alloyed with silver, or the silver coins with copper. This is done sometimes for good and sometimes for bad reasons: for good reasons when it is for the public benefit, as was done at Rome during the first Punic war. The Romans being in debt, says Pliny, and not knowing whence to get money, they lowered the weight of their bronze money and reduced the ace to two ounces instead of a pound, by which means the exchequer gained five parts of the money and discharged its debts. Afterwards, when Quintus Fabius Maximus was Dictator, the republic being hard pressed by Hannibal, it reduced the ace to one ounce and established the following rates of money: The silver denier at sixteen aces; the half-denier (called quinarius) at eight aces and the sesterce at four aces; by which means the republic gained half on its money and was relieved of its distress.[1] With these examples before him, Philippe le Bel may be excused. In order to provide for the war against the English and Flemings, that monarch diminished by two parts the coins which before were made of nearly pure silver. King Charles VII., in order to provide means for war, also diminished the metal in his coins by more than a half. On

[1] The great finds of Roman coins in modern days and the complete collections which these finds have enabled us to make, render it possible to construct a history of Roman money from the coins themselves, an advantage which was not possessed by Grimaudet. We now know that neither the causes nor the consequences of the changes that were made in the bronze coins of Rome during the periods alluded to, were correctly understood by Pliny. The money of Rome consisted of a limited number of over-valued bronze pieces whose value was maintained by their use, their limited number and the authority of the State, and not at all from the material of which they were made. The lowering of their weight had no such significance as the Roman naturalist and his commentator supposed. Consult Del Mar's History of Money. Trans.

the other hand, it is bad policy when the weights of coins are diminished merely for the profit of the Crown and not because of any necessity, as did emperor Nicephorus Phocas, (A. D. 963-69,) who coined much lighter solidi than the ancient ones, which were six to the ounce, and commanded that the taxes and duties should be paid with the old coins, while on the contrary that his purchases should be paid with the new coins.[2] Dionysius of Syracuse similarly enfeebled his silver drachmas and paid these to his creditors.

Money, though its shape, material and weight remain unaltered, sometimes rises in value (when compared with commodities). For example: Gold and silver have been known to rise within a century to half again their former value, while the coins, for example the gold crown and silver testoon, remained substantially unchanged in weight and material. Indeed, the gold crown lost two grains in weight; yet its value in commodities increased. It has therefore been deemed just at times to increase by law the nominal value of gold and silver coins; otherwise the bullion in these pieces would be worth a third more than they were worth originally, and it might be more profitable to melt them down than to use them as money.

The value of money is sometimes raised by edict for the good of the public, as was done by Solon at Athens. In order to acquit poor debtors of their creditors, he augmented the value of the talent to a hundred drachmas, when before it was only worth sixty. The ratio of silver to gold was 13 to 1. By this means the poor discharged their debts and the creditors were not dissatisfied.[3]

The value of money is raised arbitrarily when it is done merely for the profit of the Prince or his courtiers, as was done in this kingdom in the time of Charles VI., A.D. 1418, while he was a prisoner to the English. When the latter entered the city of Paris, the silver marc was coined into nine livres. But by persuasion and false counsel the English obtained edicts under the name of King Charles, by which the écu or crown was raised to sixty sous, the mouton to forty sous and English nobles to seven livres. Similar inequities have often been committed through the influence of courtiers, who having a great number of écus, or other pieces of gold, have obtained edicts by which their value was raised.

[2] The extant solidi of the second coinage of Constantine weigh 68⅔ English grains each and never could have weighed over 70 grains. They were therefore not struck 72 to the Roman libra. The solidi of Nicephorus Phocas weigh 68 grains each. The story of the monk Zonoras (A.D. 1120) which is here repeated by Grimaudet, seems to have but slight foundation in fact. Trans.

[3] Solon struck new drachmas of which 100 were equal in weight to 72 or 73 (not 60) of the old ones; their legal value (20 to the gold stater) remaining unaltered. This changed the ratio from 13 for 1 to 10 for 1. All the rest is imaginary. Trans.

CHAPTEP XI.

IN WHAT MONEYS DEBTS ARE PAYABLE.

This is the most important of monetary questions—The Civil Law—The Commentators—Tyraqueau—Du Moulin—Money of the day of payment—Money of the contract.

THE most contentious question on the subject of money is the payment of debts, loan contracts, pignorative contracts (hypothecation), dot, deposits, or other obligations, which have been stipulated to be paid in certain "species" of gold or silver money; especially if there has meanwhile been a mutation (augmentation or diminution) in the species in which the debt is stipulated to be acquitted. Whether debtors are bound to pay in species even when the value of the same has augmented; or whether debtors should pay in the money of the contract, or in the money of the time of payment, are questions treated of by the Civil Law, in Lex cum quid, in Lex vinum and in Lex quod te ff. cert. petat.; also by the doctors of law, in c. quanto ext. de Jur.

Tyraqueau, in § 1, glos. 18, nu. 26, under the title of "Right of Redemption," refers to a great number of jurisconsults who have treated the subject, as has Du Moulin in the ten last questions of his Treatise on "Usury." Some take the affirmative, that is to say, that the debtor is liable to pay in the species which has currency at the time of payment. Others defend the negative, that is to say, that the debtor must pay in the money used at the time of the making of the debt. We shall treat of these subjects in the reverse order named.[1]

[1] This is deemed an appropriate place in which to insert the following Memorandum published by Alex. Del Mar:

"I have been asked to reply to this question: Why is it that in the earliest works on Money, none of which, by the way, are earlier than the Renaissance, no legal decisions are cited on the subject, as of the immense interval between the Roman imperial and the Renaissant ages? The Roman decisions are preserved in the Pandects, the Renaissant decisions are contained in the works of Budelius, Molinæus, Baldus, Covarruvias, Grimaudet, Madox, etc., but what of the seven centuries between Justinian and the Fall of Constantinople, were there no legal disputes about money during this vast lapse of time? And if so, why not?

The answer to this question involves an historical theory which will have to be briefly referred to, before the question can be intelligently answered. The theory is that the Roman Empire was dissolved during the Dark Ages by the Irruptions of barbarians, the Franks, Anglo-Saxons, Lombards, Visigoths, etc., who thereupon established in-

dependent kingdoms of their own in Britain, France, Spain and Italy and that the governments of such kingdoms were so barbarous that they preserved no legal decisions —if indeed they ever had any—concerning money. Upon this theory, or else some analogous one, has been constructed the history of every state in Europe. The English begin their history with the Heptarchy; the French with the Merovingians; and so on. But in fact the theory is a false one, and no such state of affairs existed as is assumed. In my three archæological works, "Ancient Britain," "The Middle Ages Revisited," and "The Worship of Augustus Cæsar," it is amply proved that no such dissolution of the Roman Empire took place and that no independent kingdoms were established by the barbarians in England, France, etc., in the manner and at the periods pretended. On the contrary, it is shown that down to the Fall of Constantinople in 1204 the Roman Empire, (miscalled the "Greek Empire" and sometimes the "Eastern Empire," but really and always the Roman Empire,) continued to govern the various Roman provinces, miscalled "independent kingdoms," of Europe, and that with certain exceptions, its laws and its legal decisions, especially those relating to money, were observed and obeyed in such provinces, even in the ecclesiastical states of Italy. This explains why the treatises on money cite no other than Roman decisions on the subject during the interval between the codification of the Civil Law and the Renaisance; because *there were no other*. No monetary laws were enacted in England before Henry III., nor in France before St. Louis, because until the reigns of these kings—popular history to the contrary notwithstanding—those states were not entirely independent of Rome; and by Rome is meant not the empire assumed by the pontiffs of Italy, but the empire exercised by the Cæsars of Constantinople. For example, not one of these kings ventured to strike a gold coin until after the Fall of Constantinople; indeed they did not meddle in any way with the coinage laws or regulation of the Empire, but submitted wholly to the regulations on this subject which were established by the Cæsars and embodied in the Civil Law. The moment the Empire really fell, that is to say in 1204, they all hastened to strike gold, to issue base coins, to alter the weights and fineness of the silver coins, in short, to effect those perplexing alterations of money which gave rise to the legal disputes and the legal decisions of the Renaissant period."

CHAPTER XII.

MONEY OF THE CONTRACT.

It has been argued that paying bronze or silver for gold coins does not satisfy an obligation—The Civil Law—Opinions of the Canonists—The jurisconsults of Pavia and Turin—Decisions of the Courts of Paris—The Courts of Bordeaux—Some jurisconsults base their legal-tender decisions not on money, but on its material—Emphyteutical rents should be paid in the money of the contract—A contract to pay in any special money (species) is speculative—Difference between contracts to pay in special, or in current money—Contracts to pay in current money of a specified weight and fineness of material—A contract to pay gold ducats of a certain weight and fineness held to be valid—Form of contract under Charles VII.

SEVERAL cases have been cited to sustain the doctrine that the debtor is equitably required to pay in the money specified in the contract: amongst others, those stated below, wherein it is expressly stipulated that the debtor is to pay in a certain kind of money. In obligations, one must hold to what is promised and make payment in the same form and kind of money in which the debt was contracted, so that the debtor cannot acquit himself by offering one kind of money for another, and also in order that the creditor may receive payment in the stipulated money. Especially in case of loans on interest, one kind of money should not be paid by another.

To pay the creditor in bronze or silver instead of gold money, (when the latter was stipulated in the obligation,) is not satisfying the contract, which equitably, is payable in the same medium as that in which the loan was received. By the word "pay" is meant that at the time of satisfying the loan the substantial and *material value* of the thing loaned should be reimbursed at the expiration of the contract. In the case of money, equity declares this to be an equivalent quantity of gold, silver or brass metal, by weight and fineness; such material being regarded as the source of the value of money. (But should this last belief not be sound, the whole argument falls. Trans.)

The deniers or other coins that one pays should be equal in material to those which were loaned at the making of the contract; they should be of the same material and weight as that stated in the contract, without regard to the altered legal value of the same which has occurred since the contract was made. Such altered legal value is extrinsic and accidental and is not to be considered. In solutio ne mutui, except to the debtor who is unable to fulfill his bargain. In

the case of wine, grain, or other things, which are measured by bulk or weight, should they have fallen to a much lower price than when lent, the debtor must nevertheless pay to the creditor as much as he received of the same kind and quality of material. He is not obliged to make up any deficiency in the value to which they may have fallen since the loan was made, because in such a contract the price or value is not considered, but only the kind of material and its weight or measure.[1]

The jurisconsults Pomponeus and Alciati (1492-1550) in reference to the text In verbo Bonitate, hold as follows: Quod si res mutuo data majoris valoris fasta sit, et cum hæc bonitas extrinsecus advenerit, nihil referre traditum est, et ideo lucro creditoris accedere, sicut e contrario ejus damno cederet si diminuta esset æstimatio, nisi a tempore moræ contractæ hæc diminutio intervenisset.

After adducing an example of this question, and following the canon law, where it is expressly held that if an income or pension is specified in a certain kind of money, this kind of money should be paid, though after the contract it was abolished or altered, Innocent III., and Gregory IX. decided that the payment might be made according to the present value of the ancient money: having regard to its quality and material. In reference to a similar question, the law doctors of Pavia and Turin, in the year 1511, met in council and gave decision on the following facts: More than a hundred years previously, or so far back that the memory of man ran not to the contrary, the inhabitants of the city of Cascal were accustomed to pay each year to the Marquis de Montferrat, for taxes, a certain number of gold florins, each one of which was formerly valued at 34½ sols. Notwithstanding divers lowerings of the florin, the inhabitants were accustomed to pay florins by their ancient estimation, that is to say, to pay them with the same number of silver sols current money as that at which the ancient florin was rated, without any regard to the altered weight of the florin. Whereupon the Marquis demanded to be paid one écu, or crown, for every three florins due him, or if the inhabitants preferred to pay in current florins, they must pay 3½ new florins for 3 old ones, in order to make good the altered value of the florin in current money. The inhabitants of Cascal opposed this demand and raised the question as to whether they should pay the florins

[1] Lex ff. si Cert. petat.; lex Paulus ff. De Solut.; lex ff. Cum quid; lex vinum; Imbert, in Enchiridion, in verba Moneta; Bœrius, decision 327; Du Moulin, question 91; Diaz Covarruvias, Pract. quæst. c. 7; Baldus; Alberic, in lex 2, c. de jur. emphyt. dum loq. de canone prestando; Bartolus, in d. lex Paulus, in fin.; Castres et Fulgole; Albert Bruns; Ulpian in lex jurisgentium § a deo ff. de pact.

according to their value at the time of the demand or at the time of the creation of the tax or duty. This question was referred to the law doctors of Pavia and Turin, who unanimously decided that the payment was due in ancient florins, and that the inhabitants should pay in florins of the same weight and fineness as were current at the time the obligation was contracted, and if the florins had since been diminished or enfeebled with alloy (which the doctors called "Ligna") it should not prejudice the rights of the Marquis of Montferrat.

This opinion is supported by other reasons than those advanced by the law doctors. Suppose that a gold or silver species, say the écu, is neither raised nor lowered in material, and remains of the same alloy and weight as formerly, and that nevertheless the value in billon or bronze coins of such gold species is raised by reason of the weakening of the bronze or billon. Under such circumstances the value of the gold coins is enhanced in small money, owing to the unaltered composition of the former and the debasement of the latter. In this case a debt is required to be paid proportionately to the enhanced value of the écu in the new money, the latter being of less value than the ancient small money. The intent is that the value of the new money should be equal to the value of the old. The increased value of the écu renders it necessary to pay as much more of the new money as will make it agree with the value of the old, which had currency at the time of the contract. If the ancient money was afterwards enfeebled by one-fourth, then 20 new "douzains" only equalled in value 15 of the ancient, from which it follows that the écu is raised one-fourth in value in new small money or "douzains." This enhancement of the écu restores it to its value at the time of the contract. Such enhancement is only apparent, and is due to the lowering of the small new money which has been made of less weight or fineness than the old. For this reason Imola and Coru have deduced that in case of the enfeebling or lowering of the small money, the value of the gold money should be increased, because in paying écus with new billon coins, according to their value at the time of payment, the debtor does not pay more than he owes. The écu in the obligation is equal to what it was at the time of the contract, and in estimating the debt in "douzains" of the new coinage, although there is a larger number than there were in the ancient, it is so because they are of less value. The coins of the year 1480 exceeded the weight of those of the year 1575 by one-fourth or thereabouts.[2] Therefore, in

[2] In 1480 a treaty between Edward VI., of England and Louis XI., of France provided that English coins should "pass in France" at the following rates in sols and

discharging with current sols rentes stipulated in 1480 to be paid in ecus, if we bear in mind the billon coins then having currency, it will be found that the sol or sou was worth one-fourth more than that of the year 1575. In regard to the sum payable in écus, with current "douzains" of the year 1575, according to their just value at the time of payment, they should be paid according to the higher metallic value of the écu at the time the obligation was contracted.

Imbert, in examining this question, refers to a decision concerning an endowment payable in gold écus, which was bought with silver sols. The debtor offered to pay in sols according to the value of the écu at the time of the creation of the debt, which was 27 sols to the écu. The creditor, on the contrary, demanded that the debt should be paid him in écus without regard to their enhanced value, which at the time of payment was 45 sols Tournois. The court stopped the case and took the advice of the officers of the mint (generaux des monnoyes) who said that the écus which had currency at the time of the demand, were of the same material, weight and fineness as those that had currency at the time of the creation of the debt. Accepting this report, the debtor was condemned by the court to pay as demanded by the creditor, namely, in écus. Bœrius notes a similar case in the Court of Bordeaux, A.D. 1530, decided in favor of Ysabeau de Pompadon against Geofroy de Bernæ, after an inquest by the Mint Masters into the valuation of the old écu compared with the new.

Another case was decided by the great (appellate) court held at Poitiers in 1567 in favour of the dean, canons and chapter of the church of Angers *versus* Master Ines Ernaut, representing certain people who attended the presidial court in Angers. The latter were condemned to pay the arrears of certain rents in écus without regard to their subsequent enhanced value in current money.

The reason for this decision was that in all obligations to pay special coins of gold or silver, their value is considered with reference to the time of payment and whether it be to the profit or loss of the creditor, he is obliged to accept them.[3] As these cases arise from mutations in the value of small money, the payment should be made with

deniers Tournois: Rose-noble (gold) of 6 pennyweights, 65 sols; the half and quarter Rose-noble at proportionate rates; the Noble or Angelot (two-thirds of the Rose-noble), 43 sols, 4 deniers; the silver groat, 2 sols, 6 deniers; and the half and quarter groat at proportionate rates. From Mathieu's "History of Louis XI.," quoted in Anderson s History of Commerce, 1, 484, quarto. Trans.

[3] Speculat. titul de obligat. et solut. § 1. ad. fin. Antoni. de But. et Imola, in c. quanto ext. de jur. Alberic et Roma in L. Cum quid, ff. si Cert. petat.; Baldus consil. 137.

regard to its value at the time of the obligation, compared with its value which is current at the time of payment.[4] The value of the écu being enhanced, not in material and weight, but in relation to the new small money, which is of less value than the old, an obligation to pay écus should be discharged in species, or in ancient small money or their equivalent in current small money, valuing one by the other.

The ancient doctors of the canon law, Hostien (Junior) John Andres de Butrio, Cardinals Imola and Panor, and the doctors of the civil law, Alberic, Baldus, Alexander, Fulgole and a great number of others mentioned by Du Moulin, by Bœrius and by Didacus Espagnol (Covarruvias), were of this opinion. They laid it down as a general principle that in all obligations to pay in gold species, if one wished to make the payment in silver money, the latter might be of the current money of the time of payment, but paid according to the value of the gold species at the time of the obligation. Thus Baldus, Speculator, and Alberic, expressly note that in the payment of annual rents by "paction," the parties to the obligation are bound to a certain number of pieces of money (écus) and it is understood that payment shall be made in the same number of pieces. Such obligation should be understood as lawful and as containing nothing contrary to public policy. And if the obligation is not regarded in the mode of payment the rents would be paid in less numbers of species than was agreed. To maintain the contract the payment should be made in the numbers of gold species and in the form required by the obligation; so that the payment should not be less in number of species than was stipulated. If one wishes to pay in small silver coins, they should be such as are current at the time of the payment, at their value in gold ecus.

A contract to pay in specific pieces of gold, or in a certain number of gold pieces, is designed to regulate the discharge of the obligation without risking the uncertain future value of money and is couched in species, regardless of diminution or in increase, or whether it be to the profit or loss of the creditor. Such mutation has been so frequent in this kingdom as to give sufficient cause to uphold this view of the law.

It is doubtful if what is said above can be extended to contracts by which it is stipulated that the sum to be paid is a certain number of livres, either for rent or any other consideration, *e. g.* if the small money has deteriorated and diminished since the obligation was con-

[4] Baldus consil. 137. Bart. Alberic et Alex. in d. c. Cum quid.

tracted, whether the payment to be made should have regard to the value of the money which has currency at the time of the contract, or whether it will suffice to pay in money current at the time of payment.

This question is given by Albert Bruns, where he makes this distinction: whether the contract was to pay in livres or to pay in livres of current money. In the first case, that of a contract simply to pay "livres," the payment might be in livres of heavy or light coins and the debtor could pay in livres of the money current at the time of payment even if the money had been heavier and of finer metal at the time of the obligation.

In the second case, a promise to pay in "livres of current money" relates to the time of the contract. For this reason if the coins of which the sum livre is composed, have been afterwards enfeebled in material, payment should be made in old coins (if any could be found), if not, then in new coins equal to the old in weight and fineness. This is expressly the case in dc. in Canonicis. Du Moulin mentions a case conforming to these facts, which took place in 1487. A man settled upon his wife 80 "livres" of rente in "current money," as a marriage dowry, which dowry by the customs of Paris, is under given circumstances deemed the heritage of the children of the husband who makes the settlement. The husband died leaving children who demanded the re-assignment of the 80 livres' rente from those to whom it had been assigned by the wife; and they demanded it to be paid according to the weight and quality of the coins which were current at the time of the marriage settlement. By a comparison made by the Mint Master of the money which was current at the time of the settlement and that which was current at the time of the trial (which was in 1525) it appeared that the money since the time of the marriage contract had diminished in contents by a fifth. In consideration of these circumstances the assignees of the dowry were condemned to account to the heirs for 90 livres of rente (instead of 80 livres) by reason of the superior weight of the money current at the time of the contract.[5]

[5] A curious case is mentioned in the London Westminster Gazette of April 28th, 1894. An inn-keeper in Paris, France, was recently prosecuted under a law passed in the reign of Louis XV. for some trifling trade offense and fined "five livres." Now the livre is no longer a current coin, because it was demonetized by law in 1789. Not only this, but another act forbids the use of any terms relating to money, weights or measures other than those of the metrical system. The inn-keeper has availed himself of these circumstances and lodged an appeal against the decision of the magistrate who imposed the fine, the result of which is not given. Trans.

The usual form of such contracts stipulates for money current at the time of the contract and this relates to the quality, material and weight of the coins; therefore the obligation must be discharged or paid in the same quality of material. This decision is approved by the Doctors of Law, who note that a "paction" is lawful, in which it is stipulated that Titus pays in ducats (a certain number to the marc weight, *e. g.* seventy-two) and of the value of so many sols of small money for each ducat, (*e. g.* 70 Tournois sols of small money for each ducat of Castille.) This form of contract was in frequent usage in the time of Charles VII., after the expulsion of the English, when the inhabitants of this kingdom had in mind the uncertainty of the value of gold and silver coins. The edicts made after the fall of prices, which had been raised by the English, set forth several contracts in this form.

This ruling is limited by Baldus in cases where the species mentioned in the contract is valued at a certain sum of livres or sols, because the effect of such valuation is, that it is defined between the parties how much current money the debtor owes for the species. The consequence of the former decision is to fix the price in species as against the heightening or lowering of coins, so that the rise shall not be to the loss of the debtor nor the fall to the loss of the creditor.

The second illustration is in contracts of annual payment or discharge, where, since the contraction of an obligation in species, the arrears have actually not been paid in species, but in money current at the time of payment. In one case this was continued for 30 years. Six gold ecus of rente were sold in 1527, in which year the ecu was valued at 27 sols. When the debtor had paid the annual charge for 30 years, paying 27 sols current money for each ecu, the creditor was not permitted to exact anything more, because by the custom established during the course of 30 years, the debtor had derived a prescription in the mode of discharging the obligation, and he could not be held to pay more than he had actually paid each year; for if by 30 years, tota res, as Ulpian says, potest tolli, cur non reformari. By reason of his payments continued for 30 years at the rate of 27 sols per ecu, which rate the creditor tacitly accorded, the debtor cannot be held to pay more. The prescription though tacit, is fixed by accord and custom. Thus decided the doctors of Pavia and Turin in 1511 at the council above mentioned.

CHAPTER XIII.

MONEY OF THE DAY OF PAYMENT.

Reasons why contracts are equitably dischargeable in the money current on the day of payment—Coins in fact do duty one for the other—A debtor in one species may justly pay in another species—The substantial value of money is due to its legal denomination—"Gold" or "Silver" does not imply money—Origin of nummus—Quantity determines value—Money differs from the things which are measured by weight or bulk—The efficacy of money depends upon its legal denomination—Money paid should be as valuable as that which was received—The quantity and quality of a debt can only be determined by reference to the contract—Money circulates at the value imposed by law—That which is expressed by the law is implied in the agreement of the parties—An obligation to pay 100 écus is an obligation to pay 300 livres—An obligation to pay écus does not exclude payment in other coins, which are their legal equivalent—Private individuals are not entitled to regulate the value of money—The value of money should be stable—Acts of parliament on this subject—Decisions of the Courts—Opinions of the learned.

THE argument that contracts are equitably dischargeable in whatever money is current on the day of payment, is supported by numerous reasons. It has been decided by courts of law that the debtor who has contracted to pay in gold species, or in silver species, may pay in whatever coins are current on the day of payment, but nevertheless at their value at the time of the contract, without regard to any alteration of such value as may have been made in the meanwhile. However numerous and diversified may be the various coins used for money—diversified in material, stamp and legal value, or denomination—they nevertheless have this quality in common, that as a means of payment they are qualified for and actually do duty, one in place of the other. That is to say, one may borrow a sum of money made up of certain coins and justly repay the loan with a like sum of money made up of different coins, without regard to their material, or the value of such material, when uncoined. Under the (feudal) laws, gold coins were invested with peculiar attributes, which forbade silver coins to be paid for a debt in gold ones. Under these laws, silver coins were also invested with attributes which forbade bronze coins to be paid for a debt in silver ones.[1]

[1] Under the Roman imperial law gold coins could only be struck by the sovereign-pontiff; silver coins at a ratio fixed by the sovereign-pontiff were struck both by the imperial government and permitted to be struck by cities and proconsuls under its authority; bronze coins were struck only by the Roman people, acting through the

It was laid down by Bartolo: Moneta parva est permutabilis in omnem majorem. Under this ruling the debtor is entitled to pay an obligation in gold and silver money, with any other money of equal legal value: that is to say, equal value at the time of entering into the obligation. Value here means legal value, and has nothing to do with the material of which the money is made. It cannot be doubted that the law has the power to confer a value upon coins different from that which is derived from the material of which they are composed. For a clear understanding of this matter, it must be remembered that it is the law alone that creates money and gives it essence, being, existence and substantial value.

In all contracts, whether of purchase or sale, the money consideration held in view, or in the minds of the contracting parties, is what justice demands, quæ mutata interimit substantiam rei. To this money consideration, the mere bullion or the material of coins must give way, as canvas does in considering the merits of a painting. It is the law that creates money, gives it existence and imposes upon it, denominational value. Take its legal name from it, and it is no longer money, but only bullion. This has been repeatedly shown when certain coins were decried by the Crown and deprived of their denominational value; they lost their essence as money, they became mere bullion, which is very different from money. The terms "gold" and "silver" comprise these metals in the form of bullion, but they do not comprise coins.

M. Barnabas Brisson, in his learned commentary on the word "Argentum" correctly observes that in our law we carry out the reasoning of Cicero, who held that argentum (in French, argent, or silver) meant money, and not metal. Non facile enim quis argenti numero nummos computat, said Quintus Mutius. It follows that the efficacy of money is due to the value imposed upon it by law, a fact deducible from its Greek name *nomos* and its Roman name *nummus*, both of which mean the Law, or that which is created by law. It is the law

Senate. Under the provincial Kings who succeeded to the dismembered Empire similar regulations were attempted to be enforced. The coinage of gold was reserved by the sovereign; that of silver was accorded to the barons and prelates; while that of bronze was not attempted in France until the 16th, nor in England until the 17th century. Experience soon proved that what an Universal Empire could carry out successfully was impracticable to a number of separate feudal States without grave danger to their autonomy. Hence the coinage prerogative had to be, and it was, rapidly absorbed, assumed and monopolized by the Crown. When this change was completed the baronial and ecclesiastical mints were closed and the feudal rule of paying only in species fell with the feudal mints. Trans.

that gives existence and efficacy to money and not the material of which the coins are made. Thus, says Paulus, Ea materia forma publica percussa, usum dominiumque non tamen substantia præbet, quam ex quantitate. The term ex quantitate used here has reference to the sum of denominational value of money imposed by the law. This justifies the opinion of those who hold that to the Crown only, (the Crown or the State being the living impersonation of the Law,) belongs the right to confer denominational value upon money. Such value has often exceeded the value of the material two or three, or more, times, as was manifested in the leather issues of Frederick Barbarosa, the tin issues of Dionysius, of Syracuse, the gun metal issues of the Sultan Othman (A. D. 1259-1326) during his wars against Persia, and in our own copper coins.

Whilst the value of coins is derived from the law, that of wine, grain and other like commodities, whose denominations or names are not imposed by law, is derived from their material and its weight or measure. Therefore, when used in payment or liquidation, they must be valued, paid and repaid according to such material, weight and measure, without regard to their value in money, which is extrinsic, and has nothing in common with the material of wine or grain. If paid for with money the payment should produce an equal quantity of the wine, or grain, or other material borrowed.

The general result of the foregoing argument is, that the efficacy of money is derived from its legally imposed value. Money is a thing quarum datione possumus in creditum ire (says Paulus) quia in genere suo functionem recipiunt per solutionem, quam specie, that is to say, which when acquired by its possessor, he may dispose of at will, from which it is said mutui datio, quod de meo tuum sit. One who borrows money is not required to repay the same pieces of money, but pieces of equivalent lawful value. One coin of a given lawful value may do duty for another coin of like lawful value. The word functionem used by Paulus is from the verb fungor, which signifies "taking the place of." Such function is exercised (and can only be exercised) at the time of payment. The law is of universal application which demands that the thing repaid shall be of equal worth (bonitate) with the thing received. Hence it was declared by the jurisconsult Pomponius: Cum quid mutuum dederimus, et si non cavimus, ut æque bonum nobis reddatur, non licit debitori deteriorem rem, quæ ex eodem genere sit reddere, veluti vinum novum pro vetere: nam in contrahendo quod agitur pro cauto habendum est: id autem agi intelligitur, ut ejusdem generis, et eadem bonitate soluatur quod datum est. From this text

it is evident that the thing repaid is only required to be of equal worth (bonum, bonitate) with the thing lent. Therefore the debtor, in either gold or silver species, may discharge his debt by paying it in money of equal worth, that it is to say, in equal denominational value which the said gold or silver species had at the time of the obligation. For the efficacy of money is in its legally imposed value. This reading of the text is clear and cannot be gainsaid without bringing the law into disrepute. If ever it is gainsaid, justice will view with satisfaction the overthrow of the law. It is a general rule that when the amount of a debt is in dispute we must look for a solution of the question into the contract, will, or other instrument or act of negotiation and the time and circumstances which surrounded them, and not into the accidents or exigencies which afterwards occurred. Under this rule, a debt in species whose value has augmented since the date of the contract may and should be repaid in other species of the same estimated value, which the money that was lent or agreed to be paid, possessed at the time of the contract. By a parity of reasoning, if the money has fallen in value, it may and should be repaid with as much money of the day of payment as will equal in value the money lent.

In payments, one piece of money is lawfully receivable for another piece of the same denominational value: in other words, one performs the function of the other. For example, a debtor who has contracted to pay gold ecus (sun-crowns) may lawfully discharge his debt in any other species having the same denominational value. This denominational or legally imposed value, is that which gives it essence and renders it useful in commerce. In short, THE VALUE OF MONEY IS ITS LEGALLY IMPOSED VALUE. The legal rule requires that the payment shall be equal in value to the loan at the time of the contract. The value of ecus in other moneys at the time of the contract was their legally imposed value. Therefore the payment may also be made in ecus or other moneys at the legally imposed value of ecus in such other moneys at the time of payment.

The following forms of contract appear in Baldus, a jurisconsult in the fourteenth century:

A certain sum in gold or silver coins was agreed to be paid with a declaration of the value of one species in the other, as gold ecus of 60 (silver) sols each. In this case the debtor had the option to acquit himself either by paying ecus, or sols at 60 to the ecu.

A certain number of gold (or silver) coins were loaned with the stipulation that they were to be repaid in the same species and num-

ber, without any mention of the legal denomination or value of such species in other species. In this case the debtor was required to pay in kind. Said Baldus: Nec ultra marx utrumque, sed alterum pretium vocatur, that is to say, money is to be taken, lent and contracted for, according to its quantity and estimated value.[2]

But Papinianus (died A. D. 212) expressly says: In pecunia non corpora cogitet, sed quantitatem. In other words, in contracts for money the contractors do not hold in mind its material, but its quantity, and this of course depends upon its legally imposed value. Therefore *if contracts for money are framed not according to its quantity or legally imposed value, but according to its material, such contracts are unlawful.* If a loan is made of gold money and it is stipulated that gold money shall be repaid, even though the value of such gold money in other money be not expressed, yet the loan is payable in other money of equal legal value, because such a function is implied in the contract: indeed, the contract would gain nothing by such expression of value. According to the Emperor Severus, Nihil hæc res mutat conditionem juris et constitutionem. From this rule the learned have drawn the corollary that the expression of that which is implied, adds no force to the implication.

This is the form Alciati (A. D. 1492-1550) employs in all his contracts: Quæ ad naturam contractus, pertinent pro expressis habentur. Hence an obligation to pay 100 ecus is equivalent to an obligation to pay 100 ecus sol, each such ecu being equivalent to 60 sols Tournois, such being the equivalents established by law. It is not necessary to stipulate in the obligation that the ecu is to be counted as equal to 60 sols Tournois, because that omission is supplied by authority of the law. This jurisconsult clearly argues the identity of two obligations, one of 100 ecus with no statement of their value in other money, and another of the same sum *with* such a statement of value. In order to show the invalidity of any stipulation of equivalents intended to override the law, he says that if 100 deniers are called for by the contract and payment is made in ecus according to their lawful value in deniers, such payment is a complete satisfaction of the debt. It is a response which complies with the demand. Nam stipulanti denarios, says the jurisconsult, ejusdem quantitatis aureos spondendo obligaheris.

This argument is not impaired by the interpretation of Acursius,

[2] In view of the principle insisted upon in the text, a few lines below, the Translator is not at all confident that with reference to this particular case he has caught the precise meaning of the author.

who cites a text of the jurisconsults where a loan of gold denarii is repaid with gold ecus or gold ducats. The denarii are in reality promised to be repaid at their value in other money. This is not stated as part of the contract, but it is implied, the law supplying the omission. The term denarius, if we consult its history, really implies silver money and not gold money at all. The denarius was a silver coin of the Romans, valued in the law at 10 aces. Its recognition and repayment as a gold coin is a proof that diversity of moneys does not lead to a diversity or confusion of obligations, but that the latter are dischargeable in any money of equal lawful value. A contract to pay 100 ecus is tantamount to an obligation to pay, for example, 300 livres, or 6000 sols. Thus, says Jason, an obligation to pay in one money, is equitably solved by its payment in any other money into which the first is legally convertible.

Long before the decision rendered by this jurisconsult, the Roman people sanctioned the practice of paying silver money with gold money when their relative value was determined by law. Thus in their treaty with the Ætolians, B.C. 189, it was agreed that the latter should discharge 500 talents due in silver by paying one-tenth the like quantity of gold (that being the legal ratio of these metals in the Roman coins of that period). The transaction is described by Livy (XXXVIII, 11), in these words: De pecuniæ summa, pensionibusque ejus, nihil ex eo, quod cum consule convenerat, mutatum. Pro argento si aurum dare mallent, darent, convenit; dum pro argenteis decem aureus unus valeret.

Bartolo and Baldus agree in holding that an obligation to pay gold coins is dischargeable in silver coins of equal legal value. This is equal to saying that whether or not the value of one money to the other is expressed in the contract, it is dischargeable in the money of the day of payment at the rates prescribed by law. If 100 ecus are promised, each worth 60 sols, the promise is fulfilled either by paying 100 ecus or 6000 sols, or other legal equivalents in money, whatever they may be. Barbace says that an expression in the contract of the value of one money in another at the time of the contract, does not affect the operation of law upon such contract, or fix or limit the quality of monetary equivalents.

It has been argued that if a debtor who had contracted to pay a certain number of gold or silver pieces of a given weight, were permitted to satisfy the debt with a lesser number of such pieces, or with pieces of lighter weight, (no matter what legal enhancement of value had taken place in the meanwhile,) this would be inequitable. The

answer to this argument is that *to measure money by weight is to destroy the prerogative of the State to regulate the value*, that is to say, the denominational or imposed value, *of coins*. Money is not subject to the same laws as commodities and it cannot be contracted for in like manner. If it could be, then such contracts would nullify the policy of the State; they would destroy its power to regulate or impose a value upon money; and they would operate towards the entire disuse of money and substitute the use of its material in its place.[3]

Such contracts (to pay species of a given weight) must be construed according to the denominational or lawful value of the coins at the time of the contract, and held to be dischargeable in any money of like value at the time of payment, without regard to any enhancement or diminution of value that may have occurred meanwhile. The denominational value expresses the species at the time of the contract. A contract to pay ecus must be construed to mean ecus, *or other moneys*, according to the value in ecus of such other moneys at the time of the contract. The debtor owes no more.[4]

Says Proculus: Ut ad id quod actum est interpretatio redigatur. Contracts must be construed according to the mutual understanding of the contractors. No one can equitably be obliged to do more than he wished or consented to do, and it cannot be held that he consented to that of which he was ignorant. In 1540 when the ecu was worth 45 sols Tournois, Sempronius sold to Titius 8 ecus worth of income (rente) the latter agreeing to pay for each ecu 45 sols. In 1575 the value of the ecu was raised by law to 60 sols. Such enhancement was not mentioned or contemplated in the agreement between them. Both were ignorant at the time of what afterwards took place. The conclusion is therefore irrefragable that Titius may discharge his obligation either with 8 ecus or else 360 sols. It would be monstrous to

[3] Such has precisely been the effect of the "free" coinage legislation of the 16th century in Spain, which legislation was derived from the Moslems of Granada, and by the Moslems, from the Brahmins of India. "Free" coinage is an euphemism for private coinage. From Spain it passed to England, where it was enacted at the instigation of the East India Company and the merchants of London, in 1666. It has since been ignorantly copied in many States of the Occident. Its operation is to undermine Money and the Monetary Measure and reduce all transactions to barter, the barter of commodities for the precious metals. But for the paper and credit systems with which it is associated, it would have gravely imperiled the prosperity of these States. As it is, it condemns them to a perpetual recurrence of commercial revulsions which are wholly unnecessary and entirely avoidable. Trans.

[4] By analogy, a contract to pay a gold dollar must be construed to mean either a gold dollar, or one hundred cents in other money; one hundred cents being the value of the dollar at the time of the contract. Trans.

compel Titius to pay 480 sols because forsooth the legal value of the ecu had been raised from 45 to 60 sols since the agreement was made. Neither of the parties had any such enhancement in mind; and if the creditor were paid 480 sols he would certainly receive more than he gave. It will not do to rave against the law, for to this, all contracts and agreements must give way. The law is supreme so long as it is not changed and conditions remain the same at the time of payment as they were at the time of the contract: it must remain equally supreme when it is changed. But here the change in the law does not affect Titius, for he only agreed to pay for each ecu 45 sols, that being the value of the ecu at the date of the contract. He cannot be required to pay 60 sols per ecu, because that was not their value when the contract was made. He can only be required to pay 45 sols Tournois for each ecu.

Even though the gold ecu of 1540 and 1575 were of the same stamp, material and weight, its essential value, or purchasing power, may have altered. According to Ulpianus (died A. D. 228) if value be added to or taken from a thing, such thing is no longer under the domain of natural law, but of the civil law. The augmentation in the value of the ecu makes the ecu different at the time of payment from what it was at the time of the contract; and the contracting parties cannot maintain the contrary. If the debtor (Titius) paid in ecus, he would pay them at a higher valuation than that which was stated in the law at the time of the contract.

The denominational or imposed value of money is a public, not a private act. The exercise of such a prerogative on the part of a private individual would expose him to the penalty of death. The value of money is imposed not for the profit of individuals, but for the benefit of the public, who therefore have the greatest interest in upholding the authority of the law, so that the value or purchasing power of money may be rendered stable. Says Gaius (tempo Antoninus): Ut pecuniarum una et eadem sit ubique potestas. This could not be the case if private individuals were permitted to regulate the value of money, or stipulate it in their contracts; for such license would soon degenerate into fraud and tyranny. Money was devised to obviate the difficulty and inequality of barter. Ut perpetua æstimatione difficultatibus permutationum æqualitate quantitatis subveniret. Such difficulty and inequality would hardly be obviated if private individuals in their contracts were permitted to regulate the value of money according to their own interests and vagaries. In order to prevent this usurpation of the prerogative of money, the law will set aside

all contracts made by private individuals which undertake to fix or determine the public value of money, whether by augmenting or by decreasing the legal value of coins, as acts contrary to public policy.

Money is called stable (stabilitas) because the law requires contracts to be discharged in money of equal worth (bonitate), that is to say, money having the same denominational or legal value as the money of the contract, no matter whether any monetary changes have occurred since the contract or not: for it is not according to future accidents but mutual understanding at the time, that a contract is to be construed. Any other rule of construction would render money unstable and contracts speculative and uncertain. Such is the opinion of Oldrade (De Spec.) John Andreas, Portius Azzo and Panormus.[5] That severe and upright critic, Charles Du Moulin, worthy of all the praises which Budæus has lavished upon Laurence Valla, holds this language in his celebrated Questions 90 and 91: Herculis Alexicaci nomine dignus, qui nullius unquam hominis offensione, aut scriptoris auctoritate deterritus est, quo minus veritatem à monstris vindicare niteretur.

After adducing numerous arguments on both sides of the case, Du Moulin finally concludes in favor of the Money of the day of Payment, and cites several decisions of the Court of the Parliament of Paris, which conform to this opinion. I myself recall a decision given in the case of the Canon and Chapters of St. Mainbeuf of Angers against Maitre Jean Collasseau et als. The plaintiff sued for the re-

[5] Says Del Mar: "Something more is intended to be conveyed by the Roman expression stabilitas applied to money than what is usually supposed. All commodities are in fact consumed, or else are necessary or applied for the purpose of consumption. Money is not intended for consumption; money is not consumed, nor is it necessary or applied for the purposes of consumption. It is intended to remain fixed, constant and stable. Hence the term stabilitas when applied to money is of great and peculiar significance and was evidently derived from the Roman law of the Commonwealth before the conquest of Spain, when money was indeed stable and not subject to augmentation or diminution, as it was afterwards, with every vicissitude of war, discovery and mining. The sole function of money is to measure the equivalents of commodities when offered in exchange so as to facilitate such exchange. In order that it may exercise this function in the most perfect manner its symbols should not be made of any material that can be profitably employed for the purposes of consumption, because in such case it cannot be made a stable measure. The Spartans learnt this lesson more than twenty-five centuries ago; the Athenians, Ionians, Byzantines and Romans all learnt and practiced it afterwards; but the Conquest of Spain effaced the lesson and Cæsar blotted it out altogether by substituting METAL in the place of NUMBERS (for such is the meaning of nummi) for money, just as he substituted himself in the place of Jupiter, as a Deity whom all mankind was compelled to worship under the penalties prescribed for crimen læsæ majestatis divinæ." Trans.

covery of six ecus sol of rente (contracted for when the ecu was valued at 45 sols) and the Seneschal of Anjou, or his Lieutenant, before whom the case was tried, condemned the defendant to pay the six ecus at the rate of 60 sols each, their legal value at the time of payment, without regard to the tender which Collasseau had made of ecus according to their value at the time of the contract. In this case I represented the Crown and contended that Collasseau had made a good and lawful tender of his debt; however, without avail. From this decision of the Seneschal, Collasseau appealed to a higher Court, where the sentence of the Seneschal was reversed and judgement was given in favour of the appellant. The Court ordered that Collasseau should discharge his indebtedness by paying sols for ecus according to their legal value at the time of the contract (namely, 45 sols for each ecu). It also ordered that all sums which had been paid in excess of this measure should be deducted. The last part of this decision decides an issue separable and distinct from the first: it decides that all sums paid in excess of the legal or denominational value of coins may be sued for and recovered at law: as otherwise the debt would be overpaid: a decision that fully accords with the opinion of the learned John Andreas.

CHAPTER XIV.

EQUATION OF THE TWO DOCTRINES.

Money loaned by a creditor to a debtor is by the latter held at the risk of the former, for the sake of the equivalent he has received for it—The understanding is that so much money is to be returned as will equal the value lent—To demand payment in coins which have risen in value is the most usurious of usuries—Usury must not be furnished with two sources of profit; one is enough—Money may be lowered in material and yet retain its value—In estimating the value of money, the material is not to be considered, but the value or denomination stamped upon it—The "noble" character of the precious metals is not taken into consideration in commercial transactions—Ordinances of Philip le Bel confirming this opinion—Like ordinances of Henry II.—He commands his subjects to make contracts in "sols" and "livres" and not in gold coins—Equity of this law—Ordinances of John I., of Spain—In contracts, the consideration depends upon the understanding of the parties—Law of Solon on this subject.

WE have now set forth at some length the two opposite opinions on this important subject, each of such opinions being upheld by decrees of the Court of Paris and by various jurisconsults. The opinion last discussed seems to us to be the most sound, equitable and humane: because obligations quæ re contrahuntur should not be

required to pay advantages other than those which have been received, re non potest obligatio contrahi nisi quatenus datum est, says Paulus. In borrowing money the debtor receives money at its current value, or that which is stamped on the coins, because in commerce the material of coins is not considered; only their value.

If after the contract is made a rise occurs in the value of other coins than those which were lent by the creditor and employed by the debtor, this is not a profit or an advantage arising out of the contract and, in consequence, such coins cannot be demanded in payment. The rise of such coins is an incident of legislation not embraced in the contract and for this and other reasons payment in such coins is not enforceable by the creditor. Even though stipulated in the contract such mode of payment is not enforceable, because it is speculative and gambling. In loans of certain gold coins, although the debtor stipulated to pay arrears according to the augmented value of such coins which might appear at the time of payment and it was understood that the debtor was also to redeem the principal in coins according to the rise which may have occurred by the time of payment, such convention was held to be unlawful, usurious and null; because such augmentation of value exceeded that of the coins lent by the creditor. The principle is that a contract is usurious where more is stipulated to be paid than was lent. Thus, says St. Jerome, Providens divina scriptura omnis rei aufert superabundantiam ut plus non accipias quam dedisti.

A contract promising to pay an ecu of rentes according to such augmentation of value as may occur after the obligation, is a stipulation to pay more than has been lent; it is an increase in the obligation, which consequently is usurious and against public policy. Ulpian says, Generaliter observari convenit bonæ fidei indicium non recipere præstationes, qua contra bonos mores desiderantur. If such contract cannot be legally made, it cannot be deduced tacitly from a contract already made. Apropopos of this, Ludovicus Romanus, speaking of an augmentation in the price of grain, says that when such augmentation occurred since the contract was made, it is not comprised in it. If contracts cannot be made which expressly stipulate that the augmentation in the value of coins, occurring after the contract, shall be paid to the creditor, or by reason of the fact that the value of the coins in which the contract was made has augmented, then such augmentation by tacit convention cannot be argued to the advantage of the creditor.

Actions arising out of obligations which are engendered in con-

tracts whose basis or scope is illegal, partake of the nature of such contracts; they cannot be sustained; and the litigants must be nonsuited. Other unlawful usury occurs in payments of arrears according to such augmentation as may have occurred in the value of certain coins. This is usury upon usury, called by the Greeks anatocismus; id est usuræ renovatio et usurarum usura. Those Emperors were justified who expressed their horror of it by deeming its perpetrators infamous. In modern times rentes bought for silver and demanded to be paid in gold have succeeded the ancient usury. For this reason the laws concerning the subject in almost all cases provide that rentes shall be created specifically in silver money. Therefore if in payment of rentes there shall be added any augmentation of value which occurred since the contract was made, or since the creation of the rente, even if such augmentation arises from a belief that gold specie is due, such demand is usury upon usury; and is in contravention of public policy.

In such an exaction of rente there are two lucrative consequences and a double profit from the same sum, or principal, of the rente stipulated; one of such profits being derived from the augmentation in the value of the coins. It is therefore unlawful. For this reason Claude Sisel in summing up the opinion of the jurisconsults on the Digest in Lex cum quid, says that in payment of rent created in coins which have augmented in value since the contract was made, such augmentation is not due and should not be paid to the creditor; because it is intolerable that he should be allowed to take double usury on the same sum. This is also the opinion of the ancient glossator Pileus, in his Thirty-five Questions reported by John Andreas, *In d.* Nunc aliqua, in verbo Olim. Pileus makes the distinction between a simple debt, in which he seems to be of the ordinary opinion, and an usurious debt, as is the loan of rente to be acquitted at the future value of the coins lent: the payment of which should be made according to the value of the money at the time of the obligation; so that, according to his opinion, the creditor may not take double usury. This doctrine is also regarded sound by Francis Pupurat. It was also the ancient custom and observance of this kingdom, as attested by Faber, who held that even though the money is augmented in value by the Prince, nevertheless payment must be made according to its value at the time of the contract. It is not worth while to quote those who argue that such usury was abolished; because the numberless decrees of the Court of Appeal, which conform to the first opinion, prove that it is upheld by an infinity of equitable reasons.

To satisfy the argument it is proper to state that it was the diminution (degradation) of the small money which prompted the enhanced value of gold coins, as is noted by Ismola, Bartolo and Corneus.[1] In other words, the appreciation of the gold coins was caused by the degradation of the silver ones.[2] We learn from the registers of the Mint of France that the douzaines, from the past hundred years, have been enfeebled by alloy to the extent of a fourth or thereabouts; so it seemed reasonable to raise the gold ecu proportionally by a third more than as it was anciently valued. This augmented value, however, surpassed that of its ancient equivalent in douzaines. Nevertheless, in material, the ecu remained what it was previously.

The foundation of the present argument is the rising and falling of money. This has been effected chiefly by two means. The first is where the value imposed upon the pieces of money by the State was raised or lowered. The second is where the material of the money was increased or diminished.

First, we shall speak of the rise in the value of gold coins to equal the increased value of the small money, a case in which an example can be given of the Tournois douzaines, which were raised to fifteen deniers, when the value of the gold ecu was raised in proportion. The debtor in ecus, if his payment is in deniers, for example, is entitled to deduct the increased value of the ecu since the obligation was made, because the enhanced value of the douzaines was the cause of the increased value of the ecu. It sufficed for the debtor to pay as he received, or as he promised, at the time of the obligation.[3] But if the enhanced value of the ecu occurred through a fall in that of the small money, the debtor in ecus would not be entitled to diminish his payment; because such enhancement is the reflection of the value of the small money diminished since the obligation. If at the time of the obligation the douzaine was valued at 12 deniers Tournois, and at the time of pay-

[1] Bartolo in d. lex Paulus: Corneus, consil. 279, 287.

[2] From the text of Grimaudet we gather that the law of A. D. 1450 fixed the following equivalents: 12 deniers or 1 douzaine equal 1 sol; 20 douzaines or 20 sols equal 1 livre; 2½ livres equal 1 écu, or 50 sols, or 50 douzaines, or 600 deniers. And that the law of 1575 fixed the following equivalents: 12 deniers equal 1 sol; 15 deniers equal 1 douzaine; 1¼ sols equal 1 douzaine; 16 douzaines or 20 sols equal 1 livre; 3 livres equal 1 écu; or 48 douzaines, or 60 sols, or 720 deniers. At the same time, 1575, the écu in trade was valued at at 65 sols; in other words, the gold écus were at a premium of 8⅓ per cent. in silver sols. Trans.

By the old law there were 12 deniers to the douzaine or sol, 20 douzaines or sols to the livre and 2½ livres to the écu; hence 600 deniers to the écu. By the new law there were 720 deniers to the écu. Grimaudet's contention is that the écu would be equitably paid with 600 deniers. Trans.

ment it had fallen to 10 deniers, which is a sixth lower, and the value of the ecu was raised pro rata, and if the ecu at the time of the obligation was valued at fifty sols and at the time of payment had risen to sixty, the debtor should pay without diminution on account of such rise of the ecu.

The Second case of our contention is when the material of the coins is diminished or increased while the same value is imposed on the coins, as in the example of the Roman aces, which Pliny says were lowered in weight from one pound to two ounces: Nevertheless the value of the silver denarius, which was worth ten aces, did not rise, because, lawfully, the ace of two ounces remained of the same value as that of one pound. A like example is that of the French douzaines Tournois. Although they were enfeebled by alloy by more than a fourth, yet their imposed value remained unchanged. It being true, as we have so often repeated, that the value of money is regulated not so much by the material of which it is made, as by the imposed value, it followed that the newly made Tournois douzaines, although of baser alloy than the ancient ones, nevertheless were of equal value. It is an error to assume a difference in their value from that of the ancient douzaines because of the difference in the value of the material. Consequently, although the douzaines of the year 1480 were made of better alloy than the later ones of 1575; yet because of the same value being imposed on the new as on the old douzaines, the 20-sol livre of new douzaines is equal in value to the old 20-sol livre and can pay the livre promised at the time that the metal of the ancient douzaines was worth a fourth more than the metal of the new douzaines, so long as the "livre" of money is composed of the like number of 20 sols. It is badly argued, because the metal of the douzaines Tournois current in 1424 was better by a fourth part than the metal of the douzaines of 1575, ergo that the money was better by one-fourth and that it was meet to pay by this reckoning. It is badly argued, because the purchasing power of the douzaines, made in each of these times, was not in the material but the imposed value; and the douzaines made in both of these times had and have function, one for the other, that is to say, that the douzaines of the year 1575 can be used for those that were struck in 1480 without any difference, so that the debt of livres stipulated in 1480 is the same as the livres of douzaines of the year 1575 and can be acquitted in the same number of douzaines of new coinage as of old douzaines. The ecu, by ordinance of the king in 1575, being placed at 60 sols, was heightened somewhat above its value in 1450, and one-fourth above its value in

1540. Such increase cannot be called the reflection of the value of the new money compared with the value of the old, because, as we have already said, the value of the new current money is equal to that of the ancient and so the enhancement of the ecu in this case was not occasioned by any diminution in the material of the douzaines, but by the will of the Prince. The increase was not contemplated at the time of the obligation, was not comprised in it, and the debtor is not liable to pay it.

Paulus says that the creditor is not bound to receive payment in other forms of money than those which are stated in the contract, if by so doing he loses. To which it is to be observed that this dictum is not made in order that the debtor should pay more than he received —which is inequitable—and which he would do if he paid in money of augmented value; but it is made to prevent the creditor from losing, by receiving payment of the debt in other money than what was understood in the obligation. For instance, a foreign merchant may have an interest in being paid in gold ecus, rather than in silver douzaines, or other money, because gold coins may have readier currency in his own country. In such case he would naturally make it understood that he could only receive payment in such gold species. This convention should be respected, because otherwise the creditor would lose. But if the price of the ecu in silver coins had risen since the contract, the augmented value should be deducted for the reasons above given.

Commenting upon the lex Paulus, Faber, who follows Dinus, says that when payments are made in such species then the creditor is not paid as much as was loaned, he has not received satisfaction; even although there may be no appreciable loss except in large payments. In gold specie payments the debtor is not obliged to pay more value than he owes, but he should pay his debts in coin of the stipulated metal, according to its value more or less at the time of payment; deduction to be made for the rise in value of the specie, if any has occurred since the time of the contract.

It was in this sense that judgement was given at the Parliament of Paris, March 28th, 1538, in favour of Maitre John de la Haye, Counsellor in the said court, called the Provost Court of Paris, against Maitre Arthus Rioust, doctor and regent in the faculty of Paris. The plaintiff demanded the sum of 50 livres of mortgage in the specie stipulated in the contract, at its value at the time of the contract. The court ordered the defendant to pay the principal in the same specie as stipulated in the contract, but in its value in other money as

fixed in the royal ordinance at the time of payment, and the arrears on the same basis, and refused to consider the "nobility," rarity, or superiority of the gold specie in which the payment was demanded; because "deniers" and "livres" are to be considered according to their legal estimation. This is why it is said that *sentiment is not conveyed in deniers.*[4] Faber says that such is the ancient custom of France, which does not spring from accident (as is the case with many customs of this kingdom) but from an ordinance of Philip le Bel, made to correct the abuses of usurers, those who lent "deniers" and made their debtors pay in specie which had become enhanced in value by the time of payment; thus gaining on the value of the species which had occurred since the time of the obligation. To restrain the avarice of these usurers, Philip le Bel, at Montargis, on the Saturday before Notre Dame Candlemas, in the year 1311 made the following ordinance: Cæterum quia metuentes plures in fraudem usurarum pecunias vendunt vel cambiunt et in contractu conventionum adjiciunt, ut solutio debiti eis fiat in alio valore vel alia pecunia quàm sit illa quam tradunt, volumus quod nullus teneatur solvere, nec quis creditor præsumat exigere, vel recipere in eo modo pecuniæ traditæ per eum, vel alios debitum, in majore valore quam in valore pecuniæ traditæ, quam tum videlicet valebat et currebat communiter juxta ordinationes nostras tempore contractus et quo pecunia tradita fuit: Et si forsan contrarium fit conventum, talis conventio ipso facto sit nulla.

It would seem that this ordinance and ancient observance should for many reasons, have put an end to this practice; nevertheless by reason of the insatiate avarice of the creditor classes, it had to be renewed in the time of Francis I., and Henry his son, in whose reign it was doubted if obligations contracted in species which had not yet appreciated, but which might appreciate, in value, by the time of payment, should be discharged in the coins specified. To settle this matter, to defeat the greed of creditors and because he foresaw that owing to the hard times the value of gold species would increase from day to day, Henry II. made an edict at Angers in 1551, by which he revived an ancient ordinance, which forbade anybody, under penalty of imprisonment and confiscation of goods, to contract otherwise than in "sols" and "livres," forbidding the use of the word "ecu" or the name of any other gold or silver species. This ordinance recites that all persons, of whatsoever rank or condition, shall make their contracts, whether concerning rentes, heritages, marriage settlements or sales of merchandise, in sols and livres only, without using the

[4] Lex nummis. ff. de in lit Jurand.

words "ecus," or the names of other species, as was previously the practice. To obviate disputes concerning the payment of rentes, merchandise and other obligations, previously made and accepted in ecus, he ordered that debtors should acquit themselves by paying for each ecu sol, forty-six Tournois sols of the money having currency at the time of the ordinance; and for other species in like manner and proportion. Contracts in obsolete gold species were to be discharged with reference to the value which was fixed to the gold marc at the time when such contracts of loans, marriage settlements, or otherwise, were made.

In this ordinance we must note two things: first, that to suppress the usurious practices which are involved in obligations couched in gold species (as with the ecu), the king commanded his subjects to contract in the *moneys of account* called "sols" and "livres" and forbade contracts in *species*. The second thing to be noted is that to make sure that obligations already contracted in ecus should have an explicit value, the king ordered that debtors might acquit by paying 46 sols to the ecu. Although it seemed hard to the creditor, yet for obligations contracted when gold species were at par, this compromise was fair and liberal enough to satisfy what was actually owing. This settlement, rigorously upheld at the time of the ordinance, seems all the more just and humane when regard is had to the appreciation of the ecu sol which has since occurred. In the present year, 1575, the ecu was valued by ordinance at 60 sols and, in commerce between merchants and others, it was worth 65 sols, Tournois.

I know well that it was objected to this ordinance that it was not passed or ratified by the Court of the Parliament of Paris, but was only a Mint act, which, although it could lawfully alter the value of money, had no authority to impair the terms of a contract, because this was a subject not within the jurisdiction of the Mint, but only of the Court of Parliament. The reply is that if, as our courts enjoin, we must accept the law of the Roman empire, so far as it is applicable, then we owe still greater reverence and obedience to the ordinances of our own kings, which, even when they are not ratified by the Court of Parliament, should be respected and obeyed.

Diego Covarruvias, a Spanish jurisconsult, refers to a law made by John I., king of Aragon, in the year 1367 and by Henry II., in 1511, by whom this same principle of payment was upheld and practiced. From these ordinances it is evident that obligations when contracted in gold species and not in livres and deniers yet were dischargeable in livres and deniers according to the value imposed upon them by

the Prince, with regard to the time when the contract was made. Otherwise the consideration of contracts would not be certain and would not depend upon the intention of the parties, but upon the uncertain value of money, whether it rises or falls after the contracts are made. This rule concerning obligations contracted in species, originated with Solon the Athenian legislator, who on a similar occasion is credited with having made a law by which he augmented the value of the mina to 100 drachmas, whereas formerly it was valued at 72 or 73 drachmas; so that in paying minas there were a number of drachmas to be deducted, having regard to the time of the obligation and not to the number of minas.[5] Thus the debtor was relieved while the creditor lost nothing: which is the gist of our argument.

CHAPTER XV.

MONETARY RULE IN EXCEPTIONAL CASES.

Pignorative contracts—Redemption of property—The laws of Bourbonnais—Limitation suggested by Baldus—A debt of money is a sum of money, not a weight of metal—Individuals cannot contract themselves out of the law—Deposits at risk of depositor—Deposits at risk of trustee—A deposit of money is a loan—This may be repaid in money of the day of payment—Testamentary bequests follow the same rule.

THERE is a class of contracts, known to the law as pignorative, relating to loans, pledges, hypothecation, the redemption of property forfeited and sold, which, being of a peculiar and exceptional character, often challenges the correctness of the general rule with regard to money payments. Du Moulin, in Questions 93 and 97, as well as others following, is of the opinion that the general rule applies to certain pignorative, as well as to other contracts. But in respect of redemptions of property he appears to be in doubt. There are reasons why the man who has bought redeemable property should, if the property is redeemed, be repaid his outlay in the same sort of coins that he expended. The foundation of these reasons is that the purchaser of redeemable property should be exposed to no loss, because in accepting the redemption money and surrendering the property, he is not performing a voluntary act but merely obeying the law.[1] Bœrius applies a like rule to all pignorative contracts.

On the other hand, it must be borne in mind that the law which permits the redemption of forfeited property, only requires the owner

[5] Plutarch, in vita. See previous note herein on this subject.

[1] Lex debet. ff. de edilit edict. Lex 2, § fin. ff. si quis cautio.

to reimburse the buyer in the sum of his actual outlay and expenses, not in any special kind of coins, but in the money of the realm, which represents the denominations laid out and disbursed.[2] If the coins in which payment is made have, since the forfeiture, been raised in value by the Crown, and the owner pays in kind, he pays more than the law requires. For if the coins offered in payment had meanwhile been lowered in value by the Crown, would it not be unjust to the holder of the pledge to insist upon his receiving full payment in the same number of such coins as he paid out?[3]

By the laws of Bourbonnais, art. 432, it is expressly provided that redemptions of pledges should be fully paid by offering and paying the sum due, regardless of the material or weight of the coins. This principle has guided me in my work on Pignorative Contracts.[4] Baldus limits the application of this principle to cases where the rise in value occurs soon after the making of the pignorative contract;[5] but I question the equity of such limitation. The law says certa est nummorum æstimatio; and deniers, the usual money of contracts, are invariably thought of and mentioned by numbers, that is to say, by their legal value and not by material or weight; it being of course understood that they are to be in good condition. It must always be borne in mind that when coins are raised in value, the enhanced value (let us call it the seigniorage) goes to neither buyer nor seller, but to the State.[6] *A debt of money means a certain* SUM *of money, not a certain* WEIGHT *of metal.* Should it be replied that if the lender is not to gain by the augmentation of the legal value of his coins he will refuse to lend and prefer to keep his coins, the answer is that he did not lend in order to reap a profit from augmentation; but to derive a profit by usury. On the other hand, he has in fact avoided such loss as may have occurred from diminution in the legal value of his coins.

A contract to pay so many coins of a given weight and fineness, coupled with the following stipulation: "no matter what their value may be at the time of payment," cannot be lawfully enforced; because coins are things which the State controls and because the exigencies of State or the requirements of justice may render it necessary to alter their nominal value.

Another question arises in this connection: does the general principle of money payments apply to a deposit? A true deposit is where

[2] Lex si is quid § 1, ff. de solut.

[3] Lex si voluntate. C. de re scind. vendit. Lex illud. ff. ad. leg. Aquil.

[4] Liber v, cap. 7.

[5] In lex acceptam. C. de usur.

[6] Lex incend. C. de reb. credit. si cert. petat.

a thing is given up by the owner to the safekeeping of another person, at the risk of the depositor. In this case the identical thing must be returned to him. The ownership or title remains with the depositor and this rule holds as well with coins as with any other things that in commerce go by weight, numbers, or bulk. The trustee can only acquit himself by returning the things that were deposited. But if in accepting the deposit, the trustee or depositary is at liberty to use the things deposited, he may acquit himself by returning things of like kind, material, weight, number, or bulk. To this rule, however, money is an exception. Papinian says that money thus deposited egreditur depositi motissimos terminos.[7] Ulpian says such a deposit of money is a loan.[8] Neratius and Proculus say the same, that is to say, that if the depositor permits the trustee to use the deposit, it is a loan.[9] In such case the trustee may acquit himself by returning a sum of money in other coins equal to the value of the deposited money; such equivalency to be reckoned as of the time when the deposit was placed in his hands.

It remains to speak of testamentary bequests made in a certain number of specific coins. For example, suppose Menius in the year 1540 leaves to Sempronius the sum of 500 ecus, the legal value of which at the period of the will was 45 sols each. In 1575 when each ecu is valued in law at 60 sols the legatee demands his inheritance in ecus, without regard to the alteration in their value which the law has meanwhile made. The reply to this demand is that he should be paid according to the value of the ecu at the time the will was made, namely, at the rate of 45 sols to the ecu.[10] Said the illustrious Scævola: nihil pro futoro tempore significant.[11]

[7] Lex Lucius ff. de reb. credit. [8] Lex quod si ab initio de reb. credit.

[9] Lex certi conductio § fin. ff. de reb. credit. si cert. petat.

[10] Lex uxorem § testamento. Lex si res. ff. de aur. et. argent. legat. Lex Aurelius ff. de liberat. lig.

[11] Lex uxor. § uxori ff. de leg. 3.

CHAPTER XVI.

MONEY OF THE LAW AND MONEY OF CUSTOM.

Where the consideration money of contracts is not sufficiently defined, custom should rule—Cases when coins are valued higher by custom than by law—Instances where law is superceded by usage—In trade accounts, usage should be paramount—The value of coins depends upon the law—Private individuals cannot impose a value upon coins—Where custom and law conflict and both are in force, the latter should prevail.

IN some localities we find that under one name, coins of different values are designated, as under the name of ecu are comprised the sol and the crown, and under the name of ducat are comprised the ducats of Italy and of Spain. In Paris the livre Tournois and livre Parisis are differentiated. If a contract is made, the value of which is expressed in ecus or ducats and it is not declared which kind of ecu or ducat is meant by the contracting parties, the question would occur, how shall the contract be construed? The answer is that the contract should first be understood in the coins which it is probable the contracting parties had in their minds. It is usual in settling obscurely worded contracts, to look to the character of the negotiation and the nature of the contract to find out what was the intention of the contracting parties. In obscuris inspici solet, quod verisimilius est.[1] Francis Accursius, in expounding this law, supposes for example that a commodity is sold for ten livres, under the doubt whether the said sale was meant in livres of Verona or in Imperial livres. He says, that if the commodity was worth more than ten imperial livres, the contracting parties must have meant livres of Verona. If, on the contrary, the commodity was worth less than ten livres the contract must be construed according to the custom observed in the place where the contract was made, that is to say, in the livres which were most commonly used in the country where the contract was made. For example, at Paris it is the custom to use the livre Tournois and the livre Parisis. If land is sold for a thousand livres, without expressing the kind of livre, and as in commerce, one is more accustomed to use livres Tournois than livres Parisis, therefore the price should be understood in livres Tournois and not in livres Parisis. But, presuming that there is no case in point and that it cannot be decided

[1] L. in obscuris. ff. de reg. jur. L. semper in stipulationibus.

by custom which kind of money the parties made their contract in, it should be understood to be that which is of the lowest value. These three kinds of examples are comprised in the words of Ulpian; Nummis indistincte legatis hoc receptum est, ut exiguiores legati videantur, si neque ex consuetudine patris familias, neque ex regione unde fuit, neque ex contextu testamenti possit apparere. Which decision, if it is to be observed in testaments, for greater reason should be observed in contracts; [2] and if there is a dispute as to the place where the custom is to be observed, or of the place where the commodity was delivered, or where it was situated, Albericus is of the opinion that the custom of the place of contract should be respected. [3] The same should be said of doubtful weights and measures. Another question arises from the following: The misfortune of civil wars (which have put everything out of joint in this kingdom) and the avarice of those who have caused to be retired from circulation the small billon coins, have occasioned this mischief, that the gold and silver coins which have been valued in billon money by the edicts of the kings, have gone to a premium. A merchant purchases commodities for a thousand livres, in payment of which he offers ecus at sixty-five sols each, which by edict are only worth sixty sols. The creditor refuses them at sixty-five. The question is whether he has just cause to refuse. It seems not; for the value of the billon denier should be understood to be that at which it passes between merchants and in commerce by common usage and observance, and, as we have before said, the value of a denier depends upon public usage. It is the value at which it passes between merchants and other people that should be understood in such cases, rather than the value imposed by the Prince. The law that puts a value upon the denier retains its vitality so long as it is actually observed by the public. Its non-observance practically abolishes it. Says Julian: Nam ipsæ leges nulla alia ex causa nos tenent, quam quod judicio populi receptæ sunt; [4] and in the interpretation of money-contracts one chiefly considers its estimation among merchants. It is written in Genesis xxiii that Abraham paid to Ephron for a field where he buried Sarah, "four hundred shekels of silver, current money with the merchants."

Franciscus Aretinus [5] gives the following case: The ducat, by the ordinance or statute of Florence, was valued at forty-two sols, whilst among merchants it was current at forty-five sols. A merchant bought

[2] Pet. Jocob. titul. de cert. condict. gene. ex stipul. § 1, versic. sed quid si non fuisset. [3] In l. fundus ff. de emptio. [4] L. de quib. ff. de legib.

[5] Consil., 11. His Essay on Moneys is to be found in the volume by Budelius. Trans.

salt, or other merchandise. for which he offered to pay in ducats, at forty-five sols each. The seller refused the offer and demanded the ducat at the rate of forty-two sols each. On this point Aretinus sided with the buyer. For the opposite opinion it was argued, that the force and authority of money depend upon the public; that in a kingdom the public must obey the Prince and in a republic, the Law; that these authorities alone have the right to coin money and to impose a value upon the same; that this cannot be done by private individuals, who have neither the authority to command, nor the right to be obeyed, such as is vested in those who coin money; and that therefore such coins should circulate only at the value imposed by the law.[6]

The practice of merchants and others, who in commerce raise or lower the value of coins, should not be weighed against the ordinance of the Prince; because private individuals cannot impose their own value upon coins. Yet when such unauthorized valuation has been made and frequently practiced and allowed, it passes into a usage or custom. But as we have contended in our work on "Tithes," III, 6, the Bench can take no part in making the custom. Until custom and public convenience are in accord, compacts that are made in violalation of the laws, should not be countenanced or upheld on the ground of custom. The custom of paying gold coins at a higher value than that fixed by law should not be upheld, for that which has been put in place of the law should not be taken for the law itself. Exception exists where such custom has been confirmed by the tacit consent of the Prince, who in the transactions of state receives and pays money at the value at which it is current among merchants. Another exception occurs where he has instructed his officers to receive coins at a higher value than that imposed in his ordinances. This would confirm and authorize the custom, to which, as it has obtained the sanction of the Prince, it would be but reasonable that it should be observed by his subjects. Again, if such custom is confirmed by three or four years of practice known to the Prince and his officers, who do not interfere, then it would be reasonable to respect the custom, because of the tacit consent of the Prince.[7]

[6] L. fin. C. de vet. numis. potest. lib. II, C. Bart. in l. I. eodem tit.; et in L. qui falsam. C. ad leg. Corn. de fals.

[7] C. nulla c. si consuetudine c. frustra. c. consuetudo. Const. Justin. 134, § porro nonnullæ. L. jurisgentium. § et generaliter. ff. de pact. L. generaliter. ff. de verb. obligat.

CHAPTER XVII.

COUNTERFEIT MONEY.

The right to punish the making of false coins is a corollary of the right to strike lawful ones and belongs solely to the State—This does not include the mere passing of false coins, which may or may not partake of the greater offence—Counterfeiting is forgery against the State, or læsa majestas in the second degree—Nature and rights of the public treasury and fisc—Confiscation of the estates of counterfeiters.

BEFORE treating of counterfeiters and their punishment it will be well to remind the reader that to the State alone belongs the right to make and issue money, and that consequently to its officers alone belongs the right to judge whether coins are genuine or false. Such is the case even when the false coinage is fabricated by one to whom the King had granted the privilege of coining, as was settled in the action against the Count de Nevers. In such false coinage, the Royal authority, rather than the coinage privilege, has been violated.

If the King, in granting a privilege of coinage to the Count, gave him jurisdiction over counterfeiters, the latter would have had to be punished for counterfeiting the Count's money, not the King's. But this cannot be done. On the other hand, it has been decided in several cases that the crime of passing bad money is not necessarily an offence against the Crown; so that those who may not have jurisdiction over counterfeiters may nevertheless have the right and power to punish the offering of false money.

It is necessary to distinguish between coins which are debased by a public functionary and coins debased by a private person. The public functionary personates the State; for example, a mint-master who strikes degraded or debased coins. If more base metal is mixed with the gold or silver by the mintner than is lawful, he commits counterfeiting. Says Constantine: "Si quis nummos falsa effusione formanerit." These words can only relate to the public mintner who plays false in the melting of bullion: they cannot relate to private parties; because coins when struck by private parties, even though they contain the same quantity of fine metal as the genuine coins, are nevertheless counterfeit. A mintner also commits forgery when he stamps a coin otherwise than as provided by law. Neither may a vassal prince alter the coinage laws, as was done by Abd-el-Melik who struck gold

coins with his own image upon them instead of the insignia decreed by the Emperor of Rome. This was the reason why the Emperor Justinian II. made war upon him.[1] Again a person is guilty of counterfeiting, who having obtained the right or privilege to coin one kind of metal, for example, silver or copper, coins another kind, for example, gold. This was done by the Duke of Bretagne in violation of the privilege granted to him at Angers. For this crime he was disgraced by the King of France.

Those mintners who by permission of the King may strike coins of a prescribed form and stamp are guilty of counterfeiting when they coin in another form and stamp. As before stated, forgery is committed by private parties when they strike coins, even though the latter are of the same good material and correct weight as the official coins. Such correctness does not save them, because they have counterfeited the public stamp upon metal, so as to make the pieces resemble lawful coins, with the intent to take their place. Such false money is called "Adulterine" and the counterfeiters "Adulterers." Diodorus Siculus writes that the Egyptians out off both the hands of counterfeiters of money. This rigour was imitated by Galba commanding in Spain under Nero. Galba not only cut off the hands of counterfeiters, but had them nailed to their shops. This punishment seems to have been prescribed in Greece by the law written in the IXth book of the Basilicon under the title of de Adultero Moneta. The punishment of counterfeiting was to have the hand cut off. This law seems to have been taken from the Prochirum, an abbreviation of the laws of Constantine, who, to mark the heinousness of this crime which before was only punished as forgery, declared those convicted of the same as guilty of high treason (læsa majestatis). The crime was regarded as an attempt against the Emperor's authority, though not against the Emperor's life. In the former are included all those who made an attempt against the State. Cicero writes as follows: "Majestatis crimen illud est, quod adversus populum Romanum ejusque securitatem committitur." Equally culpable were those who used violence against the magistrate or Tribune of the People, of which crime Rabirius was accused and defended by Cicero.

When the people transferred to the person of the Emperors the au-

[1] Abd-el-Melik was not a vassal of Rome and the reason for objecting to his coins was not the one assigned in the text. The true reason had reference to the image of Christ which appeared on the solidi of Justinian, but was absent from the dinars of the Arabian. Consult Del Mar's "History of Money" on "The Sacred Character of Gold.' Trans.

thority and power which they had themselves previously exercised, this authority and power was called the Majesty of the Emperor, and those who made any attempt against their person, or against the existence of the State, were deemed guilty of læsa majestatis in the first degree and were called Perduelles and the crime Perduellio (murder). Counterfeiting money is læsa majestatis in the second degree, it is not an attempt against the King's authority or that of the State; it is the authority and credit of a magistrate usurped by a private person and is so defined in the civil law. See lib. 2, 3, 4, of the Pandects ad leg. Jul. Majesta. In these cases a difference is made between the crime of læsa majestatis and Perduellio similar to that between genera and species.

Ulpian notes a further difference worthy to be considered, viz.: When a person is accused of Perduellio, that is to say, of læsa majestatis, or high treason in the first degree, the law declares, Qui hostili animo adversus Rempublicam vel Principem, animatus est, and should such person die during the accusation, his heir must clear and justify him; otherwise his inheritance is subject to be confiscated. But when one is accused of læsa majestatis, ex alia causa, (as says Ulpian,) mortuo crimine liberatur. In other words, if one is accused of counterfeiting money and dies duriug the accusation, his crime is expiated and no confiscation follows. Bearing in mind these distinctions it would seem that the punishment for the crime of counterfeiting should only be exile, ex lege Cornelia de Falsis, (called by Cicero the Lex Nummaria,) which is the most ancient Roman punishment for læsa majestatis, in the second degree.

Constantine altered the ancient law and ordered the punishment of death against private counterfeiters and the punishment of burning and confiscation of goods against the public mintners committing falsification in the coining of money; because the crime is greater in him who commits this under cover of public authority. This greater penalty of burning is still practiced against counterfeiters, coupled with the confiscation to the fisc of the property of the condemned.

In this connection the word fisc is sufficiently significant without further explanation. The fisc is the private Treasury of the Emperor or King; the ærarium is the Treasury of the State. Although some of the Emperors neglected to observe a distinction between the ærarium and the fisc, yet there was always a legal difference between the two. Certain boroughs and nobles to whom fiefs had been granted have deemed their rights seigniorial and fiscal, after the example of the Imperial and Royal fiscs; and as if to confirm this view of certain

of the King's ordinances, the name of Fiscals has been given to the procurators of such nobles. But in fact they had no such fiscal rights; the latter being strictly imperial or royal. The exercise of such rights by boroughs and nobles is unlawful and the seigneurs of a fief cannot confiscate the goods and possessions of their vassals, except in case such right is expressed in their grant and recognized in the common law of the locality. The common laws of Anjou, art. 142 and of Maine, art. 147, have marked a peculiarity of this word "confiscate." They state that when the fief of a vassal is forfeited to his superior, this is not confiscation, but forfeiture of the fief. Confiscation differs from forfeiture in its being odious and exercised for an infraction of the law of the State. Confiscation can only be extended to such cases as are provided by law. It follows therefore that jurisdiction over the crime of counterfeiting only belongs to the chief justices of the Kingdom; and power is given them to confiscate only for the benefit of the Crown. Property confiscated as punishment for the crime of counterfeiting cannot belong to a feudal lord, although he may be the suzerain over the confiscated possessions.

Penal laws stand for real crimes and not for those that merely resemble real ones, therefore extension of punishment should not be made for crimes which are dissimilar. This is contrary to the spirit of the law, which requires that punishments by analogy or interpretation should be moderated, and that extension should not be wantonly made from one case to another.

The common law of Anjou and Maine orders confiscation for the crimes of heresy and of læsa majestatis, which are crimes of the first degree. In this class of læsa majestatis the crime of counterfeiting is not comprised. Nevertheles the property of counterfeiters has been frequently confiscated under these laws, through the subtle error of embracing the crime of counterfeiting in that of læsa majestatis.

The question is whether the confiscation of real estate which does not belong to the King, should inure to the profit of the King, or of the lord of the fief under whom the confiscated estate is held. This question is proposed by Guido Papa, Specule and Oldrade. It has been held that such confiscation of property cannot belong to the King, but should belong to the lord of the fief. By the Constitution of the Emperor Frederick it is provided that if a vassal offends the Lord paramount, for which offence he is deprived of his fief, such confiscation shall not inure to the profit of the lord who has been wronged, but to the under-lord, from whom the property is immediately held. This is founded upon the view that the vassal by his

crime renders himself unworthy of all feudal rights and they, being taken from him, return to their origin, which is the fief of the next lord; who can thus prevent that portion of his fief, which is the subject of forfeiture, from being condemned to the profit of the lord paramount. It is argued therefore that the royal fisc can only demand the confiscated property of a free man no portion of which belongs to a patron, just as if the free man were dead before his property was forfeited.

To give to the King the property which is in the fiefs or under the patronage of his nobles would be to deprive them of their feudal right, for the King cannot be vassal to his own vassal. Therefore it would seem impossible to confiscate to the Crown the real estate in the fiefs of its vassals, and that when the property of anyone is confiscated, be it for crime of læsa majestatis or anything else, the heritages held from fiefs belonging to nobles who are vassals of the King, return to them for want of the man. Alexander and Jan Fabre are both of this opinion.

But the Crown law sets forth certain cases where the fiefs and property held from the nobles, who are vassals of the King, are returnable to the Crown, through forfeiture or confiscation, such as the crime of rebellion, or ingratitude.

There are other matters which are usually embraced in feudal rights, which do not bind us in this Kingdom, because we are exempted by the Lombardian laws, a collection of which has been made by Gerardus Niger, and Aubertus de Orto, jurisconsults and citizens of Milan. Notwithstanding such exemption there is in many parts of this Kingdom a deprivation of fief, in spite of the customs of the Lombards. This relates to particular and odious cases in which the vassal is deprived of his fief, which is acquired by the lord paramount; and by reason of these customs the judges in trials for læsa majestatis and counterfeiting cannot adjudge the real estate of the condemned to the lords of the fiefs from whom they are immediately held. Therefore the confiscation of property for crimes of læsa majestatis and counterfeiting, following the disposition of the law, belong to the Crown.

The lord who demands that the confiscation of property held of him should inure to his profit, when such property is confiscated for the crimes of læsa majestatis or counterfeiting, demands too much; for these crimes are not against the lords of the fief, but against the State; consequently the confiscated property does not fall to them, but to the King, as reparation for the offence committed against his Majesty, to honour whom all the doctors of law limit the statutes of

confiscation to the lords of fiefs, when they are decreed for the crime of læsa majestatis.[2]

To the same effect is the ordinance of Philip le Bel in the year 1304, which is as follows: Si vero contingat quod in terris ipsorum, vel aliorum sujectorum nostrorum aliquæ fore facturæ nobis evenient, jure nostro regio infra annum et diem extra manum nostram ponemus, et hoc in manibus sufficientis hominis ad deseruiendum feudo, vel dominis feudorum, vel recompensationes sufficientes et rationabiles faciemus. By this ordinance it is evident that the confiscation of property held under nobles who are the vassals of the King can be adjudged directly to him, yet in a way to satisfy the just rights of the nobles. As to the Canon law, in c. fœlic. in c. excommunicamus, quoted by Faber, it does not include the confiscation of real estates, of which the Popes cannot any longer dispose; for they are held and possessed under the laws of an independent kingdom.

The further question is asked if the Crown, to whom the said confiscation has been awarded, should pay off the debts of the condemned man, and if it is bound to respect the mortgage, servitudes, or taxes due by the condemned upon the confiscated property. This is not difficult to answer. The royal fisc, coming into the confiscated property, is held to pay the debts. After a vassal has mortgaged his fief for debt, or imposed a pecuniary lien upon the same and by a crime merits confiscation of his property, such confiscation cannot prejudice the obligations and debts of the property. Creditors cannot lose their rights without their consent and the confiscated property acquired by the lords of the fiefs, are chargeable with the mortgage and bond debts imposed by the vassal. Choppin agrees with this opinion.

Nevertheless Tyraqueau opposes to this view the authority of several jurisconsults. He gives the opinion which was followed by the Court of Parliament of Paris in the case of Rouveraye, lord of Bressault, appealing from the presidial bench at Angers. The crime was rebellion, committed by him towards Messire Claude de Racape, lord of Meignanne and Menil and for murder and oppression of the people. He was condemned to be beheaded and the lands of Bressault to be confiscated to Racape as lord of Menil, from whom the lands of Bressault were held, satisfaction being first of all given to the creditors having claims upon the said lands of Bressault and other property of the condemned. The sentence was executed on the person of Bressault; when Racape, the lord of Meignanne, appealed from the remainder of the sentence to the Court of Parliament and thereto

[2] Specule and Guido Papa as above cited; also Boerius, quaest. 263, num. 7.

summoned the creditors. The Court, by the decree of September 7th, 1574, reversed the judgement of the inferior Court and ordered that Racape, lord of the fief to whom belonged the lands of Bressault, should be preferred to the creditors without their having any claim upon the land thus reunited to the dominant fief. The creditors were allowed a lien upon the other property of the condemned, but not upon this fief. The reason of this decree was that for the crime of rebellion and under the common law of Anjou, the subject loses his fief absolutely; which thus becomes reunited to that of his lord. This principle was also held by the Court in the decree given in contumacy against a defunct Admiral, September 13th, 1569, by which he was convicted of the crime of læsa majestatis in the first degree, and his feudal property which was held directly from the Crown of France, was reunited to the royal domain. His other fiefs and property moveable or immoveable were also confiscated to the King, but only after the parties interested in the property were first satisfied and recompensed. From this distinction it will be seen that under a decree of confiscation for the crime of læsa majestatis the reversion of a feudal estate takes place without burden of the debts of the condemned, while the other property sustains the burden of the debts.

It has been suggested that the penalties for coining false money and clipping good money should also apply to those who pass false money, for example by Bartole, Abas and Salicet, who think that this offence should be punished the same as forgery. In France the passers of false money are punished by death and often also by the confiscation of their property, and not without cause, for without passers of false money the forgers could not flourish by disposing of their coinage; as in thieving, the receivers of stolen goods are subject to a like penalty with the thief. This view, however, should only be applied to those who knowingly and fraudulently pass false money; for it should be borne in mind that it is often difficult even for experts, to distinguish good money from bad. In such matters the wisest are often deceived, for there is nothing that so much resembles another as two pieces of money of the same stamp. It will be a sufficient excuse for one who has passed false money if he alleges that he received it innocently from another; for the law is severe against him who has falsely coined, but not against the innocent person who has been deceived by others. On the other hand, he who receives bad money and passes it, knowing it to be bad, manifestly deserves the same punishment as the forger.

FINIS.

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GRIMAUDET'S LAW OF PAYMENT.

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BARON VON HUMBOLDT AND GRIMAUDET.

Baron Alexander Von Humboldt, concededly the foremost philosopher and savant of the 19th century wrote a book on Gold which has only recently been published in English. "The Fluctuations of Gold," scarcely conveys a full conception of its contents. The title of his first chapter, "The History and Mythology of Gold," would have been a better title for the whole work. It is a charming essay, full of acute observation, of genial wisdom, of historical reminiscence, and of the mythological fancies connected with the glittering metal which man has collected at the expense of so much hardship, blood and tears; abounding with practical suggestions and crowned with a prophecy.

The same volume contains Grimaudet's "Law of Payment" in English, a work of which so little is known, but from which so much can be learnt of the mysterious agency affected by money. Francois Grimaudet was born at Angers, in France, in the year 1520. In 1545 he became a member of the Provincial Assembly at Angers and in 1550 of the General Assembly at Orleans. In 1558 he became Solicitor for the Crown. The Discovery of America, which occured but a few years before his birth, afforded an occasion for the display of his remarkable talents. The Latin See had long laid claim to ecclesiastical and sovereign control over the Empire of the Cæsars. This included the whole of Europe, Northern Africa, Asia Minor, Persia and the Transcaucasian regions. But here was a new territory, not included in the Roman world, over which the ambitious See of Rome claimed equal jurisdiction. To this claim over America, Grimaudet, albeit a devout Catholic, interposed a decided objection. In 1560 he delivered a speech at Angers, in which he maintained "That the welfare of the State demanded the subjection of the ecclesiastical to the civil power, in whose hands all the functions of society were legally invested." The speech was a flame of fire. It asserted the civil power and denied the ecclesiastical. In a few days it flew all over France. Though condemned by the Sorbonne, and followed shortly afterwards by the Massacre of St. Bartholomew, its principles lived on, they led to the Huguenot emigration and the French secular dominion of Canada, and but for the weakness of Henry III., who was Grimaudet's patron, it might have advanced the inevitable Revolution by more than a century. But its author, though not otherwise molested, was cautioned to retire from public life; and the remainder of his days was passed in literary pursuits, of which the present work was the principal, though, not the only fruit. Under the guise of a law-book, devoted to the narrow subject of *Payments*, or, *In what kind of Money a debt may be lawfully paid*, the author establishes many of those principles of freedom which flow from the great thesis which he had announced at Angers. In the mind of Grimaudet, the State (that is to say the People,) was always supreme. Not only the ecclesiastical, but the military, the naval, the financial power, were the creation and should be the servants of the State. "The value of money depends upon the State, which alone has the right to coin it and regulate its value." * * * "The consent of the people is requisite in making ordinances which alter money." Here is a lesson for our money tinkerers of the present day, who would alter the law of money without consent of the people. The same principles which governed the issuance of money, governed also the founding of Colonies. America was no part of the Roman domain, the Pope had no authority over it, it belonged to the kings who could conquer it, and to the colonies who could maintain themselves against its savage occupants. Thus thought Grimaudet.

These two remarkable works, Humboldt on "Gold" and Grimaudet on the "Royal Prerogative," are complementary to each other and are fittingly united in one volume, which is elegantly printed and bound in cloth by the CAMBRIDGE ENCYCLOPEDIA CO., of New York, at the price of $1.50 net. Every library should have it, whether public or private.