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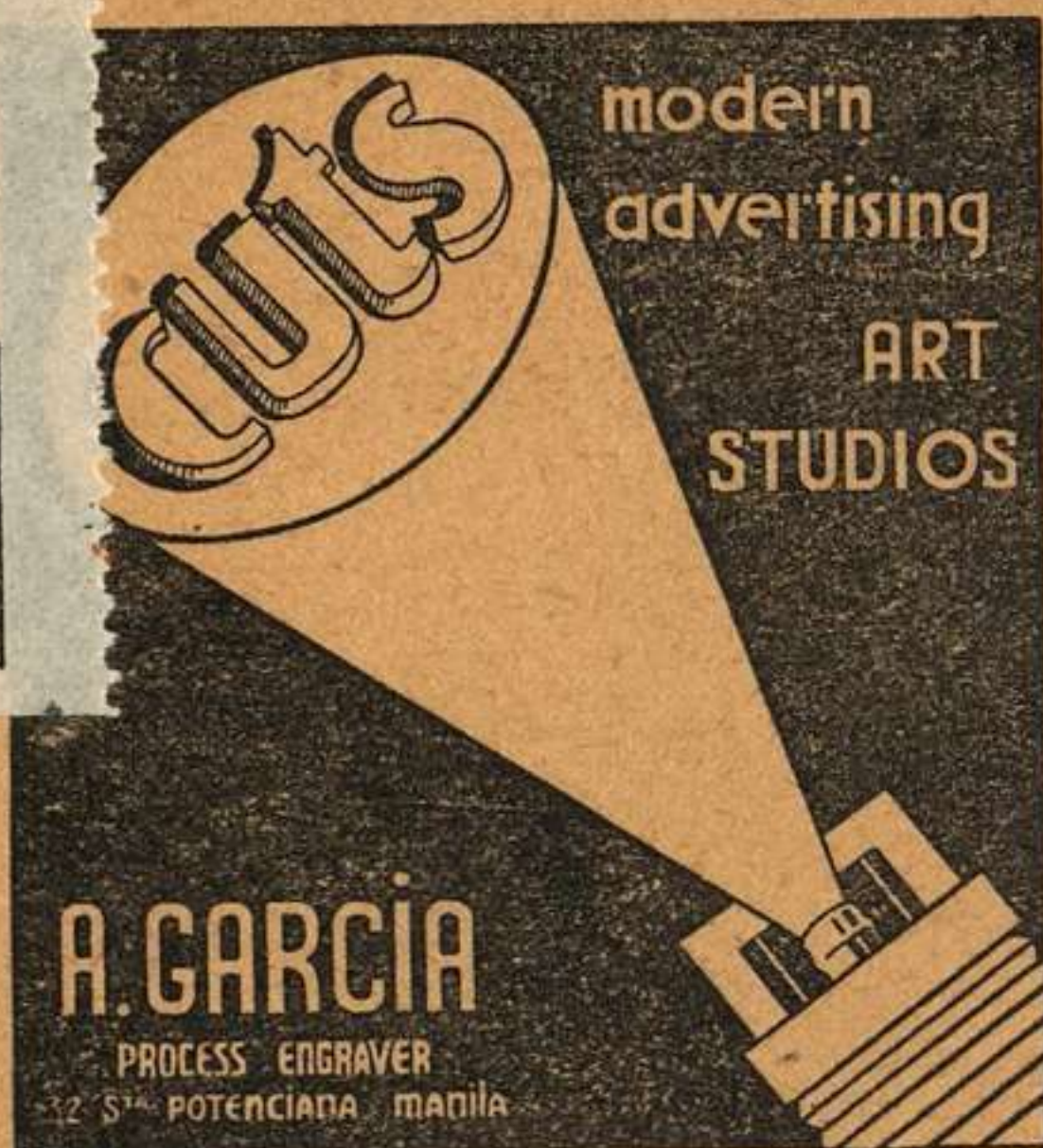
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UNITAS

DICIEMBRE, 1936

Brick Making: A Forgotten Craft

By *J. P. Bantug*

President, Philippine Numismatic and Antiquarian Society;
President, Balagtasiana (1930-1935)

The upper extremity of the Cagayan Valley which borders on the Pacific Ocean was explored by the intrepid Captain, D. Juan de Salcedo, grandson of the great Adelantado, D. Miguel Lopez de Legaspi, as early as as 1571, when he undertook the conquest of the Ilocos and coasted along the northern part of Luzon. About twenty-one years later, the son of the then governor-general, Don Luis Perez de Dasmariñas, made a similar trip in the opposite direction for the purpose of locating safe harbors, although eleven years previously the region was visited by a Spanish flotilla commanded by D. Juan Pablo Carreon, who made a punitive expedition against the Japanese that infested those waters. When they had succeeded in driving out the enemy, they sailed up stream of the great Cagayan River, and founded the first settlements, the town of Lal-lo, among them, the first seat of the see of the bishopric of Nueva Segovia. The Dominicans had been there since 1581, as that territory had been apportioned to them for their missionary endeavors. From Lal-lo as the center of activities, they carried their civilizing influences, founding parishes and erecting substantial buildings. On account of the dearth of adobe stones for building purposes, they had adopted bricks in their various undertakings, setting up convents, chapels and churches, build-

ing forts and watch towers in different places. The town of Tuguegarao, now the seat of a bishopric, became a large center for the manufacture of bricks that were transported down and up-stream on watercraft, as the water courses in primitive times were the principal means of communication from one place to another. In the brief space of fifty years the missionaries littered the Valley with enduring monuments which rear their tops above the surrounding country, mute witnesses to their evangelic zeal. The churches were so large that they have been turned easily into cathedrals (viz.: Lal-lo and Tuguegarao) while the convents were in themselves good-sized palaces. In the vicinity of Camalanyugan, along kilometer 559, which was one of the first towns in the Valley founded by the missionary friars, one can still see along the river bank huge deposits of shells from which they obtained their lime for their constructions and which today serve as excellent road surfacing. Clay of the right kind could be found in many places so that good bricks could be made without going into the trouble of transporting the finished products for long distances which at that time was a problem in itself.

It is interesting to note that it was in the Cagayan Valley that brick-making had reached a high state of artistic development as may still be seen in the decorations on churches and belfries, Stations of the Cross, town-halls, and other monuments today. Classical columns were reproduced and capitels of the Doric order were predominated as this style was best adapted to moulded designs. Friezes were traced and cronics put in place, making an ensemble of a most pleasing kind as may still be seen in Bagabag, Cabagan, Tumawini, San Pablo, Tuguegarao, and elsewhere. The Cathedral at Tuguegarao which has begun in 1761 and completed eight years later shows a variety of brick ornaments in which may be recognized the Papal arms as well as the Dominican scutcheon; the instruments of Christ's Passion are there; figures of animals, birds and plants may also be seen and inscriptions in Latin characters tell the story of the different stages of construction of the noble edifice. The Tuguegarao belfry, one of the most solid and artistic of the kind I have ever seen, is made up of seven tiers and the stairs which wind up spirally has a singular distinction in that each step is made up of a whole block of brick. The Stations of the Cross on the way side, distributed in different parts of the

town, tell of an age of faith which modern materialism has not quite banished. The church of San Pablo while of noble proportions, has been allowed to decay and only the tower and part of the facade still stand, but the most artistic specimen of this architecture that still remains intact, showing the solidity of its construction and the quality of the materials that had gone into it, is the church at Tumawini, consisting of one nave, and a detached tower of graceful design. The facade together with the fencing of the yard is said to stimulate an old galleon with its castle, and, uncared for and unpainted as it is, leaves a pleasing image to the beholder. Here we find classical columns reproduced, wreathes and festoons decorate the spaces between them, while flanking the central gate we find images of saints, coats-of-arms of the different religious orders, like the Dominicans and the Franciscans, while that of Spain in the zenith of her imperial power was evident in several places. Floral motifs of the conventional types have been employed while inscriptions regarding the progress of the construction may be seen here and there.

The belfry, the foot of the cross in the churchyard and the yard fence at Bagabag show a multitude of designs, while the old bridges and culverts along the provincial road show the lasting quality of the brick as a building material, revealing incidentally the path of a great Dominican Missionary and excellent road builder, P. Juan Villaverde, in whose honor the Insular Government gave the name of Villaverde Trail to the road leading from Aritao, Nueva Vizcaya, to S. Nicolas, Pangasinan, which he traced and opened to travel during the last quarter of the XIX century. The old drainage canals in Bayombong and Aritao are still in good state of preservation. Wherever brick was used for pavement it has withstood the wear of centuries. The remaining government buildings and private residences of the late XVII and early XVIII centuries show the classic columns and the graceful Roman arches that had weathered repeated storms and withstood numerous quakes.

Probably, in no other region of the Philippines has brick-making reached a high stage of development as in the Cagayan Valley, for the kilns at Makati and Mandaluyong in the province of Rizal, from which our local supply has come for the past four-hundred years had not turned out such lasting and artistic

products. True, that in Laguna a revival of the industry was attempted, but like many of our enterprises, it came to naught as the necessary encouragement was not forthcoming. May we not add a kind word to the pioneer missionaries who, while uplifting the native spiritually, had not neglected their material needs, even fighting for their rights as have been preserved to us in the pages of the work of that great Missionary of the Cagayan Valley, P. Juan Malumbres. So highly was his efforts for the welfare of the people of the Valley regarded that the Municipal Council of Aparri, in grateful recognition of a life-long devotion, declared him, some years ago, an adopted son, the highest gift that was in their hands to bestow upon a foreigner.

It is regrettable that an industry so profitable which would have continued to keep many hands employed and supplied materials for better buildings in our communities has been abandoned to its fate so that today the kilns are in ruins and the craft forgotten.



LAW

Vitoria and War

By Rev. Honorio Muñoz, O. P., S. T. L.

V.—THE JUST CAUSE

The second condition which must exist to justify the waging of war is legitimate or just cause. That is to say that the reason for the declaration of war, must be very grave. For as it is the severest penalty that can be inflicted on a nation it is only just when waged for a very grave cause. And since "just war is merely the application or execution of justice", as A. Tostado affirms, there must have been antecedently some grave violation of justice necessitating appeal to war as a remedy, (67). Punishment must be adapted to the fault committed; and war being the extreme punishment necessitates that grave injury shall have preceded it (68). War is a legal punishment, that is to say an act of jurisdiction, and thus cannot be exercised except against the juridical subjects of him who wages it. It can never be rightly undertaken against those who are exempt from the jurisdiction of its author. One nation falls under the jurisdiction of another through the committal of an injustice towards it and is thereby liable to be judged by the injured nation, (69).

What then can be held as "a just cause" for the declaration of war by one nation against another? Is infidelity, or heresy, or divergence of religion a legitimate cause in this sense?

INFIDELITY CAUSE OF WAR?

A goodly number of canonists from the thirteenth century to the sixteenth have seriously maintained that it is lawful to enter into war against infidels, idolaters, etc. etc. Henry of

(67) Alphonsus Tostado, Works in 24 vols, Venice 1596. He says: "Bellum justum est justitiae executio"

(68) Vazquez says that war is an act of **punitive justice** which cannot be exercised unless some grave fault has preceded. (**Comment. in Summa D.Th., Disput. 63, cap. III, 12**).

(69) "Unde necesse est ut intercedat eorum **culpa** ratione cujus efficiantur subditi: alioquin quo titulo essent digni poena aut subessent alienae jurisdictioni?" (Suarez, **De bello, Sect. III. 1**).

Susa, bishop of Ostia generally called *Hostiensis* was a firm upholder of this view. He based his opinion on the theory that the coming of Christ had deprived the infidels of the right to power and that *dominium* had become transferred to the followers of Christ. Richard Fitzralph, archbishop of Armagh, and John Wycliffe advanced that the right of property depended directly upon God and that the individual lost this right whenever he was guilty of mortal sin. I. Lopus maintains that a war of Christians on infidels is a just war. A. de Castro (70) the "*Doctissimus virus*" as D. Covarrubias (71) calls him, upheld the lawfulness of war against those guilty of sins of idolatry. The argument he makes use of is taken from the doings of the Israelites in order to avenge the sins committed against God by the idolatrous nations (72). And, indeed, the sixteenth century Imperialists favoured this view out of regard for the Emperor. The most distinguished advocate of this theory was Ginés de Sepúlveda, historiographer of Charles V, (73).

This question was of transcending importance at the period of the discovery of the New World. For, were the Spanish sovereigns rightfully entitled to assume dominion over the new territories? Had they the right to wage war for the possession of the new provinces on the ground that the original owners were not really their masters, by reason of their being pagans? This was an important matter of debate for the Spanish Empire and had to be resolved by the learned counsellors of the nation, theologians and jurists. When it was laid before Vitoria he gave a weighty and balanced reply in the "*De Yndis Relectio prior et posterior.*" Vitoria was the voice of the nation, the noble conscience of Spain. The opinion he there expressed was later to be confirmed by subsequent theologians. "*Causa justi belli non est diversitas religionis,*" (74). This, adds Vitoria, is the opinion of St. Thomas and of other doctors, and I know of none who holds the contrary view.

Religion, in effect, does not add to or diminish human personality. Men who belong to the various divergent beliefs or creeds retain their own human personality in the same measure as every human creature. The rights and properties of the human individual are inherent in each one and inseparable from his nature. The right to live is possessed by each individual nor can it be taken from him unless through some crime he has committed deserving the death-penalty.

(70) Alphonsus de Castro "*De Justa hereticorum punitione Libri Tres, De potestate legis poenalis libri duo*", Paris, 1571.

(71) Didacus de Covarrubias, *Opera, in Relectione supra regulam Peccatum*, part. 88 No. 10.

(72) I regret extremely not to be able to refer to I. Esteve's work "*De bello sacro religionis causa suscepto*" (1603), as there is no copy of it even in the Bodleian, Oxford.

(73) "*Apologia pro libro De justis belli causis apud Indos,*" sive "*Socrates Secundus*".

(74) *DE JURE BELLI (sive de Indis relectio posterior)* no. 10.

To declare war on a nation solely because of its paganism or idolatry, or serious crimes can never be lawful because it does not through these things fall under another human jurisdiction. Those who maintained that the Sovereign Pontiff was the Supreme Ruler of the world held the conviction that to declare war on such nations was among his attributes (75). And in the same manner those who recognised in the Emperor the Lord of the whole world *ex concessione Papae* gave him a like prerogative, (76). For the commentators who held such opinions it seemed quite legitimate that either or both authorities should invade any heathen territory on the ground that these nations had no right to the lands in their possession for they are outside the Church and in a state of mortal sin. Therefore all their goods could be seized as being *res nullius*. But such argumentation was entirely unwarranted. Mortal sin does not take away the *dominium civile* nor the *dominium rerum*, the rights of citizenship or of property (77). Moreover the statement that the Emperor or the Pope is Lord of the world is, as we have seen, nothing but a fancy *vanum commentum*, (78).

Infidelity or heathendom cannot be held as a legitimate

(75) "De hac materia an Summus Pontifex sit Dominus temporalis totius orbis videte relectionem magistri de Vitoria in Summa. Respondeo et dico primo: Summus Pontifex non est temporalis dominus totius orbis. Ita etiam Turrecremata, Durandus, Cajetanus, etc." (Ex MSS. Vitoriae, Apud B. De Heredia, opus citatum supra.)

(76) "Dico secundo, dato quod Papa haberet potestatem totalem in toto orbe, non posset transferre in regem, quia illa est annexa officio papali. Unde hac ratione rex non habet potestatem in barbaros ex concessione Papae." (id. ibid.) That the Emperor was the master or Lord of the world is thus refuted by Vitoria." Argument: Our Emperor is Lord of the World." Imperator noster est dominus orbis... Respondetur, commentum est et vanum dicere imperator est dominus orbis. Probatur, quia vel esset dominus, (a) jure naturali, (b) jure divino, vel (c) jure a positivo.

(a) Non de jure naturali, quia de jure naturali omnes homines sunt liberi, exceptis his quae excipimus de filiis et uxoribus... Item etiam prelatio et dominium introducta sunt jure humano.

(b) Nec jure divino: primo quia non constat de loco; secundo populus judaeorum aliquando non fuit alienae ditionis nec ipse populus erat dominus mundi, et etiam quia isti barbari numquam fuerunt cogniti in mundo, ergo numquam imperator cognovit se esse dominus illorum.

(c) Nec jure humano, quia hoc fuit per legem et hanc non potest ferre in non suos, nec etiam eorum voluntaria electione...

Dico ultimo, dato quod imperator esset imperator totius orbis, non posset occupare terras barbarorum, et constituere novos principes et deponere antiquos, nec imponere vectigalia, quia etiam secundum adversarios qui dicunt illum esse dominum mundi, non est dominus secundum proprietatem, sed secundum jurisdictionem, sicut isto modo imperator est dominus Gallorum et tamen non potest aliquid istorum in Gallia" (Ex MSS. Vitoriae. Apud B. de Heredia.)

(77) "Peccatum mortale non impedit dominium civile et rerum dominium" (Vitoria).

(78) "Unde quod quidam aiunt supremos reges habere et potestatem ad vindicandas injurias totius orbis, est omnino falsum, et confundit omnem ordinem, et destructionem et jurisdictionem: talis enim potestas neque a Deo data est, neque ex ratione colligitur" (Suarez, De bello. Sect. IV, 3).

cause for declaring war on any nation. Faith is not to be imposed by armed force and besides if the object of desire is the conversion of the heathen how can war help its accomplishment? On the contrary it composes their destruction instead of hastening their conversion to the faith. It must be noted here that we are taking *infidelity* in its literal negative sense, merely as the absence or lack of faith; for if other delicts are included they may possibly be found to be deserving of punishment.

The state of *negative* infidelity does not confer any right on the christian authority to rule over the infidels. No one obtains jurisdiction over infidel nations from the mere fact of their condition of infidels. They are reputed outside the fold and to them may be applied the Pauline text: "Quid enim mihi de iis qui foris sunt iudicare?" Neither the Sovereign Pontiff nor any catholic nation can derive from religion the control over those outside the Church, for the rule of legitimate authority is confined to its own subjects and neither of the powers above mentioned possesses authority over the infidels who are not actually their subjects. And for that same reason infidel nations may not be penalised either for sins of *idolatry* (79), or for sins against the natural law (80), christians being *in no way their judges* (81).

It would seem perhaps that serious offenses against natural law should be punished by earthly tribunals since the providence of God condemns such ominous crimes, (82). D, de

(79) "Idolatria non est causa justi belli. Nam justitia hujus belli vel est propterea quod ipsum crimen idolatriae privet gentes ipsas dominio rerum et provinciarum, et haec ratio falsa est; vel ideo quia liceat offensam vel **injuriam** divinae majestati illatam hoc idolorum cultu bello vindicare: et id non sufficit adversus eos qui foris sunt, hoc etenim Deus puniret secundum Hieronimum...

Ad defensionem autem non pertinet hoc bellum: cum tantum tractemus an ob ipsum idolorum cultum liceat indicere bellum his qui fidelibus nullam injuriam fecere: et ideo non agitur in hoc bello de defensione. Quod si dixeris esse bellum punitivum: profecto id non pertinet ad eos qui nullam ita has gentes punitiois ratione jurisdictionem exigit etiam in idolatras: quia hoc crimen monime christianis submitit eum qui foris sit, quod constat ex ipso divi Pauli testimonio manifeste probante non esse a nobis iudicandum eum qui foris est, tametsi is idolis serviat". (D. Covarrubias a Leiva Tolentani, **Opera Omnia**. 1592 **Recolectio de Peccato**, c. 10, no. 5.

(80) "Nemo potest indicere bellum infidelibus propter peccata contra naturam: neque Papa vel Imperator jubere possunt. (**id. Ibid**).

(81) "Christiani illius criminis (idolatriae) vindicandi pretextu nullum infidelibus prossunt indicere bellum, neque illos suis possessionibus ac juribus evpoliare... Quod autem nos iudices eorum simus nullo, ut dictum est, jure demonstrari potest...

Ergo jure naturali aut gentium id non possumus. Lex vero evangelica non fecit nos iudices, ut monstratum est, nisi eorum qui intus in Ecclesia sunt" ("D. de Soto, **MSS. in Bibl. Vatic.** "An liceat civitates infidelium seu gentium expugnare ob idolatriam." **Apud B. de Heredia. sup. cit.**)

(82) It is a great pity that no copy of D. de Soto's book "**De ratione promulgandi Evangelii**" has survived. We should be able to adduce his sound arguments in favour of this point.

Soto gives a very clear and convincing reply to this difficulty. By the law of nature, he says, which is derived from the eternal law of God, nations have been divided and different princes and magistrates allotted to them. Until these nations are converted to christianity they are therefore under their own rulers to whom belongs the duty of punishing crimes against the natural law. If these rulers neglect their duty they will not be excused before the divine tribunal. For God, as St. Paul says, will judge those who are outside the fold. By the command of Christ it only pertains to his followers to teach all nations the truth of the gospel, showing them the gravity of their evil deeds. When they will have voluntarily subjected themselves to the yoke of Christ then they become amenable to His laws and can be made to suffer penalties for breaking these laws; and even if the civil authority demands if they can be made to endure the extreme penalty (83).

A. de Castro (84) forcibly contended that a Catholic ruler may avenge the affront to Almighty God caused by pagan idolatry. He based this opinion on the text of Deut. 32. "Quando imperatur filus Israel ut subverterent gentes quate does falsos coluerunt" (85), (86). But there can be no doubt that such avenging power was not accorded to man in the providence of God; it was unneeded and as Suarez says "not proper to mankind."

There are, however, some occasions when it might be considered lawful for a christian ruler to invade a pagan country. For instance, positive opposition to the propagation of the faith, violent injustice to the faithful or to the faith, categoric refusal to allow conversions appear to furnish a just cause. Some authors declare it to be a just cause if innocent people are ruthlessly oppressed or slain wantonly for insufficient reason (87) In these and other similar cases it is held that it would be lawful to invade a pagan country. The contention is based on those causes which legitimate invasion. (88) First is the law of charity in relation to oneself and one's neighbour, and secondly the law of vindicative justice. Both pre suppose the grave injury which has preceded the invasion.

The Church possesses the right to teach all nations, to

(83) D. de Soto. *Apud MSS.* B. de Heredia.

(84) A. de Castro. "*De justia hereticorum punitione, Lib. 2. c. 14.*"

(85) T. de Solorzano Pereira calls these wars for religious motives "pious and laudable." (*Disputation de Iudiarum jure.* 2 vols. 1629-39.)

(86) To Martin de Alpizcueta, war against infidels cannot be considered other than righteous. (M. de Alpizcueta, *seu Navarus "Consiliorum seu Responsorium in quinque libros juxta numeros et titulos Decretalium distributorum, tomi duo"* 1573).

(87) Russia, in actuality, would furnish an interesting argument....

(88) "Tituli quibus licet vim aliis inferre: titulus charitatis, et justitiae vindicativae" (Valentia, *Comment. in Summ. De Fide, Disp. I, q. 10.*)

spread the christian faith throughout the whole world. She has received this right from Christ. She is under the obligation of making known the gospel to every human creature and no one may oppose her in this regard. No prince or nation can legitimately forbid the Church to teach her doctrine to all men. Prohibition to do this involves grave injustice towards her. "Impedire legem Christi, says Suarez, est revera *gravis injuria* et damnum; prohibere vero aliam legem nulla est" (89). The gospel or law of Christ is to be the portion of all, it embraces all nations, all tongues and no one is exempt from the duty of knowing it. If this divine right of the Church is prevented from the exercise of the right of diffusing her doctrines among all nations, grave injury is done to her, which injury becomes a sufficient reason for the lawful declaration of war. Christian princes then can wage war justly on those nations which refuse to allow the preaching of the gospel. "Ex eo quod aut impediunt fidei praedicationem (90), aut aliqua injuria fidem aut fideles affecerint" (91).

The Church being a perfect society is justly entitled to avenge any injury she is made to suffer whether in the person of her sovereign Pontiff, his representatives or any member of her fold. In the last resort this act of vindication may be entrusted to arms and therefore open war. The same holds true in the case of a christian nation whose subjects have been outraged. There are four occasions, writes Covarrubias, in which it is lawful to declare war on an infidel nation: (a) when infidels occupy and retain provinces previously under the jurisdiction and dominion of christian princes (Torquemada, Cajetan, St. Thomas); (b) when infidels outrage and persecute christians (St. Thomas 2-2, 9, 19, a 8); (c) when infidel subjects refuse obedience to the laws of the empire (2-2, 9, 66, a 8); (d) when infidels obstruct the progress of the faith and the free proclamation of the gospel even in their own dominions by blasphemies and evil counsels (2-2, 9, 10 a), (92).

In general it may be said that war is lawful whenever that which is rightly due is positively refused, "id quod jure debitum sit." And in this sense that line of Lucanus rings true: "Arma tenenti omnia dat qui justa negat."

However one point remains still obscure. Whether oppression of the guiltless entitles other nations to wage war on the

(89) Suarez, *De bello*, Sect. V, in 7.

(90) J. de Acosta "*De promulgatione Evangelii apud barbaros*" 1589 Idem tenet N. Pimenta (1786), in *Comment. Supra 2am-2ae, parte quinta. De infidelitate et haeresi.* (Hoc vidi in MSS, auctoris in *Biblioteca Bodleiana* asservatis. fols. 227-263 Cfr. MSS. Bodl. 644.)

(91) Valentia. *Disp. I, Q.X. Da Infidelitate, Puncto VII.*

(92) D. Covarrubias. *Relect. de Peccato, part 88. vol. 8. 10, De bello adversus infideles.*

oppressor (93). Suarez seems to hold the view that it is lawful in such circumstances to wage war for the liberation of the innocent oppressed (94). Indeed it appears to him so self-evident that he takes it for granted and does not even trouble to question it. In the various passages where he refers to this subject he assumes it as a matter of course. F. Arias seems also to favour this aspect when he says "Injuriam ab amico non repellens injuriantem fovere videtur" (95). But here also we come upon diversity of opinion. D. de Soto makes of it merely an objection which he refutes by declaring that this presumed right to declare war upon an oppressor is invented and purely imaginary; because among those who are in the habit of slaying fellow human beings this is not reckoned as a crime but as the chance of war, as among civilised nations, 96). This argument we shall see developed later and formulated in the nineteenth century as "non-intervention" or the right of neutrality, proclaimed first by Kant in Germany, Monroe in America, Palmerston in England and adopted by the continental liberals especially in Italy.

Intervention is justifiable when it is demanded by the legitimate authority; or where, though needed by the State, the

(93) Some theologians maintain that when pernicious laws imperil the whole nation's faith the subjects are thereby released from the duty of obedience to the ruler. Moreover they may then go to extreme lengths to overthrow their ruler even calling in the help of other nations.

"Si forte aliqua respublica coleret unum Deum, principis autem nequitia ad idolatriam inclinaret, tunc enim licet movere bellum contra principem. Quod verum est si per vim principis ipse cogeret subditos ad idolatriam; secus autem non esset sufficiens causa belli nisi tota respublica peteret auxilium contra suum principem, quia ubi coactio non intervenit, locum non habet defensio." (Suarez, **sect. V, 3.**)

The liberation of a nation from the tyranny of a ruler is held by Bl. T. More as a just cause for war.

(94) "Christianus princeps non potest indicere bellum nisi vel ratione injuriæ vel ob defensionem innocentium." (Suarez, **De bello, sect. V. no 6.**)

(95) Francisco Arias Valderas, "**De bello et ejus justitia.**"

(96) This argument is thoroughly treated by Vitoria in his commentaries on the 2-2, q. 10, a 8: Whether infidels ought to be compelled to observe the natural law that is common to all? Answer: There are some sins against the natural law which harm one's neighbour as for instance cannibalism and the killing of old people as it occur **in terra continenti**; and since all are called upon to defend their neighbour even with danger to the life of the aggressor it is far more in accordance with right reason that a christian prince should force these cannibals to refrain and for this reason only can the emperor resort to compulsion of the Indians...

In the third place I avert that christians may not compel the pagans to a strict observance of the natural law unless the peace and welfare of the christian policy demands it, or unless it is opposed to charity to one's neighbour as I have shown previously. For the mere fact that they do not observe the natural law does not entitle christians to compel them thereto, for if it did then it would be lawful for the christian prince to compel them to relinquish their idols and usages and in consequence they would be left without law. But this is not right. Ergo..." (Vitoria, **MSS apud B. de Heredia, App. X.**)

legitimate authority is precluded from soliciting it; or where there has come to exist no authority but social chaos, likewise evident that the object of the intervention should be the protection of justice and that it should be exercised with discrimination.

To arrive at a conclusion as to whether paganism affords a just cause for war we must consider what could be the effect arising from hostilities in this connection; certainly a trenchant consideration.

"Ideo enim bellamus ut sine injuria in pace vivamus" declares St. Augustine. The end in view in waging war—as we shall see later—is peace. Peace must be the aim to be attained in all wars. If the state of infidelity were to be a just cause of war the troubles which would arise in consequence all the world over, would be many and grievous. For, as Valentia argues: since all those who follow a particular sect or religion are persuaded of the darkness and error of those who do not agree with them, all would find a just cause for war against those who differed from them and the whole world would be involved in permanent conflict. (97)

We must therefore draw this conclusion that neither the state of infidelity nor difference of religion *as such*, can ever afford a just motive for one nation to war on another. And this is in agreement with the general opinion of theologians especially of those who came after Vitoria,

It is strange however to note that these authors universally are of opinion that war against the Saracens is a just war. And what is more when they are treating of the infidel state which affords no title for war they purposely and invariably except the Saracens. The presumable reason is that this race had ever been a vehement enemy of christianity and civilization. And its continued existence was considered a redoubtable menace to the Church and all christian peoples.

IMPERIAL EXPANSION A CAUSE OF WAR?

We have seen therefore, that difference of religion may not be taken as a just cause of war. The next point we have to consider is whether the extension of the Empire—*amplificatio imperii*—is or is not a just cause of war.

It was an error of the gentiles, declares Suarez to assume that right was decided by strength of arms (98). And the error which Suarez attributes to the gentiles of old has in real-

(97) Valentia, *Disp. I, Q. X., De Infidelitate, Punct. VII.*

(98) The first to introduce this idea was Ninus.

ity gone down through the ages and even now carries weight with many a philosopher who postulates as an unattackable principle the right of the stronger. Indeed, if Machiavelli had failed to revive this theory we could rely upon the twentieth century statesmen as able exponents of the Italian's theory. Obviously there is no need to dwell upon its refutation.

Already St. Augustine had rejected from among the causes of a just war, what he terms the "libido dominandi", (99). For if that were a lawful motive there can be no doubt that the whole world would be incessantly plunged into wars. This is no manifest that Vitoria wastes no argument on an attempt to prove it: it does not need proof (100). He only takes into consideration the aim of all wars—peace. If it is unlawful to slay the innocent even in a just war; in the case in point, both parties would be innocent and therefore neither could slay the other, which is a manifest absurdity. As a corollary we may add that no rights accrue from unjust wars. Conquest in such a case gives no right over the conquered territory (101). The reason is obvious; for if the war in which a nation is subdued is unjust the victors gain no right over the territory they have conquered. The cause is vitiated *ab initio*, and all its consequences are under the same evil ban. A war undertaken merely to extend the boundaries of a nation without any concern for the rights of the country attacked is totally unjustifiable nor can the victors claim any right over the invaded nation. And the invaders are under obligation to restore anything taken or destroyed in such a war (102). We are implying, of course, that the sole motive of the war is aggrandisement of the invaders' territory. For if it is a question of trying to recover lands or possessions of which the invader has been unjustly deprived he may undoubtedly be justified in his invasion provided that other conditions have been observed previous to the onslaught. But this is another aspect of the ques-

(99) St. Augustin calls such wars "grande latrocinium", "Inferre autem bellum finitimis et in cetera inde procedere ac populos sibi non molestos sola regni cupiditate conterere et subdere, quid aliud quam grande latrocinium nominandum sit? (De Civitate Dei, IV, 4 and 6.)

(100) "Non est justa causa belli amplificatio imperii. Haec notior est quam ut probatione indigeat." (Vitoria. De Jure belli, 11.)

(101) S. Isidore of Seville tells us of Ninus as being the first to introduce such wars. Ninus was king of the Asirians. He not being satisfied with the limits of his own territory and regardless of the bonds which regulate all human society put himself at the head of large armies to lay waste his neighbours territories, slay or enslave many free peoples, and impose his tyrannical yoke on the whole of Asia even to the confines of Lybia. Thereafter he endeavoured to embroil the whole world in fratricidal strife. (S. Isidore Hispalensis, Etymolog. Lib. XVIII, I, de bellis.)

(102). In the "Utopia" justification is claimed for all wars undertaken against savage nations who will not allow themselves to be civilized. Similarly justification is pleaded for declaration of war against a nation possessing an immense incultivated territory which it will not allow other people to cultivate for their own maintenance as is consistent with the law of nature.

tion which we do not propose to discuss just now, as it enters into the argument of what authors call "Reprisals".

THE RULER'S GLORY A CAUSE OF WAR?

The extension or aggrandisement of the Empire is not therefore a just cause of war. But can a war be just if engaged in merely for some personal interest of the prince, his glory etc? The answer is no way doubtful. "Non est justa causa belli aut gloria propria aut aliud commodum principis" (103).

The duty of the Prince or Ruler is to look after the welfare of his subjects; to protect them from both internal and external enemies; to promote their happiness.

Plunging the country into war for the personal interests of the Prince would imply a subversion of right order; for it would mean using the authority with which he is invested, for his own personal advantage in detriment to the interests of the nation; and whereas it is incumbent upon him to direct all his efforts to the common good of the country, he avails himself of his high position and employs his powers for his own selfish ends.

In a State where hand in hand liberty law and order are expected to prevail the authority is bound to be faithful guardian of the subjects. Their welfare, interests, honest ambitions, legitimate aspirations must be the constant preoccupation of the ruler. Should he act otherwise, should he pay no attention to the claims and necessities of the citizens he would betray his trust and would commit a grave injustice towards his country. An authority acting in this evil manner would be guilty of abuse of his position considering his own individual wellbeing in preference to the happiness of his subjects; such an authority indeed cannot be styled King or prince but more properly tyrant, for the difference between a prince and a tyrant consists in this that whereas the former directs everything—laws, customs, ordinances, etc to the common weal the latter subverts these attributes to his own selfish interests and to the public detriment (104).

Moreover the authority which the subjects have vested in the person directing their destinies is intended to be used for the welfare of these same subjects. Hence all laws rightly promulgated by the ruler must be "*ad bonum commune civium*" and therefore a decree constituting a state of war may not have for

(103) Vitoria, *De Jure belli*, 12.

(104) Aristot. *IV Polit.* 10.

motive the individual interest of the ruler. To subvert the citizens to the personal caprice of the prince is to enslave them; just as slaves were subject to the whims of their masters so also citizens ministering to the gratification of their ruler are actually in bondage (105), (106). A war waged for a mere princely caprice would be unjust and can have, in consequence, no lieu on the subjects. We shall refer to this point later.

It may be well to connote here how St. Augustine deals with the Roman theory of a just war visualising the glory of the Prince.

Roman statesmen and juriconsults declared a war to be just if it was waged according to the Roman usage or military code. Their notion of equity, agreeing with the conception of Plato, the Stoics, etc., bound the subjects to be good and loyal citizens; that is they were to obey all the commands of the prince and to be always ready to sacrifice themselves for him whatever were his behests. St. Augustine transforms this *social equity* of the citizen into true justice: before attaining the state of citizenship men are in the order of human persons and the justice of a human person precedes the equity of the citizen. For example, if as citizens they are bound by all wars waged by the State even though they be inspired by ambition, true justice forbids them to co-operate as men; and they belong to mankind before their conditions of citizenship. In this way St. Augustine condemns *unnecessary* wars that lack the foundation of just cause.

It does not follow from this that an injury to the ruler of the State may go unpunished. By no means; we are referring only to those wars undertaken solely for the private benefit of the ruler or for his personal interest, entailing thereby the ruthless sacrifice of the best interests of the nation.

But even where the nation is in agreement as to the usefulness of a war undertaken solely for the glorification of such war. Something more is required. To invade a country without valid reason is a consummate injustice to the invaded.

THE ONLY CAUSE OF WAR

Let us consider *the* just cause of war. And here we have Vitoria's clear statement: "Unica est et sola causa justa inferendi bellum injuria accepta." The proposition substantially

(105) **Aristot. III. Polit. 3-4.**

(106) "Unde quod principes abutantur civibus cogendo eos militare, et pecuniam in bellum conferre non pro publico bono, sed pro privato suo comodo, est cives servos facere". (**Vitoria**).

has little of novelty. St. Augustine in his definition of war had already formulated it, though not so succinctly. Similarly St. Thomas had expressed the like view though not in identical terms; and the same with other theologians and doctors.

The arguments in support of this proposition are all based on the principle that the avenging of injury or the repelling of invasion must underlie the declaration of an offensive war. Where there has been neither fault nor injury there can be nothing to avenge, for penalty or punishment presupposes infringement of the divine, the natural or the positive law. And if the ruler cannot rightly punish his own subjects unless they are guilty of some injury or injustice to others, in like manner he cannot exercise punitive powers towards strangers unless previous fault or injury has given occasion for such display. It must ever be born in mind that only some hurt or molestation of his own subjects will give the ruler jurisdiction over alien delinquents either by reason of the place (*ratione loci*) or by reason of the grievance (*ratione delicti*).

Naturally no authority may punish those over whom he has no right. In consequence it is never permissible to punish those who do no harm even if they are aliens, for the natural law forbids taking up the sword against the innocent. Hence before use can be made of the punitive power it is essential that those who are to be punished should have *deserved* it by some specific fault (107). For it is the fault itself which places the delinquents within the jurisdiction of the aggrieved party and it is in virtue of that jurisdiction that the aggrieved may proceed even to the declaration of war. The punishment of evil-doers is in effect an act of vindicative justice, the chief factor in the power of jurisdiction (108). If the injury is, for instance, a theft it does not suffice that the thing stolen be restored, the chief must also suffer *due punishment—poena debita* (109).

Where the difficulty lies is in the right assessment of this *poena debita*. For, the penalty must be in proportion to the fault. Obviously not every injury sustained by a nation can be a just cause for war (110). It is necessary that the injury be grave tantamount so to speak to the evils of war (111); for the penalty must be commensurated with the fault. And to punish a slight injury or avenge a mild grievance with the drastic issue of war is not permissible. It must be a serious injury leaving no other remedial alternative but war.

(107) "Causa justa ut scilicet illi qui impugnantur propter aliquam culpam impugnationem mereantur." (St. Thomas, 2-2. De bello, Q. 40, a 1).

(108) Suarez, De bello, sect. II, n 2.

(109) "In injuria duo posse adverti: ut restituatur ablata offenso: et ut puniatur poena debita". (Suarez, *ibid.*)

(110) "Non quaelibet et quantavis injuria sufficit ad bellum inferendum" (Vitoria. 14.)

(111) Suarez, De bello, sect. 8 II, 2.

What, then, is this serious injury which may justify war? Suarez enumerates three occurrences which would constitute severally a justification of war. They are: (a) if the ruler sequestrates the property of another nation and wholly refuses restitution; (b) if without reasonable cause he denies the common law of nations, as for instance public traffic—*transitum viarum*—trade with other nations, and so forth (112); (c) if he causes grave damage to reputation or honour (113).

Anyone, then, of these motives would furnish a just cause for war. The three are not to be taken conjointly but severally. He adds furthermore that it is a just cause for war if the aggrees or refuses to give satisfaction and accept just punishment without this recourse to arms (114).

B. de Ayala enumerates six separate cases which may justify recourse to arms though practically they are all comprised in Suarez' summary. Each apologist illustrates particular instances which he judges by the general standard of justice. One, however, deserves special notice for the way in which he summarises the causes which, to his mind, are a justification of war. This is Valentia who, commenting on the *Summa*, declares: These are incontrovertibly the means justifying war; it is lawful to declare war:

- (a) on the refusal to render what is rightly due—*jure*.
- (b) in order to recover goods unjustly detained by the enemy.
- (c) for the defence of the State against an unjust invader.
- (d) against those who help an enemy.
- (e) to avenge a public injury to the ruler.
- (f) against rebellious subjects, their supporters, and their ringleaders.
- (g) against those who protect evil-doers and shield them from just punishment.
- (h) by reason of the violation of a pact or alliance (115).

In the foregoing there are several points which are not applicable in the strict sense of the term to war as meaning a struggle between nations. It covers nevertheless most of the causes where it is lawful for the ruler of a nation to exercise his vindicative power (116). The point (g) is to be noticed,

(112) B. de Ayala remarks that traffic along an international thoroughfare must be without detriment—"modo transitus innocuus futurus sit." He holds too as a just cause for war the defence of friends and associates—*amicorum et sociorum*—. It is presumable that he means friends and associates engaged in a just war, otherwise to side with them would be unlawful. He also favours intervention. (*De Jure et officiis bellicis, Lib. I.c., 15.*)

(113) Suarez, *De bello, sect. III. no. 3.*

(114) "Justa etiam causa belli est ut qui injuriam intulit juste puniatur, si recuset absque bello justam satisfactionem praeferre" (*id. sect. IV, no. 6.*)

(116) According to H. Grotius three motives render a war justifiable: a) defence of one's own; b) recovery of one's due c) punishment of injuries.

(117). This definition regarding particular cases is true to the extent in which they are contained in Vitoria's general proposition. Grotius, two centuries later, enumerated the causes of war as Suarez, Valentia, Ayala, Castro, and others had done. But this is to examine special instances where special circumstances may effect a change in the question.

Vitoria has been accused of two great brevity. It has been suggested that his assertion is too wide and therefore subject to misunderstanding. Certainly to us it does not seem so, on the contrary we think that his pronouncement if correctly understood entirely covers the ground which other writers have more or less accurately endeavoured to explore.

Vitoria, indeed, lays down the basic principles which will govern all particular instances. His brief statement is pregnant with meaning. For he demands the *conscious violation of a right*. It is not sufficient that there be a violation of a right, it must needs be a *conscious* violation. In philosophical parlance we would say that a *material* violation of another's right is not of itself a just cause for war; it must be a *formal* violation that is to say, a conscious or culpable violation; for where there is no *culpa* there can be no *poena*; where there is no *delict* there can be no *penalty*. And there is obviously no delict in the mere material violation of another's right. These are the words he uses: "Sed *vindicta*, esse non potest ubi non praecessit *culpa* et *injuria*, (118).

This statement, therefore, includes two points:

- (a) violation of a right.
- (b) the *culpa* or delict contracted in carrying out such violation. There must be concurrence of both and the *vindicta* or retribution cannot be exacted unless some conscious injury has antecedently been inflicted.

Here, it may be argued, an ambitious prince or republic may under pretext of avenging the violation of a right declare war of which the real object is territorial expansion. But in this case the third condition of a just war can be brought forward to supply an answer. The aim of a just war is, not territorial expansion nor any other earthly ambition—which Vitoria had already proved to be falsifying motives—but only peace; the *intentio recta* is an absolutely essential factor in the justification of war.

Again it may be argued that in Vitoria's definition there is no means of determining whether the conscious violation of rights is insignificant or grave; for what may appear grave to the aggrieved nation may be deemed trivial by the aggressor. Here too, the whole definition must be taken into account. And we only need to recall some of Vitoria's principles to pro-

(117) A. de Castro enumerates **ten** causes of **just** warfare.

(118) Vitoria, **De Jure belli**.

duce the solution of the difficulty. War, he says, must be in the last resort. No war can be just when the quarrel which gives rise to it may be solved by peaceful means. All wars of conquest are condemned by Vitoria's definition, as also those for the glorification of the prince, etc.

Moreover he strenuously advocates that a searching enquiry be made into the causes of the dispute before proceeding to a declaration of war. He holds too that the prince or other authority must not seek occasion for fighting but contrariwise must endeavour to live in peace with all nations, for, as St. Augustine remarks, while war is a delight to the wicked it is only tolerated as a necessity by the just.

Bearing these standards in mind no one has a reason for going astray through the brevity of Vitoria's observations.

On the other hand we may agree with C. B. Trelles (119) that Vitoria set a great store on the authority of the Pope in questions relating to war, especially among christians and thought it very evident that he should be in most cases the arbiter of disputes.

It must, however, be noted as Vanderpol remarks (120), that the idea of just cause for war came to be slightly re-arranged or modified by successive theologians of the XVII century, and although their premises were drawn from the right principles of Vitoria they hastened on to conclusions which would never have Vitoria's approval. The fault manifestly lies in the illogical process of these seventeenth century apologists. They left out the element of *culpa* in the perpetrator of the injury in spite of Vitoria's lucid enunciation: "*Bellum offensivum est ad vindicandam injuriam et animadvertendum in hostes, ut dictum est; sed vindicta esse non potest, ubi non PRAECESSIT CULPA ET INJURIA.*"

This definition of Vitoria, a prolongation of that of St. Augustine and St. Thomas, was very familiar to Spanish theological circle, but to their misfortune they seldom took the trouble to verify quotations from Vitoria and in consequence his verbal teachings became more and more disfigured as they passed from one writer to another.

Here again we may bring this argument to a close with a quotation from the well-known professor C. B. Trelles. "We do not share the opinion of those who accuse Vitoria of being too laconic and who on that account deduce that his doctrine is perilously indeterminate. Neither wars of conquest, wars so-called of equilibrium, i.e. maintaining the balance of power, nor any warfare for alleged reasons of statecraft would certainly cease to trouble the world; those wars on which Machiavelli dwells whose sole aim is utility, where the nation may be

(119) "Francisco de Vitoria Fundador del Derecho International," Valladolid, 1928, parte II, c. I.

(120) "La doctrine scolastique du Droit de guerre." Paris, 1925.

able to be superior to its neighbour with prejudice to the continued maintenance of the balance of powers and the nations friendly one day may be enemies the ext. This makes a poor appearance enfronted with Vitoria's teaching. We can best see his views by juxta-position. Compare him with the European opportunists and utilitarians of our day who only see in international life the question of utility; whereas he defends the moral principle as sole basis of that supreme rule of conduct, to which it is necessary that all unlawful desires and ambitions submit, (121).

(To be Continued)

(121) C. B. Trelles, *opus cit.* Parte IV, c. 1.



PHILOSOPHY AND SOCIAL SCIENCE

Notes on the Philosophy of Kant

By *Joannes Maurer, Ph. D.*

(Continued)

Of these "Constant Contradictions and Disputes" Kant treats very exhaustively in what he calls "Transcendental Paralogism" and "Antinomies of Pure Reason". The errors by which we naturally tend to mistake the unity of our concepts as a unity existing in the objects as such, are,—like the three ideas—divided by Kant into three classes: in the first class we have the errors of "Transcendental Paralogism", brought about by a sophistic argumentation, through contradictory conclusions we derive secondly the "Antinomies of Pure Reason", while thirdly an illusionary argumentation referring to the idea of God brings us to "the Ideal of Pure Reason".

Of this "Ideal of Pure Reason" Kant writes: "The object of its ideal which exists in reason only, is called the original being, and so far as it has nothing above it, the highest being, and so far as everything as conditioned is subject to it, the being of all beings. All this, however, does not mean the objective relation of any real thing to other things, but of the idea to concepts, and leaves us in a perfect ignorance as to the existence of a being of such superlative excellence. If we follow up this idea of ours and hypostasise it we shall be able to determine the original being by means of the concept of the highest reality as one, simple, all sufficient, eternal etc, in one word determine it in its unconditioned completeness through all predicaments. The concept of such a being is the concept of God in its transcendental sense, and thus, as I indicated above, the ideal of pure reason is the object of a transcendent theology. (p.p. 467, 468)

Transcendental psychology, which investigates the nature of our thinking being, is according to Kant falsely supposed to be a science of pure reason, because as the foundation of such a science nothing can be used but "the single, and in itself perfectly empty representation of the I, of which we cannot even say that it is a concept, but merely a consciousness that accompanies all concepts. By this "I", or "He, or "It", i. e.

the thing which thinks nothing is represented out a transcendental subject of thoughts, which is known only through the thoughts that are its predicates, and of which apart from them, we can never have the slightest concept, so that we are really turning around in a perpetual circle, having already to use its representation before we can form any judgment about it. And this inconvenience is really inevitable, because consciousness in itself is not so much a representation distinguishing a particular object, but really a form of representation in general, so far as it is to be called knowledge, of which alone I can say that I think something by it." ". 282.

Through transcendental psychology we obtain therefore an apparent knowledge only, as it constantly represents "the logical subject of thought as the knowledge of the real subject in which that knowledge inheres." This real subject is the substratum and foundation of all our thoughts and knowledge, but besides the *logical meaning* of the ego, we cannot have the slightest knowledge of this real substratum. If therefore we say that the soul is a substance, we can mean with this "a substance in idea only and not in reality."

It follows that rational psychology owes its origin to a misunderstanding, by which the unity of consciousness on which the categories are founded is mistaken for an intuition of the subject as object and the category of substance is falsely applied to it. The category of substance cannot be applied because it always presupposes an intuition, and because the unity is a unity in thought only, no object and consequently no intuition of the object is given. Rational psychology, therefore, does in no way furnish us any addition to our knowledge. It merely has a critical function: it serves as "a discipline fixing impassable limits to speculative reason in this field, partly to keep us from throwing ourselves into the arms of a soulless materialism, partly to warn us against losing ourselves in a vague and, with regard to practical life, baseless spiritualism." (p. 801).

Just as reason leads us into error by making us judge that the idea of the ego represents something real and substantial, so it also leads us to many false and contradictory conclusions when by an inherent natural urge it tries to transcend the phenomenal world, which is in us and which alone is real, in order to gain absolute completeness and thus reach the unconditioned as the necessary basis of the conditioned. The existence and reality of this unconditioned is evolved by reason through a process of logical necessity, so that reason in this evolution satisfies itself and comes to an harmony with itself. Transcendental paralogism causes a onesided illusion only, with regard namely to our idea of the subject of our thought, but the case is very different when we apply reason to the objective synthesis of phenomena. With a great plausibility reason tries here to prove the real objective unconditioned totality of external phenomena, i. e. reason tries to understand the world

as totality as real. But in trying this, reason soon entangles itself so hopelessly in so many contradictions, that it must give up its task.

It is very noteworthy, moreover, that reason *must* fall into these contradictions, because of the natural antithetic, which is not produced by any artificial efforts, but into which reason falls by itself and inevitably. The contradictions, therefore, are brought about through a conflict of laws of pure reason, when it tries to penetrate to the unconditioned by judging as real and objective the synthesis of phenomena. This conflict of laws Kant calls the Antinomies of Pure Reason.

All transcendental ideas, so far as they refer to the absolute totality in the synthesis of phenomena, Kant calls cosmical concepts, partly because the concept of the cosmical universe—of which we must well bear in mind that it is an idea only—also rests on even this unconditioned totality, partly because they refer to the synthesis of phenomena only, which is empirical. The absolute totality in the synthesis of the conditions of all possible things produces an *ideal* of pure reason, i.e. God, totally different from the cosmical concept, although in a certain sense related to it. Just as the paralogisms of pure reason showed that at best the substantiality of the soul is a substantiality in idea only, so will the antinomies of pure reason place before our eyes the principles of a pretended pure, i.e. rational cosmology, and show it up as surrounded by deceptive and false appearances and as utterly irreconcilable with phenomena.

What, in this connection must be borne in mind, according to Kant, are two important things: 1. "That pure and transcendental concepts arise from the understanding only, and that reason does not in reality produce any concept, but only frees the concept of the understanding from the inevitable condition of a possible experience, and thus tries to enlarge it beyond the limits of experience, yet in connection with it.... It thus changes the category into a transcendental idea, in order to give absolute completeness to the empirical synthesis, by continuing it up to the unconditioned, which latter can never be met with in experience, but in the idea only. In doing this reason follows the principle that, if the conditioned is given, the whole sum of conditions, and therefore the absolutely unconditioned must be given likewise, the former being impossible without the latter. Hence the transcendental ideas are in reality nothing but categories enlarged until they reach the unconditioned.

2. Not all categories will lend themselves to this, but only those in which the synthesis constitutes a series and a series of subordinated—not of co-ordinated—conditions. Absolute totality is demanded by reason with regard to an ascending series of conditions only, not there where we have to deal with a descending line of consequences or with an aggregate of co-ordinated conditions." (p. 330.)

After a careful and minute examination, Kant finds that only four categories necessarily imply a series in the synthesis of the manifold, namely the categories of quantity, quality, relation and modality.

"This unconditioned may be either conceived as existing in the whole series only, in which all members without exception are conditioned, and the whole of them only absolutely unconditioned—and in this case the regressus is called infinite;—or the absolutely unconditioned is only a part of the series, the other members being subordinate to it, while it itself is conditioned by nothing else. In the former case the series is without limits a parte priori (without a beginning), that is infinite. . . . In the latter case there is something that stands first in the series, which, with reference to time past, is called *the beginning of the world*, with reference to space, the *limit of the world*, with reference to parts of a limited given whole, the *simple*, with reference to causes, *absolute spontaneity* (liberty), with reference to the existence of changeable things, *the absolute necessity of nature* (necessary being.)" (p. 337,338)

A collection of dogmatical doctrines are called by Kant *thetic*. *Antithetic* then, he does not call dogmatical assertions of the opposite, but only the conflict that necessarily arises between different kinds of dogmatical knowledge, to none of which latter we can ascribe a superior claim to our assent. The *antithetic*, therefore, considers general knowledge of reason with reference only to the conflict that must necessarily arise within it, and investigates the causes of this conflict. If our reason, making use of the principles of understanding, is applied not only to objects of experience, but ventures beyond the limits of a possible experience, there arise *sophistical and rationalizing principles* which can neither be confirmed nor refuted by experience. These principles can, each and every one of them point to conditions of necessity in the nature of reason itself. Unfortunately, however, the opposite principle can claim equally convincing and valid conditions of necessity for its support.

"A dialectical proposition of pure reason must have this characteristic to distinguish it from all purely *sophistical propositions*, first that it does not refer to a gratuitous question, but to one which human reason in its natural progress must necessarily encounter, and, secondly, that it, as well as its opponents, carries with itself not a merely artificial illusion, which when once seen through disappears, but a *natural and inevitable illusion, which even when it deceives us no longer, always remains, and though rendered harmless, cannot be annihilated*. This dialectical proposition will not refer to the unity of the understanding in concepts of experience, but to the unity of the reason in mere ideas, the condition of which,—as it is meant to agree, as a synthesis according to rules, with the understanding, and yet at the same time, as the absolute unity

of that synthesis with reason—must either, if it is adequate to the unity of the reason, be too great for the understanding, or if it is adequate to the understanding, be too small for the reason. Hence a conflict must arise, which cannot be avoided, do what we will." P. 341.

There are, then, four antinomies, which correspond to the four classes of categories. Of these antinomies Kant gives the thesis, "proves" it, then proceeds by giving the antithesis, and "proves" this too. These antinomies may shortly be presented as follows:

1. ANATOMY. QUANTITY.

Thesis: The world is temporal and in extension finite.

Antithesis: The world is eternal and in extension infinite.

2. ANTINOMY. QUALITY.

Thesis: The world matter is ultimately divisible in parts, which are simple—atoms, monades—and hence indivisible.

Antithesis: The world matter does not consist of simple elements. Nothing in this world is simple in extension, that means the istence of a simple thing cannot be derived from experience.

3. ANTIMONY. RELATION.

Thesis: Beside the causality which falls under the natural laws and which hence is necessary, we must admit that there is in the world another causality, which is free.

Antithesis: There is no free causality in this world: everything happens according to natural laws, which apply with necessity.

4. ANTINOMY. MODALITY.

Thesis: There exists an absolutely necessary being, and this being is part and cause of this world.

Antithesis: Nowhere, either in or outside of the world, exists an absolutely necessary being, which would be the cause of the world.

With regard to the thesis of the 4th antinomy it is quite interesting to note, that Kant concludes his argument in favor of the existence of a an absolutely necessary being with these words: "It follows therefore that something absolutely necessary is *contained* in the world, whether it be the whole cosmical series itself, or only a part of it."

One other point must be mentioned here: Kant makes a distinction between the first and second antinomies on the one hand and the third and fourth on the other, a distinction, which, in his philosophy, is of very great importance. The first two conditions, he says, refer to conditions which fall under a possible experieneec, that is to say they investigate quantitative

conditions, and the resulting concepts are, therefore, mathematical and cosmic ones. But the last two antinomies have as their predicates conditions which do not and can never fall under our possible experience, because these two antinomies treat of the free causality of a contingent being and of the causality of an absolutely necessary being. The resulting concepts are, then, dynamic and transcending nature. And at this place Kant reminds the reader of one of his principal tenets, namely that Transcendental Aesthetic had proven that the world we know according to quantitative conditions has only a *phenomenal* objective reality and never a transcendental, with other words the world known to us, is not a world existing in itself, a noumenon, but a phenomenon only.

For this reason. Kant remarks, both the thesis as well as the antithesis of the first and second antinomy are wrong, because they present their predicates as possessing objective and real validity, while only our phenomenal cognition is objectively true. The conclusion of Transcendental Aesthetic is confirmed by a consideration of these two antinomies, because thesis as well as antithesis follow logically and if they would refer to a real and noumenal world, they would in fact verify contradictory propositions, which indeed would be absurd. Thus Kant finds that the whole dialectical play of the cosmological ideas not even admits of any adequate object, which would be supplied by any possible experience, nor even of reason treating them in accordance with the general laws of experience. Yet, these ideas, Kant declares, are not simply arbitrary fictions, "but reason in the continual process of empirical synthesis is necessarily led on to them whenever it wants to free what, according to the rules of experience, can be determined as conditioned only, from all conditions, and comprehend it in its unconditioned totality."

But the antinomy is dialectical only, a point which must not be overlooked nor forgotten." If we are to regard that the two statements that the world is infinite in extension, and that the world is finite in extension as contradictory opposites, we assume that the world—as the whole series of phenomena—is a thing by itself.... But if we remove this supposition, or this transcendental illusion, and deny that it is a thing by itself, it exists neither as a whole by itself infinite, nor as a whole by itself finite." (p. 411).

"The antinomy of pure reason with regard to its cosmological ideas is therefore removed by showing that it is dialectical only, and a conflict of an illusion produced by our applying the idea of absolute totality, which exists only as a condition of things by themselves, to phenomena, which exist in our representation only." (p. 412.)

The principle of reason, then, is invalid as a constitutive principle of things by themselves, but there remains its validity as a rule for the continuation and for the extent of a pos-

sible experience. With this first mentioned invalidity clearly established, the conflict of reason with itself is entirely finished, "because not only has the illusion which led to that conflict been removed through critical analysis, but in its place the sense in which reason agrees with itself, and the misapprehension of which was the only cause of the conflict, has been clearly established, and a principle formerly dialectical changed into a doctrinal one." It will be remembered that the result of Kant's investigation of the mathematical and cosmic concepts resulting from the first two antinomies was that both the thesis and antithesis were false. But it is altogether different with the dynamical ideas resulting from the last two antinomies. They admit of a condition of the phenomena outside their series, that means to say a condition which itself is not a phenomenon. Here the throughout conditioned character of the dynamical series, which is inseparable from them as phenomena, if connected with the empirically unconditioned, but at the same time *non-sensuous* condition, may give satisfaction to both, to the understanding and to the reason, "because the dialectal arguments which in some way or other, required unconditioned totality in mere phenomena, vanish, while the propositions of reason, thus amended, *may both be true.*"

Toward the end of this chapter Kant makes a very important distinction when he writes. "The effect, therefore, can, with reference to *its intelligible cause*—the thing in itself—be considered as free, and yet at the same time with reference to *phenomena*, as resulting from them according to the necessity of nature; a distinction which, if thus represented in a general and entirely abstract form, may seem extremely subtle and obscure, but will become clear in its practical application." By no longer trying to defend the reality as things in themselves of phenomena, Kant believed to have reconciled nature and freedom and the unbroken connection of all phenomena in the context of nature.

Then, on page 451, he makes another remark, which throws much light on Kant's intentions with writing his entire Critique "It should be clearly understood that, in what we have said, we had no intention of establishing the reality of freedom... It was not even our intention to prove the possibility of freedom, for in this also we should not have succeeded, because from mere concepts a priori, we can never know the possibility of any real ground or any causality... that the antinomy rests in a mere illusion and that nature does not contradict the causality of freedom, that was the only thing we could prove, and cared to prove." (p. 451).



A Study of Social Legislation in the Philippine Islands

By Carmen G. Ledesma, Ph. D.

(Continued)

OUR JUVENILE DELINQUENCY LAW (ACT NO. 2815)

In the Philippine Islands, Act Number 3203 entitled "AN ACT RELATING TO THE CARE AND CUSTODY OF NEGLECTED AND DELINQUENT CHILDREN, PROVIDING PROBATION OFFICERS THEREFOR, IMPOSING PENALTIES FOR VIOLATIONS OF ITS PROVISIONS AND FOR OTHER PURPOSES", enacted on December 3, 1924 may be considered as the first great law on Juvenile Delinquency.

It introduced for the first time a most radical change in the treatment of juvenile delinquency—minors' probation and parole.

Prior to the enactment of this great law no distinction was made between adult and juvenile delinquents and the latter were treated and punished in practically the same way as the former. This was in consonance with the practice then of the courts of justice, which considered a delinquent child a mere offender against the public peace to be punished according to the gravity and nature of the offense committed, because the principle then underlying the administration of justice seemed to be merely punishment rather than constructive reformation and the remaking of an individual.

Minor offenders were accused and tried in the same manner as adult offenders, and when found guilty committed to the City Reformatories of which there were two—one for girl offenders and the other for boy offenders.

This attitude of considering juvenile offenders as criminals was changed by the enactment of Act Number 3203. Henceforth, minors were to be treated not as criminals but as "wards" or "children" of the state in need of aid, encouragement, and guidance.

Accordingly, the City Reformatories (popularly known as Lolomboy) were abolished and in their stead were established Training Schools, one for boy delinquents and one for girl offenders. (Act 3203)

The principal provisions and the manner of operation of Act Number 3203 may be summarized as follows:

1. The use of the term "reformatories" or "correctional institutions" is prohibited. The institutions are to be known as "industrial schools or by some other appropriate names".

2. The insularization of the government industrial schools for delinquents is made possible by transferring the administration of the former Boys and Girls City Reformatories to the Office of the Public Welfare Commissioner.

3. The administration of the juvenile correctional institutions is in the hands of the Public Welfare Bureau, the same as in other countries except that in these countries the bureau may be a department.

4. The probation and parole of minors in the Philippines is vested in the Public Welfare Office as distinguished from the American system which places probation and parole in the Courts.

5. Probation and parole officers are under the Public Welfare Commissioner and not under the Judge as in the United States.

This is explained by the absence of a Juvenile Court in the Philippines, agitation for the establishment of which has gone on for many years now.

6. Commitment to the proper institution is for an indeterminate period with 21 years as the maximum age limit, when the delinquent child is returned to the court having jurisdiction for decision of his case which may result in the dismissal of the case against him or sentence to the correctional institution for adult offenders.

We see then that the procedure followed is what is known in law as "interlocutory" or "suspended proceedings". Under this procedure, the period of commitment may be amended by the court any time; it may be lengthened or shortened; and the court does not lose jurisdiction over the case as long as the case is not yet finally terminated.

7. Conviction of a juvenile offender is no debarment to public office or employment.

This gives the juvenile delinquent a chance to "turn over a new leaf" so to speak and try all over again with a "clean slate" as the expression goes.

8. Prohibition of the commingling of adult and minor offenders in any place of commitment.

This provision is very important as it removes the juvenile delinquents from the insidious and corrupting influence of the adult offenders.

9. The paroling power is completely vested in the Public Welfare Commissioner who can parole a juvenile delinquent any time without the knowledge of the court; but as a matter of courtesy the court is notified.

In regard to parole it may be pointed out that the same principle observed in probation is followed; that parole, like probation is not taken as a routine matter, but that it is always accompanied by supervision on the part of a parole officer.

10. All offenders less than 18 years of age except those accused of an offense punishable by life imprisonment or death may be placed on probation.

11. With regard to the maintenance of juvenile delinquents the law provides that the expense should be borne as follows:

a. By the city or municipality in which the offense is committed in the case of a municipal or chartered city delinquent.

b. By the province in the which the offense is committed in the case of a provincial minor offender.

c. By the office of the Public Welfare Commissioner in the case of an Insular minor delinquent.

In case the delinquent's relatives are able to pay, they may be required by the court to pay for his maintenance in whole or in part.

12. Juvenile offenders shall no longer be treated as criminals, but "as in need of aid, encouragement, and guidance"; and the Act as well as all other laws applicable to minors are to be liberally construed to the end that the treatment of these may approximate that of their own parents.

The other provisions of the Act specify the duties and powers of the Commissioner of Public Welfare and of the Probation Officers. Funds for the enforcement of the Act also are provided

From the above it may be seen that the law has many good points.

The change in the "care, custody, and discipline" of the juvenile delinquent is in conformity with the most modern of social principles.

Parole and probation for minor offenders are in keeping with the latest developments in the treatment of juvenile delinquents.

Indeterminate sentence as provided for in the Act is indeed a sound element in the social treatment of juvenile delinquency as shown by its adoption in many countries not only for juvenile offenders but also for adult criminals.

The separation of minor delinquents from adult offenders is another change in consonance with developments in criminal psychology.

The provision for funds is a very happy thought for laws without funds for their enforcement are futile.

Another good point in the law is that a minor who goes wrong is given a chance to change and start anew. His having committed an offense against the law of the state in his younger days is not held against him later in his life. Even the name of the institution to which he may be committed, if he is not worthy of probation, is changed to "training school" so as to minimize the stigma that goes with commitment to a correctional institution.

But if the Law has its good points it also has its defects or limitations:

First:—In providing that offenders less than 18 years of age charged with a crime punishable by death or life imprisonment shall not enjoy the benefits of the Act, it violates a

principle now generally observed in the treatment of crime or delinquency that the punishment should fit the offender, not the crime.

This provision of the law remained in the Statute Books until January 1, 1932 when it was stricken out by the Revised Penal Code which was approved on December 8, 1930. So, now there is no longer any discrimination in the application of the Act against certain classes of juvenile offenders. All delinquents less than 18 years of age come under the scope of the law regardless of the offense committed.

Second:—The provision on the maintenance of the minor offender committed to an institution is weak and ineffective. The prayers as provided in the Act could plead inability to pay and the question would arise, "Who is to pay?"

To strengthen and clarify this provision of the law an amendment was passed on December 2, 1926. But this did not simplify matters and this provision again was amended by Article 80 of the Revised Penal Code as amended by Act 4117.

This very vexing question of who is to bear the expense of the maintenance of the juvenile delinquent was finally settled when the matter was referred to the Insular Auditor for decision. The ruling laid down by the Insular Auditor may be briefly stated thus:

In the absence of a law as to who should pay and in case of inability on the part of the delinquent's relatives to pay, payment for the maintenance of the delinquent may be taken from the internal revenue allotments for the provinces and municipalities.

This ruling, clear as it may seem, raised some confusion which until now has not been cleared up.

Third:—While Act 3203 as well as the Revised Penal Code provide for probation in the Philippine Islands, only Manila and Cebu have paid probation officers. In the rest of the Archipelago probation service is unpaid, certain provincial officials performing, in addition to their regular duties, the duties of probation officers. Under this arrangement there is always the danger that probation, being only a secondary function, might not receive the consideration that it merits.

There are two possible solutions to the situation.

Paid probation service may be extended to the province by the Insular Government or a law may be enacted which would distribute the cost of probation equally among the insular, provincial, and municipal governments.

The latter proposal is based on the principle that a good boy for the municipality is also a good boy for the province and the entire Archipelago.

It is interesting to note that during the administration of former Governor Theodore Roosevelt, Jr. some provinces and municipalities petitioned the governor that the burden of probation service be borne solely by the Insular Government. The

petition was denied with regret by the governor because in his opinion the problem of juvenile delinquency is a local problem and therefore it is not fair to shift the whole burden to the Insular Government.

In the absence of a definite provision as to who should pay for probation service, the provinces and municipalities rarely practice probation and simply commit their juvenile delinquents to the Training Schools in Welfareville.

So, the purpose of probation is defeated, and unless this point is clarified many juvenile delinquents deserving of probation will not get the chance they need or deserve but they will all be committed to the Training Institutions for delinquent boys and girls.

Fourth:—The law is not clear as to how the phrase "less than eighteen years of age" shall apply in order that a minor might be considered a minor delinquent. Shall it be taken to mean less than eighteen years of age at the time the delinquency was committed or less than eighteen years of age at the time the child is brought to court?

It was not until Act 4117 was enacted that this point was clarified. Of this, I shall speak presently.

Article 80 of the Revised Penal Code may be considered as the next great law on Juvenile Delinquency in the Philippines. It repealed Acts 3309 and 3559 and whatever provisions of Act 3203 are in conflict with it.

The important changes introduced by it are:

(1) It empowered the Director of Public Welfare (now Commissioner of Public Welfare) to return, with his recommendation, to the court a child committed to the Training School any time during the period of confinement.

It may be said in this connection that, as a rule, a child more often is returned after the period of commitment with the idea of lengthening and not shortening the period of commitment.

(2) It specified who should serve as probation officer of delinquent children in the provinces and elsewhere when there are no representatives of the Public Welfare Bureau.

Act Number 3203 provided that the Secretary of the Interior might appoint, upon the recommendation of the Director of Public Welfare, any one to serve as probation officer without compensation.

The Revised Penal Code (Sec. 80) provides that the Division Superintendent or his authorized representatives shall serve as probation officers and transfers the power of appointment upon the Court, the appointee being subject to the supervision and visitation of the Director of Public Welfare or his representative.

This change introduced by the Revised Penal Code is indeed an advance over the former arrangement, but it leaves

something more to be desired. The Division Superintendent is a very capable person. Of this there is no doubt. But he is also a very busy man and the additional duties that go with his appointment as probation officer might prove an overburden. True, he might delegate these additional duties to some one, but the selection of a representative fit to discharge the duties of a probation officer would in itself be a vexing problem.

To prevent probation service from degeneration into a mere superficial supervision, the law should be amended so as to give the Bureau of Public Welfare a chance to extend probation service to all parts of the Archipelago through paid trained probation officers.

(3) Another change introduced by Article 80 of the Revised Penal Code is the one concerning the submission of bi-monthly reports on the moral and intellectual progress of the delinquent to the Court by the Training Institution and the Probation officer.

In practice this provision is a dead letter. The bimonthly reports required are too frequent. The intervening periods between the reports are too short for a real substantial report on the intellectual and moral progress of the delinquent child.

A special ruling has been asked of judges not to apply this provision strictly. The actual practice is to submit a report once every four months.

As to the other provisions of Act Number 3203, we find that they were preserved in Section 80 of the Revised Penal Code. Probation, indeterminate sentence and parole, three important features in Act Number 3203 were preserved. The Director of Public Welfare can probation, or commit to the Training School or parole the juvenile delinquent as he sees fit.

The maintenance question tho, we find was not clarified even in the Revised Penal Code. Hence, the necessity of submitting the question to the Insular Auditor who, as has already been brought out elsewhere, ruled that the cost of maintenance be taken from the insular allotments.

Another important law on Juvenile Delinquency is Act Number 4117 amending the first paragraph of Article 80 of the Revised Penal Code. The amendatory law is important as it states clearly and definitely who are to be considered minors and, therefore, entitled to the benefits of the Juvenile Delinquency Law. According to this law, a delinquent is to be classified as a minor delinquent if he is under eighteen years of age at the date of the commission of the crime.

Such are the legislative provisions with regard to the very serious and delicate problem of juvenile delinquency in the Philippines. Though it cannot be said to be the best, the system that we have in the Philippines is good enough under the conditions. However, the Bureau of Public Welfare has always

been a staunch advocate of a more comprehensive but simplified procedure in the treatment of juvenile delinquency in the Philippine Islands. In its desire to improve the actual system of treatment of juvenile delinquency in the Philippine Islands, it has from time to time suggested the enactment of certain laws which it considers necessary if the juvenile offender is really to be given a "square deal".

Among the laws that it would like to see enacted are two, namely:

(1) Juvenile Delinquency Contributory Law

(2) Law creating, at least in the City of Manila, a Juvenile Court or Domestic Relations Court or a Family Court.

A study of the records of juvenile offenders will show that in many cases, minors are induced to commit offenses by adults either intentionally or unintentionally. Whether the influence of the adult is intentional or unintentional, it is unreasonable to punish the juvenile offender and let the adult go scot-free. Whoever leads a minor into committing an offense should be considered an accessory to the fact and should, therefore, be made to share the punishment with the actual offender.

Cases are numerous where the minor commits an offense under threat of punishment or something more terrible. To protect helpless minors from the corrupting influence of evil-intentioned adult persons, a law should be enacted punishing all those who contribute to the delinquency of a minor.

The principle that adult persons who are responsible for the delinquencies of minors committed under pressure should be punished, is embodied in two bills prepared by the Bureau of Public Welfare and presented to the Legislature for enactment. These bills, however, have not yet been made into law.

The first of these bills is entitled "AN ACT CREATING A FAMILY COURT IN THE CITY OF MANILA, PROVIDING SPECIAL POWERS AND FUNCTIONS TO IT, IMPOSING PENALTIES UPON THOSE CONTRIBUTING TO MINOR DELINQUENCY AND FOR OTHER PURPOSES" and

The second is "AN ACT DEFINING JUVENILE DELINQUENCY, CREATING JUVENILE COURTS IN THE PHILIPPINE ISLANDS, PROVIDING FOR THE CORRECTION OF MINOR DELINQUENTS, IMPOSING PENALTIES UPON THOSE CONTRIBUTING TO MINOR DELINQUENCY AND FOR OTHER PURPOSES".

In advocating the enactment into law of the first of these two bills, the Editor of the Welfare Advocate (June, 1933 issue) said:

"The enactment of this law will enable this country to make another big advance in the administration of justice in the field of child and family welfare, for it will bring about the

(a) consolidation of all cases of family relationships in a court especially equipped to handle them;

(b) substitution, as much as practicable and desirable, of social treatments over penal treatments thru mediation, reconciliation and probation instead of the imposition of fine and imprisonment upon guilty defendants;

(c) consideration of social evidences as well as legal evidences in suitable cases;

(d) application of the resources of social science in the treatment of human maladjustments; and

(e) realization of a court where children can be heard and handled as children, thereby obviating the necessity of establishing a juvenile court in Manila.

This bill not only provides for the punishment of adults who contribute to juvenile delinquency, but it also recognizes the close connection between family conditions and relationships and juvenile delinquency.

Section 5, which is the "contributory" clause, reads:

"Any adult person who is responsible for or has contributed to juvenile delinquency, or has induced a minor to commit acts which lead to juvenile delinquency, shall be guilty of the violation of this and, once convicted, shall be punished by imprisonment for not more than one year, or by a fine not exceeding one thousand pesos, or both such fine and imprisonment in the discretion of the court."

This bill also makes the establishment of a separate juvenile court unnecessary as may be seen in Section 2 which reads:

"The Family Court is empowered to hear and enter judgment in cases of acts and offenses of adultery or concubinage, divorce, desertion, legal adoption, non-support, guardianship, maintenance of minors, contributing to juvenile delinquency and dependency juvenile delinquency and those cases, civil or criminal, wherein the offended party is a minor, and all other cases on domestic and family relations. In cases of the foregoing acts and offenses which fall under the exclusive jurisdiction of the Municipal Court of Manila, the jurisdiction of the Family Court shall be exclusive."

Whether juvenile delinquencies should be heard together with family difficulties in a Family Court and not separately in a Juvenile Court is open to question.

Speaking of the Domestic Relations Court or Family Court Dr. John O'Grady in his Book "An Introduction to Social Work" cautions:

"It is felt that no matter how desirable it (the Domestic Relations Court) may be in theory, one court cannot do justice to so many diverse problems."

The proposed law would add, to the many family questions to be settled by the Family Court, the trial of juvenile delinquencies. This is a questionable policy.

The Juvenile Court Bill advocated by the Bureau of Public Welfare gives to the Juvenile Court exclusive jurisdiction over "the acts that constitute juvenile delinquency". These acts, as enumerated in section 4 of the bill, are as follows:

- (a) Violating any law of the Philippine Islands or any municipal ordinance;
- (b) Being disorderly, incorrigible, habitually disobedient, unreasonable and beyond the control of his parents, guardian, custodian or other lawful authority;
- (c) Deserting the home or residence of his parents, guardians, or custodian without their consent;
- (d) Association with immoral or vicious persons or habitually using obscene or profane language;
- (e) Frequenting any place undesirable for minors or being a truant; and
- (f) So deporting himself as willfully to injure or to endanger the morals or health of himself or others.

The bill also gives to the Juvenile Court concurrent jurisdiction with the Court of First Instance in the acts that contribute to juvenile delinquency as defined above. The "contributory" clause, section 12 of the bill, reads:

"Any adult person who is responsible for or has contributed to juvenile delinquency as defined in this law, or has induced a minor to commit acts which lead to juvenile delinquency, shall be guilty of the violation of this Act, and once convicted after he has been prosecuted and tried in accordance with the existing criminal procedure, shall be punished by imprisonment for not more than one year, or by a fine not exceeding one thousand pesos, or both such fine and imprisonment in the discretion of the court."

It may be seen from the attached copies of these two bills advocated by the Bureau of Public Welfare that they supplement each other.

With respect to jurisdiction over cases, Dr. John O'Grady advances the opinion that the juvenile could "must have jurisdiction over those who contribute to the delinquency of children. It must be in a position to punish the junk-dealer who brings articles stolen by children, the dance hall or pool-hall proprietor who permits children on his premises, and moving-picture theaters that exhibit obscene pictures. Above all it must have jurisdiction over those who induce children, or teach them vicious habits." In cases of truancy, "it will usually be more necessary to proceed against the parent than against the child."

He even advocates "original jurisdiction over all questions affecting neglect, dependency, and guardianship of children". To the juvenile court he would also give "authority to proceed against the deserter and the non-supporter". Also "authority to establish the paternity of children born out of wedlock". (*An Introduction to Social Work*, pp. 142-143.)

Now, these may be giving the juvenile court a rather broad jurisdiction but there is truth in what he says:

"That the juvenile court cannot do its work effectively unless it is placed in a position to deal not only with the child but also with the child's family and the conditions in the community that make for delinquency."

So, then, if we give the juvenile court here the same or similar jurisdiction it will not be necessary to establish a Family Court in so far as the question of juvenile delinquency is involved.

Now, as a court for the settling of family problems, it must be admitted, its establishment would be, indeed, an answer to a long felt want for this kind of court.

That the establishment of juvenile courts, or, at least one in Manila, is a necessity cannot be denied any longer.

At the present time, in accordance with the law, juvenile offenders of the city are brought for trial and disposition in the Municipal Court of Manila, Branch III. Ever since Act Number 3203 became effective this branch of the Manila Municipal Court has heard and tried, among other cases, all juvenile cases falling under the jurisdiction of the Manila Municipal Court.

Records show that "the first juvenile session in this Branch was held on December 21, 1925" and that the juvenile delinquent tried "was placed on probation on March 18, 1925". (1)

Since then many juvenile delinquency cases have been tried and decided in this Court which serves as a juvenile delinquency court in the absence of a separate juvenile court.

And since then, it may be added, there has been much agitation for the creation of a separate real juvenile court embodying all the essential features of this kind of court. For a court that performs the dual function of handling adults' cases and minors' cases cannot be expected to embody in its procedure all the features that a juvenile court should have, namely:

- (1) Separate hearings for children's cases
- (2) Informal or chancery procedure

(1) E. J. Carballo—Memorandum for Sen. E. Quirino. Subject: Juvenile Court Movement and Status of Juvenile Court Work in the Municipal Court of Manila, July 14, 1933.

- (3) Regular probation service
- (4) Detention separate from adults
- (5) Special court records
- (6) Provision for mental and physical examination.

In fact, the inadequacy of the Third Branch of the Municipal Court of Manila to handle juvenile delinquency cases has led to repeated agitation for the establishment of separate juvenile courts.

This movement, which might be said to have begun as early as 1925 has so far met with no success. Under the last Governor-General, Frank Murphy, the movement received new impetus, but the hopes that were aroused were unfortunately not realized due principally, it has been pointed out, to the "government expenses that will naturally be involved." (1)

Mr. Ernesto J. Carballo, Chief Probation Officer of the Bureau of Public Welfare, who has had many years of experience with juvenile delinquents, has proposed the establishment of juvenile court which should be a specialized branch of the Court of First Instance and which may be called "Court of First Instance of Manila, Juvenile (Court) Branch." (2)

He has a special reason for desiring the juvenile court to be established in a Court of First Instance. At one time the parents of a probationer took away by force and against the express order of the court this probationer from her temporary guardian duly appointed by the Court. When informed of this, the presiding judge of Branch III of the Municipal Court said that the parents could not be punished for "contempt of court" as his Court was not a First Instance Court.

So if the juvenile court is to function adequately it must be vested with the power to deal properly with arrogant and defiant parents and caretakers of juvenile delinquents.

To this juvenile court that he proposes he would give exclusive jurisdiction over all minors who:

- a. Violate a law or local ordinance.
- b. Are incorrigible.
- c. Associate with thieves, criminals, prostitutes, vagrants or vicious persons.
- d. Are growing up in idleness or crime.
- e. Knowingly visit disreputable and improper places such as saloons, houses of ill fame and gambling places.
- f. Wander about the streets at night or other out-of-the-way places.
- g. Habitually use or write vile, indecent or obscene language.

(1) Editor's Note: Proposed Juvenile and Family Relations Court, Welfare Advocate, June, 1933.

(2) Memorandum for Atty. Vicente Francisco: Subject—A Juvenile Court for Manila, August 23, 1933.

h. Absent themselves from home without just cause or without the consent of parents or guardians.

i. Are immoral or indecent.

j. Are habitual truants, etc.

In addition, the court is to have "exclusive jurisdiction" over all dependent children defined as those who are:

a. Destitute

b. Homeless

c. Abandoned

d. Dependent upon the public for support

e. Without proper parental care or guardianship

f. Begging or receiving alms

g. Found living in a house of ill fame, or with vicious or disreputable persons

h. In a home unfit because of neglect, cruelty or depravity on the part of parents.

i. In surroundings dangerous to morals, health, or general welfare or such as to warrant the state in assuming guardianship, etc.

Altho Mr. Carballo admits that the juvenile court "should handle only and exclusively children's cases", he would "also include within its jurisdiction all cases, civil or criminal, wherein the offended party or complainant is a minor, as well as all cases contributing to juvenile delinquency and dependency". "The idea", he explains, "is to prevent as much as possible, the appearance of a child in any adult court."

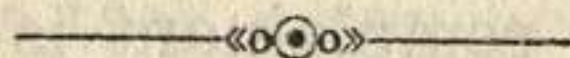
To preside over the juvenile court he advocates the appointment of a male judge. He opposes the appointment of a female judge on the ground that the task of eliciting the necessary information from the girl delinquents, which it is contended a female judge would do better, is simply "a matter of right approach". Furthermore, the number of delinquent girls who are brought to the courts of Manila every day is very small. As to the proposal to have two "salas" one presided over by a female judge and the other by a male judge he says that is "not only impractical but is also expensive".

Such are the features of the juvenile court that the actual Chief Probation Officer of the Bureau of Public Welfare proposes for the City of Manila and, if possible, for the provinces. Considering that the man who has made this proposal has had over eight years of "connection", as he himself says, (1) "with the Children's Branch of the Manila Municipal Court as Probation Officer and then as Chief Probation Officer of what is now the Bureau of Public Welfare" his plan deserves more than a cursory glance

We cannot close this chapter without voicing a third much

(1) Memorandum for Sen. Elpidio Qurino: Subject—Juvenile Court Movement and Status of Juvenile Court Work in the Municipal Court of Manila, July 14, 1933.

needed law on Juvenile Delinquency. This is a law establishing paid probation service throughout the Philippine Islands so that probation may be properly administered. For probation is a matter that should not be considered of secondary importance or allowed to degenerate into mere routine. Properly administered it is the making over of potential criminals; improperly or carelessly administered, it is a power for much social evil.



PHARMACY

Herbarium Work In The Philippines

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Definition, value and uses of Merbarium.—Herbarium, or hortus siccus (dry graden), is a collection of dried plants, properly classified, named, and arranged phylogenetically. It is an institution where the flora of a country may be studied, and where the botanist, collector, or traveller may obtain all the information concerning any particular plant. It has the nature of a workshop or labotarory where dried plants are kept for referential studies—the identity of plants, the names of which are unknown or lost, can be ascertained. “An herbarium is a necessary adjunct to all botanical knowledge, and without it a country dependent upon its primary production would be greatly handicapped, for whether one considers botanical science in general or the economic aspect in particular, the upkeep of such an institution and a trained botanist is essential in order to determine whether a given plant is adaptable for a particular purpose, and to classify it and preserve specimens of it so that it may be recognized with certainty.”

Early Herbaria of the world.—According to available records, Luca Ghini (1500-1556), a teacher of botany at Padua, Italy, was probably the first to suggest the formation of herbaria of dried plants mounted on paper. His pupil John Falconer, had a book of dried plants, the earliest herbarium on record, which he showed to William Turner (the Father of English Botanist) sometimes between 1540 and 1542. This fact has been affirmed by Sach who stated that “he (John Falconer) seems to have been the first who made use of dried plants for scientific purposes.” Other early herbaria were formed by Greault at Lyons in 1558 and was formerly preserved at Paris; by Ratzberger in 1559, now at Cassel; by Rauwolf in 1573-1575, now at Leyden; and by Gaspar Bauhin in 1585, now at Basel.

In the Philippines the first herbarium specimens were collected by Padre Kamel, S.J., who sent them to James Petiver

in London in the year 1701. "These specimens are still preserved in the Sloane collection, at the British Museum." Extensive collections were made and deposited in different herbaria in Europe and in the United States, but it was only during the time of Sebastian Vidal (1876-1889) when the first permanent herbarium was formed in the city of Manila. However a temporary herbarium was organized by Padre Manuel Blanco in the preparation of his *Flora de Filipinas* in 1837. Padre Fernandez-Villar had a special herbarium consisting of 500 species aside from his temporary herbarium on which many of the species of the *Novissime Appendix* were based. All these herbaria were deposited at the convent of Guadalupe, Rizal Province, where on February 19, 1899, they were burned to ashes.

Herbaria Previous to the American Occupation.—The most valuable herbarium during the Spanish administration was established by Sebastian Vidal when he was director of the Forestry Bureau. There were approximately between 10,000 and 15,000 specimens, 4,000 of which were collected and identified by him with the aid of R. A. Rolfe of Kew, London. The herbarium also contained miscellaneous collections of Philippine plants, a partial set of Cuming's Philippine collections, and many plants from India, Malay Archipelago, Australia, etc. Type species were the most valuable collection in this herbarium including several species that were erroneously credited to the Philippine flora. Unfortunately, this valuable herbarium was partially destroyed by the earthquake of 1880 and by the severe typhoon of 1883, and then was entirely destroyed by an accidental fire on September 27, 1897. Luckily enough, Vidal deposited a set of his collection at the Kew Herbarium, London, and another set at the Museo Ultramarino, Madrid, Spain; and he sent a partial set to Leyden, Sweden.

Regino Garcia, a Filipino by birth, who served in the Forestry Bureau during the Spanish regime and later employed as botanist in the Bureau of Forestry during the early days of the American occupation, had an herbarium consisting of about 1,000 specimens. The herbarium was housed in the Ateneo Municipal (now Ateneo de Manila). The specimens were mounted on sheets of heavy white paper, 14 x 23 inches, and were identified by him alone. Unfortunately this herbarium was burned when the old building of the Ateneo de Manila was destroyed by fire on August 13, 1932.

The late Dr. Leon Ma. Guerrero had also an herbarium at the College of San Jose containing about 2,000 specimens. The specimens were in folded sheets of ordinary Chinese wrapping paper arranged in portfolios of about 10 x 14 inches in size and packed in boxes. Most of the specimens were collected and identified by Doctor Guerrero.

According to Merrill the defunct Museo Biblioteca in Manila was able to secure about 2,000 duplicates of Vidal's collec-

tion that were distributed in foreign herbaria. The duplicates were secured to reestablished an herbarium after the one organized by Vidal was destroyed by fire. As to the whereabouts of the herbarium materials no body knows because the museum ceased to exist at the time of the American occupation.

HERBARIA DURING THE AMERICAN ADMINISTRATION

The Bureau of Forestry herbarium.—The first herbarium that was established by the Americans was housed in the Bureau of Forestry. During the organization of this bureau in May, 1900, Captain G. P. Hern, then the director, required the employees to collect botanical specimens with the view to enlarging the herbarium. About two years later, the herbarium contained 852 specimens which were collected from Benguet, Tarlac, Zambales, Camarines Sur, Zamboanga, Surigao, Mount Apo, Tinago, Bongao, and Dinagat. All these specimens were identified by Dr. Elmer D. Merrill who came to the Islands as botanist of the Bureau of Agriculture.

The Bureau of Agriculture herbarium.—When the Bureau of Agriculture was organized in April, 1902, the services of Dr. Merrill as botanist were secured from the United States Department of Agriculture. Active botanical work was commenced almost immediately and collections were made around the vicinity of Manila. To secure foreign specimens exchange was made with the Singapore Botanical Garden; with the Botanical Institute, Buitenzorg, Java; and with the United States Department of Agriculture.

In July, 1902, by Act of the Civil Commission, the botanist of the Bureau became also the botanist of the Bureau of Forestry. By this arrangement the herbaria of the two Bureaus were therefore fused and more extensive collections were made. Starting with the nominal collection of 852 specimens of the Bureau of Forestry the herbarium specimens increased to about 5,000 in July, 1903. Duplicates were distributed to the United States National Herbarium, to the Botanical Garden in Berlin, and to other botanical institutions in Europe and America.

Bureau of Science herbarium.—In July, 1903, when the Bureau of Government Laboratories was established, the botanist and the botanical equipment of the bureaus of Forestry and Agriculture were transferred to this new bureau. The herbarium then contained 5,061 mounted specimens. A year later, however, the specimens increased to 10,989. The following tabulation indicates the various sources of the specimens acquired by the herbarium:

Sources	Specimens
The's Lands Plantentuin, Buitenzorg, Java	126
Royal Botanical Garden, Perideniya, Ceylon	62
United States Department of Agriculture	30

E. D. Merrill, Bataan, Pampanga, Tarlac, Rizal, Tayabas, Camarines Sur, Mindoro and Masbate	989
E. B. Copeland, Bataan, Davao, Cotabato, Zamboanga, Calignan, Bayas, Panay and Negros	1,360
A. D. E. Elmer, La Union, and Benguet	1,120
H. N. Whitford, Bataan	537
J. M. Ritchie, Guimaras Island	24
W. H. Ware, Tayabas	25
P. T. Barnes, Bataan	306
J. A. Gammil, Guimaras	140
W. Klemme, Tayabas	26
G. S. Van Wickle, Camarines Sur	21
C. H. Bath, Tayabas	3
W. M. Maule, Zambales	30
T. E. Borden, Bataan	219
E. Hagger, Tayabas	10
Mariano Ramos, Rizal	96
H. Hallier, Laguna, Zambales, Zamboanga & Basilan	773
De Vore and Hoover, Davao and Basilan	382
L. Ma. Guerrero, Rizal	42
J. V. Barrow, Cebu	32
Luther Parker, Pampanga	79
Total	6,432

Several collections were also made by the early American teachers and other government employees from places where they were assigned. This contribution was responsible for the rapid expansion of the herbarium. Duplicates if any were sent abroad. The herbarium in turn received exchanges from the following:

Sources	Specimens
U. S. National Herbarium, Washington, D.C.	2,155
N. Y. Bot. Garden, Bronx Park, New York	1,055
The Royal Botanic Garden, Calcutta, India	607
The Gray Herbarium, Cambridge, Mass.	875
St. Louis Purchase Exposition, St. Louis, Mo.	515
The Missouri Botanical Garden, St. Louis, Mo.	355
Botanisches Museum and Laboratorium für Waarenkunde, Hamburg, Germany	456
Total	6,018

Because of its increased activities the Bureau of Government Laboratories was changed to the Bureau of Science in November 1, 1905. Cooperative work was centralized and employees detailed in the fields collected botanical specimens for the herbarium. At the close of the fiscal year 1905-1906 there

were 46,000 mounted sheets in the herbarium. Since then the various Philippine collections have been classified into three items, namely, (1) Bureau of Science, (2) Bureau of Forestry, and (3) miscellaneous. Serial numbers were assigned to each collection with separate identification labels and record books which were followed in numbering the specimens. The following are samples of field and identification labels used in the herbarium:

B. Sc. Form No. 38

FLORA OF THE PHILIPPINE ISLANDS
HERBARIUM, BUREAU OF SCIENCE

Common name Dialect

Field No. Herbarium No.

Collector

Island or Province

Locality

Habitat

Altitude above the sea meters.

Tree; shrub; bush; vine; herb

Height of plant M.

Diameter, breast high Cm.

Flower

(Odor, color, etc.)

Fruit

(Kind, odor, color etc.)

Special notes

Economic uses

Date

FIELD LABEL.

BUREAU OF SCIENCE NO.

FLORA OF THE PHILIPPINES
HERBARIUM, BUREAU OF SCIENCE

Coll.
 8—373

IDENTIFICATION LABEL (NEW).

PHIL. NAT. HERB.

FLORA OF THE PHILIPPINES
PHILIPPINE NATIONAL HERBARIUM

IDENTIFICATION LABEL (OLD).

Preparation of herbarium specimens.—Botanical specimens brought to the Bureau of Science are already dried. These are sorted and portioned in convenient sizes making as many duplicates as possible. They are treated with the herbarium sublimate (1,000 cc denatured alcohol, 40 grams mercuric chloride, 10 cc phenol). The sublimated materials are air-dried for overnight after which they are to be provided with identification labels. On these labels are printed (stenciled) the locality, collector's name, and the date of collection. The labels are numbered, each kind of specimens bearing the same number. From each number, one sheet is separated to be mounted for the herbarium; the rest are kept as duplicates for exchange.

The paste for the herbarium is made by dissolving acacia powder in water and adding a few drops of phenol. Usually the undersurface of the specimen is brushed with the paste before placing the specimen on the mounting sheet (Atlantic Ledger 16.5 x 11.5 inches). The identification label is pasted at the lower right-hand corner of the mounting sheet and the field label at the top left-hand corner. Clean white paper is placed on each mounted specimen and on a pile of them a weight is placed. The next day the mounted specimens are assorted and strapped with gummed paper cut in convenient sizes according to the size of the specimens.

Fern specimens are not gummed before they are mounted but are simply strapped either perpendicular or parallel to the base of the mounting sheet.

Mosses, hepatics, delicate algae, lichens, and fungi are placed in paper packets and then pasted on the mounting sheet. Coarse fungus specimens are placed in packages or boxes made of hardboards. Sometimes specimens of algae are directly mounted by simply pressing them on the mounting sheet with the use of cheese cloth and flat weights.

Filing in the herbarium.—The specimens are identified by the taxonomist after which they are sorted into families, genera, and species before they are being filed in the herbarium cases. The cases are made of red woods, lumber, being light and not susceptible to great contraction and expansion. The dimensions are as follows: height, 100 cm; length, 150 cm; and width, 50 cm. Each case has 24 pigeon holes, the size of each of which is depth, about 49 cm; width, 33 cm; and height, 16 cm. It has two doors attached to both ends and are tight enough to prevent the entrance of dust and insects. Inside each pigeon hole and right at the rear end is placed naphthaline flakes and paradichlor-benzene.

The spermatophytes are grouped into three; namely, type, general and economic. The type collections are in pink covers composing of the type species with the original notes of the authority. Each sheet of these species is provided with a type label. The type specimens, being the most valuable herbarium specimens, are contained in 14 cases and segregated from the general and economic collections. All type specimens of Doctor Merrill collected from 1902 to 1923 are in this collection. Also type specimens of ferns of Doctor Copeland and the co-types of Mr. Elmer are included in the type collection.

The general collections are sorted into four kinds of genus covers namely, (1) Philippine in white covers, (2) Bornean in green covers, (3) Chinese and Japanese in yellow covers, and (4) all other foreign materials in red covers. In filing all Philippine plants under the first cover, families are distributed first, then come the specimens under the green, yellow, and red covers, namely, (1) Philippine in white covers, (2) Bornean in each genus the species are filed alphabetically, but Philippine materials belonging to the same species are filed geographically from the north to the south end of the Archipelago. There are 190 cases filled with the general collection and each case is provided with a label bearing the families and genera filed in it. The arrangement of filing the herbarium specimens is patterned after that of Engler and Prantl, as follows:

Cycadaceae	1	Sparganiaceae	11
Ginkgoaceae	5	Potamogetonaceae	12
Taxaceae	6	Najadaceae	13
Pinaceae	7	Aponogetonaceae	14
Gnetaceae	8	Juncaginaceae	15
Typhaceae	9	Alismaceae	16
Pandanaceae	10	Butomaceae	17

Hydrocharitaceae	18	Loranthaceae	68
Triuridaceae	19	Myzodendraceae	69
Gramineae	20	Santalaceae	70
Cyperaceae	21	Grubbiaceae	71
Palmae	22	Opiliaceae	72
Cyclanthaceae	23	Olacaceae	73
Araceae	24	Balanophoraceae	74
Lemnaceae	25	Aristolochiaceae	75
Flagellariaceae	26	Rafflesiaceae	76
Restionaceae	27	Hydnoraceae	77
Centrolepidaceae	28	Polygonaceae	78
Mayacaceae	29	Chenopodiaceae	79
Xyridaceae	30	Amarantaceae	80
Eriocaulonaceae	31	Nyctaginaceae	81
Rapateaceae	32	Batidaceae	82
Bromeliaceae	33	Cynocrambaceae	83
Commelinaceae	34	Phytolaccaceae	84
Pontederiaceae	35	Aizoaceae	85
Philydraceae	36	Portulacaceae	86
Juncaceae	37	Baseliaceae	87
Stemonaceae	38	Caryophyllaceae	88
Liliaceae	39	Nympheaceae	89
Haemodoraceae	40	Ceratophyllaceae	90
Amaryllidaceae	41	Trochodendraceae	91
Velloziaceae	42	Ranunculaceae	92
Taccaceae	43	Lardizabalaceae	93
Dioscoreaceae	44	Berberidaceae	94
Iridaceae	45	Menispermaceae	95
Musaceae	46	Magnoliaceae	96
Zingiberaceae	47	Calycanthaceae	97
Cannaceae	48	Lactoridaceae	98
Marantaceae	49	Anonaceae	99
Burmanniaceae	50	Myristicaceae	100
Orchidaceae	51	Gomortegaceae	101
Casuarinaceae	52	Monimiaceae	102
Saururaceae	53	Lauraceae	103
Piperaceae	54	Hernandiaceae	104
Chloranthaceae	55	Papaveraceae	105
Lacistemaceae	56	Cruciferae	106
Salicaceae	57	Tovariaceae	107
Myricaceae	58	Capparidaceae	108
Leitneriaceae	59	Resedaceae	109
Balanopsidaceae	60	Moringaceae	110
Juglandaceae	61	Sarraceniaceae	111
Betulaceae	62	Nepenthaceae	112
Fagaceae	63	Droseraceae	113
Ulmaceae	64	Podostemonaceae	114
Moraceae	65	Hydrostachyaceae	115
Urticaceae	66	Crassulaceae	116
Proteaceae	67	Cephalotaceae	117

Saxifragaceae	118	Melanthaceae	168
Pittosporaceae	119	Balsaminaceae	169
Brunelliaceae	120	Rhamnaceae	170
Cunoniaceae	121	Vitaceae	171
Myrothamnaceae	122	Elaeocarpaceae	172
Bruniaceae	123	Chlaenaceae	173
Mamamelidaceae	124	Gonystylaceae	174
Platanaceae	125	Tiliaceae	175
Crossosomataceae	126	Malvaceae	176
Rosaceae	127	Bombacaceae	177
Connaraceae	128	Sterculiaceae	178
Leguminosae	129	Scytopetalaceae	179
Geraniaceae	130	Dilleniaceae	180
Oxalidaceae	131	Eucryphiaceae	181
Tropaeolaceae	132	Ochnaceae	182
Linaceae	133	Caryocaraceae	183
Humiriaceae	134	Marcgraviaceae	184
Erythroxylaceae	135	Guiinaceae	185
Zygophyllaceae	136	Theaceae	186
Cneoraceae	137	Guttiferae	187
Rutaceae	138	Dipterocarpaceae	188
Simarubaceae	139	Elatinaceae	189
Burseraceae	140	Frankeniaceae	190
Meliaceae	141	Tamaricaceae	191
Malpighiaceae	142	Fouquieriaceae	192
Trigoniaceae	143	Cistaceae	193
Vochysiaceae	144	Bixaceae	194
Tremandraceae	145	Cochlospermaceae	195
Polygalaceae	146	Koeberliniaceae	196
Dichapetalaceae	147	Canellaceae	197
Euphorbiaceae	148	Violaceae	198
Callitrichaceae	149	Flacourtiaceae	199
Buxaceae	150	Stachyuraceae	200
Empetraceae	151	Turneraceae	201
Coriariaceae	152	Malesperbiaceae	202
Limnanthaceae	153	Passifloraceae	203
Anacardiaceae	154	Achariaceae	204
Cyrillaceae	155	Caricaceae	205
Pentaphylaceae	156	Loasaceae	206
Corynocarpaceae	157	Datisceae	207
Aquifoliaceae	158	Begoniaceae	208
Celastraceae	159	Ancistrocladaceae	209
Hippocrateaceae	160	Cactaceae	210
Stackhousiaceae	161	Geissolomaceae	211
Staphyleaceae	162	Penaeaceae	212
Icacinaceae	163	Oliniaceae	213
Aceraceae	164	Thymelaeaceae	214
Hippocastanaceae	165	Elaeagnaceae	215
Sapindaceae ..	166	Lythraceae	216
Sabiaceae	167	Sonneratiaceae	217

Punicaceae	218	Polemoniaceae	250
Lecythidaceae	219	Hydrophyllaceae	251
Rhizophoraceae	220	Borraginaceae	252
Combretaceae	221	Verbenaceae	253
Myrtaceae	222	Labiatae	254
Melastomataceae	223	Nolanaceae	255
Onagraceae	224	Solanaceae	256
Halorrhagidaceae	225	Scrophulariaceae	257
Cynomoriaceae	226	Bignoniaceae	258
Araliaceae	227	Pedalinaceae	259
Umbellifera	228	Martyniaceae	260
Cornaceae	229	Orobanchaceae	261
Clethraceae	230	Gesneriaceae	263
Pirolaceae	231	Columelliaceae	263
Lennoaceae	232	Lentibulariaceae	264
Ericaceae	233	Globulariaceae	265
Epacridaceae	234	Acanthaceae	266
Diapensiaceae	235	Myoporaceae	267
Myrsinaceae	236	Phrymaceae	268
Primulaceae	237	Plantaginaceae	269
Plumbaginaceae	238	Rubiaceae	270
Sapotaceae	239	Caprifoliaceae	271
Ebenaceae	240	Adoxaceae	272
Styracaceae	241	Valerianaceae	273
Symplocaceae	242	Dipsaceae	274
Oleaceae	243	Cucurbitaceae	275
Salvadoraceae	244	Campanulaceae	276
Loganiaceae	245	Goodeniaceae	277
Gentianaceae	246	Candolleaceae	278
Apocynaceae	247	Calyceraceae	279
Asclepiadaceae	248	Compositae	280
Convolvulaceae	249		

The economic collection consists of all economic plants including newly introduced species that are found in the Philippines. This collection which is filed in 3 cases was organized in 1929 by Dr. Eduardo Quisumbing, using his collection of the cultivated plants from California as the nucleus. A seed collection is also being organized in connection with the study of economic ornithology and of the many samples of seeds brought in for determination.

The fern and their allies are distributed in white, green, yellow and red covers and are deposited in 16 cases. The genera in each family are arranged and filed phylogenetically, instead of alphabetically. In Polypodiaceae the genera are filed according to Copeland's scheme, as follows:

10	Plagiogyria	12445	Cionidium
120	Cyathea	12446	Luerssenia
1211	Matteuccia	125	Athyrium
1212	Onoclea	12521	Blechnum
1221	Diacalpe	12522	Doodia
1222	Peranema	12523	Brainea
1223	Monachosorum	12524	Woodwardia
1224	Acrophorus	12525	Sadleria
1225	Stenolepia	1253	Asplenium
1231	Cystopteris	125311	Ceterac
1232	Woodsia	125312	Pleurosorus
1233	Ptilopteris	12532	Camptosorus
124	Dryopteris	125331	Phyllitis
12401	Currania	125332	Diplora
12402	Psomiocarpa	125333	Boniniella
12403	Heterogonium	12534	Diellia
124031	Stenosemia	12535	Stenochlaena
12411	Haplodictyum	32	Davallodes
12412	Sphaerostephanos	321	Trogostolon
12413	Dictyocline	322	Leucostegia
12536	Lomagamma	323	Humata
12537	Thysanosoria	324	Davallia
20	Dicksonia	325	Scyphularia
21	Cibotium	3x	Arthropteris
22	Cystodium	40	Matonia
2211	Nephrolepis	401	Phanerosorus
230	Orthiopteris	41	Dipteris
231	Ithycaulon	4211	Christiopteris
24	Balantium	4212	Cheiropleuria
241	Dennstaedtia	4213	Hymenolepis
2411	Microlepia	4221	Platycterium
24111	Oenotrichia	4222	Cyclophorus
24120	Tapeinidium	4223	Drymoglossum
24121	Sphenomeris	4224	Elaphoglossum
24122	Protolindsaya	423	Polypodium
24123	Lindsaya	4231	Prosaptia
24130	Schizoloma	4232	Grammitis
24131	Taenitis	42321	Oreogrammitis
24132	Syngramma	42322	Cochlidium
24133	Craspedodictyum	42323	Calymmodon
1242	Polystichum	24134	Hemionitis
12421	Cyrtomium	24135	Gymnopteris
12431	Cyclopeltis	24136	Aspleniopsis
12422	Egenolfia	2413x	Pityrogramma
12432	Didymochlaena	2413x	Anogramme
1244	Tectaria	2420	Leptolepia
12441	Tectaridium	2421	Hypolepis
12442	Hemigramma	24211	Paesia
12444	Quercifilix	24212	Pteridium

24213	Histiopteris	424	Goniophlebium
24214	Pteris	425	Microsorium
242141	Coniogramme	4251	Diblemma
242142	Acrostichum	4252	Leptochilus
24215	Schizostege	4253	Dictymia
24221	Cheilanthes	4254	Selliguea
24222	Notholaena	42541	Campium
24223	Pellaea	4255	Dendroconche
24224	Dorypteris	4256	Aglaomorpha
24225	Onychium	42561	Drynaria
24226	Cryptogramma	42562	Thayeria
24227	Actiniopteris	42563	Merinthosorus
2422x	Neurosoria	42564	Photinopteris
243	Adiantum	4257	Lecanopteris
30	Oleandra	426	Phlebodium
31	Araiostegia	51	Antrophyum
42324	Acrosorus	52	Vittaria
42325	Loxogramme (Paltonium)	53	Vaginularia
		54	Monogramma

The algae, hepatics, lichens, and mosses are distributed in white and in red covers only. They are filed in their respective order alphabetically, instead of phylogenically. Since they are accommodated in only 6 cases these collections are placed in one room with the ferns.

Most of the fungus specimens are in paper packets, packages, and boxes, while some of the mushrooms are kept in bottles and jars containing formalin solution. The dried specimens are segregated in white and in red covers. Although one room with 25 cases is set aside for this collection, the specimens are still crowded. The scheme below is followed in filing these specimens:

System of Classification Phycomycetes

Order 1. Protococcales

Plasmodiophoraceae

- Family 1. Olpidiaceae
2. Synchytriaceae
Protomycetaceae
3. Chytridiaceae

Order 2. Spirogyrales (Zygomycetes)

- Family 4. Mucoraceae
5. Endogonaceae
6. Empusaceae
7. Ascoideaceae

Order 3. Vaucheriales (Oomycetes)

- Family 8. Saprolegniaceae
9. Ancylistaceae

- 10. Peronosporaceae
- Order 4. Confervales
 - Family 11a. Blastocladiaceae
 - 11b. Monoblepharidaceae
- Ascomycetes
- Order 5. Laboulbeniales
 - Family 12. Peyritschiellaceae
 - 13. Laboulbeniaceae
 - 14. Ceratomycetaceae
- Order 6. Gymnascales
 - Family 15. Endomycetaceae
 - 16. Saccharomycetaceae
 - 17. Monascaceae
 - 18. Gymnascaceae
- Order 7. Perisporiales
 - Family 19. Eurotiaceae
 - 20. Erysiphaceae
 - 21. Perisporiaceae
 - 22. Englerulaceae
 - 23. Capnodiaceae
 - 24. Trichothyriaceae
 - 25. Coryneliaceae
- Order 8. Sphaeriales
 - Family 26. Sphaeriaceae
 - 27. Hypocreaceae
 - 28. Lophiostomaceae
 - 29. Cyttariaceae
 - 30. Verrucariaceae
- Order 9. Dothideales
 - Family 31. Dothideaceae
 - 32. Myriangiaceae
 - 33. Mycoporaceae
- Order 10. Microthyriales
 - Family 34. Polystomellaceae
 - 35. Microthyriaceae
 - 36. Micropeltaceae
- Order 11. Phacidiales
 - Family 37. Hysteriaceae
 - 38. Graphidaceae
 - 39. Phacidiaceae
 - 40. Stictidaceae
 - 41. Tryblidiaceae
- Order 12. Pezizales
 - Family 42. Dermateaceae
 - 43. Bulgariaceae
 - 44. Patellariaceae
 - 45. Caliciaceae
 - 46. Chrysotrichaceae
 - 47. Collemaceae
 - 48. Peltigeraceae

- 49. Lecideaceae
- 50. Cladoniaceae
- 51. Parmeliaceae
- 52. Physciaceae
- 53. Mollisiaceae
- 54. Helotiaceae
- 55. Pezizaceae
- 56. Helvellaceae
- 57. Ascobolaceae
- Order 13. Agyriales
 - Family 58. Agyriaceae
 - 59. Exascaceae
- Order 14. Tuberales
 - Family 60. Onygenaceae
 - 61. Elaphomycetaceae
 - 62. Tuberaceae

Promycetes
- Order 15. Pucciniales
 - Family 63. Pucciniaceae
 - 64. Mylampsoraceae
- Order 16. Ustilaginales
 - Family 65. Ustilaginaceae
 - 66. Tilletiaceae

Graphiolaceae
Basidiomycetes
- Order 17. Tremellales
 - Family 67. Auriculariaceae
 - 68. Tremellaceae
 - 69. Dacryomycetaceae
- Order 18. Agaricales
 - Family 70. Hypochnaceae
 - 71. Thelephoraceae
 - 72. Clavariaceae
 - 73. Hydnyaceae
 - 74. Polyporaceae
 - 75. Agaricaceae
- Order 19. Lycoperdales
 - Family 76. Phallaceae
 - 77. Lycoperdaceae
 - 78. Hymenogastraceae
 - 79. Nidulariaceae

Deuteromycetes
(Fungi Imperfecti)
- Order 20. Phomales
 - Family 80. Phomaceae
 - 81. Zythiaceae
 - 82. Leptostromaceae
 - 83. Discellaceae
- Order 21. Melanconiales
 - Family 84. Melanconiaceae

Order 22. Moniliales

- Family 85. Moniliaceae
 86. Dematiaceae
 87. Tuberculariaceae
 88. Stilbaceae
 Dermophyta
 Sterile Mycelia
 Pseudosaccharomycetes

Growth and activities of the herbarium.—The rapid growth of the herbarium was due to the untiring efforts and outstanding ability of the efounder Doctor Merrill, who left behind him a heritage of rich accomplishment after 20 years' service in the Philippines. Through appeal of public support and cooperative work, the herbarium attained a remarkable growth so that according to some authorities it is one of the biggest in the Orient. The table below indicates its growth.

	Mounted specimens.
July 1903	5,061
August 1904	10,989
December 1906	46,000
December 1923	250,000
December 1935	300,000

Almost every nook of the Philippines has already been explored by various persons, with especial credit to the late Maximo Ramos who had collected the most Philippine materials stored in the herbarium. Besides the collections of Drs. E. D. Merrill, E. B. Copeland, C. B. Robinson, Foxworthy, Guerrero, and Messrs. Elmer, Whitford, Mearns, McGregor, and G. Edaño of the Bureau of Science, the herbarium is also indebted to Messrs. Curran, Merritt, Everett, Clark, Darling, Hutchinson, Klemme, Meyer, Barnes, Borden, and many Filipino foresters and rangers of the Bureau of Forestry. Numerous specimens were received from private collectors, among them were Rev. Fr. Vanoverbergh, Rev. Fr. Sanchez, Messrs. Wenzel, C. F. Baker, Loher, Weber, Topping, and Lete, and Mrs. M. S. Clemens, who is still actively collecting in spite of age and financial handicap.

Most of the foreign specimens were obtained through exchange with duplicates from at least 80 different institutions. This exchange proposition still continues, but sometimes valuable collections are purchased whenever fund is available. The following institutions are exchanging materials with the herbarium:

- Singapore Botanic Garden, Strait Settlements.
 Botanical Gardens, Buitenzorg, Java.

University of California, Berkeley, California.

University of Michigan, U. S. A.

Lignan University, China.

Royal Botanic Garden, Kew, England.

Peradeniya, Gardens and Herbarium, India.

Imperial University, Kyoto, Japan.

Prag, Czekoslovakia.

Mazatlan, Sinoloa, Mexico, and many other institutions.

The herbarium is not only confined to the collection and exchange of botanical specimens and the determination of plants brought in or received by mail but also is responsible in giving information regarding the economic importance of certain species especially when cases of poisoning involving plants are reported. Almost every day information regarding plants is given out to various sources. Occasionally botanists of foreign institutions request loan of herbarium specimens to supply their investigation studies. Below in a list of specimens loaned abroad:

Begoniaceae	Prof. Setchell, University of California.
Rutaceae	Dr. Tanaka, Formosa.
Urticaceae	Dr. Winkler, Breslau, Germany.
Dipterocarpaceae	Dr. Foxworthy, University of California.
Mosses	Dr. Khanna, Rangoon, Burma.
Ericaceae	Dr. J. J. Smith, Rjks Herbarium, Leiden.

The different publications based on Philippine plants are valuable contributions of the herbarium towards the botanical progress of the Philippines. The willingness to lend certain groups of the herbarium materials to foreign experts with the agreement to publish their papers in the Philippine Journal of Science highly speaks of cooperative work which is conducive to the solution of various scientific problems of different countries. In December, 1935, Dr. C. F. Symington, of the Straits Settlements, came to Manila to study the Philippine dipterocarps, and recently Doctor Syun'iti Sasaki, Formosa, was in the city. These two foreign botanists spent several weeks in Manila to avail themselves of the facilities obtaining in the Bureau of Science herbarium.

The fate of the herbarium.—The organizer of the herbarium Doctor Merrill was the curator from 1903 to November, 1923. He left for the States to accept a better and more responsible position. He was succeeded by the late Dr. Leon Ma. Guerrero, who, upon his retirement, was succeeded in turn by Dr. Eduardo Quisumbing. On December 16, 1933, the botanical division was fused with the Philippine National Museum and the herbarium became known as the Philippine National Herbarium.

HERBARIA OF THE UNIVERSITY OF THE PHILIPPINES

College of Liberal Arts.—The Department of Botany is in charge of the herbarium of the College of Liberal Arts. This herbarium was organized in 1911 when the department of Botany was founded. When Doctor Shaw was made acting chief of the department, he brought with him the botanical collections of his students of the Philippine Normal School. These collections constituted the first herbarium of the University. Through the cooperation of botany students and of members of the staff, particularly the heads, like Doctors Merrill, Brown, and Santos, the herbarium has now accumulated around 4,000 mounted specimens, consisting of algae, fungi, mosses, ferns, and phanerogams distributed in 18 cases which are similar to those in the National Herbarium. The specimens are prepared in the same manner as those in the National Herbarium, but are alphabetically arranged into families, genera, and species. Foreign exchange with the University of Michigan, with Tokyo Imperial University, and with other botanical institutions abroad has recently been established through the initiative of Professor Bartlett, and fungi and mosses are being sent to specialists for identification.

Agricultural College herbarium.—This herbarium is quartered in the Department of Plant Physiology. It was founded in 1910 by Dr. Copeland with the cooperation of Doctors Merrill, Gates, Foxworthy, and Holman, and Professor Curran. It has in its record 24,642 mounted specimens of Philippine and foreign materials. The preparation of the specimens is patterned after that of the Bureau of Science, but they are arranged and distributed in 16 cases after the method of Engler and Prantl. In the herbarium are found the type specimens of Doctors Quisumbing and Teodoro in connection with their studies on Philippine bananas. In addition there are about 12,000 mounted specimens of rice species and varieties contained in 12 new cases and these are being studied by Doctor Juliano. Most of the specimens were collected by the members of the staff with the cooperation of students taking courses in the Department of Plant Physiology. Only mosses, ferns, and flowering plants are found in this department; the fungi are being kept in the Department of Plant Pathology.

The Forest School herbarium.—Before 1916 the School of Forestry used the herbarium of the Agricultural College. By the provision of Act No. 2578 the school was founded, and, through the initiative of Doctor Foxworthy, a separate herbarium was organized by acquiring the arborescent specimens of the college herbarium, leaving only the herbaceous species. In order that all forms of the plant kingdom would be represented,

both college and school started to develop a complete herbarium of their own.

At present the school has around 4,000 mounted specimens, Philippine and foreign, distributed in 6 cases, 4 of which are made of red wood. Of the foreign specimens about 700 were donated by Doctor Salvoza. These are the duplicates of his collection for the Arnold Arboretum, Harvard University. The cases and the manner of preparation of specimens are patterned after those in the Bureau of Science. The arrangement is phylogenetic, but the distribution is different, being in the following order: ferns, gymnosperms, dicotyledons, and monocotyledons.

MANILA COLLEGE OF PHARMACY AND DENTISTRY

The herbarium of the Manila College of Pharmacy and Dentistry was organized in 1916 with the collection of Dr. Leon Ma. Guerrero numbering about 2,000 specimens as the nucleus. The collection was formerly in the College of San Jose but the donor transferred it to the Manila College of Pharmacy. Included in the donation are about 100 sheets of mounted specimens (31.5 x 22 cm) also donated by Zaragoza, Colegio del Salvador, Spain, in 1893.

At present the herbarium has around 10,000 specimens mounted on sheets (28 x 42 cm) which are thicker than the mounting sheets of the National Herbarium. Most of the specimens were collected, mounted, and identified by the botany students. Each specimen is provided with a field label which serves also as identification label. This label is pasted at the lower right-hand corner of the mounting sheet. Due to lack of space only the collection of Doctor Guerrero is kept in two cases having glass doors; the rests are yet unarranged and undistributed.

NATIONAL UNIVERSITY HERBARIUM

The herbarium of the University is under the College of Pharmacy. It was established in 1922 by Mrs. Maria V. Gutierrez, head of the Botany Department. Most of the specimens were donated by pharmacy students who mounted them in the same way as those in the College of Liberal Arts, University of the Philippines. There are at present about 1,000 mounted specimens in the National University Herbarium which are alphabetically arranged in cabinet cases.

UNIVERSITY OF SANTO TOMAS HERBARIUM

This herbarium is under the College of Pharmacy, and quartered in the Botany Laboratory. It was organized in 1928 by *fin* Ramos, with the backing of Dean Fr. Dominguez. The col-

through the initiative of Dr. Leon Ma. Guerrero and Dr. Joselections of the Botany III classes of 1927-1928 and 1928-1929 formed the nucleus of the herbarium. From that time on each student donated from 1 to 10 specimens, mostly rare species, and now there are about 7,000 mounted specimens.

Students prepared all the specimens by mounting them on Manila paper (22 x 14 inches). The specimen is pasted on the inner sheet, with the field label at the top left-hand corner, and the identification label is gummed at the lower right-hand corner. The family is written in full on the identification label, with the scientific name below it. The specimens are grouped into species, genera, and families; the last are distributed phylogenetically in four cases which are made of tangle. Each case is 200 cm high, 150 cm wide, and 50 cm thick, and has 48 pigeon holes patterned after those of the National Herbarium. Mostly phanerogams and a few ferns which were collected in the Philippines are the contents of the herbarium.

ADDENDUM

The Bureau of Forestry considers it a necessity to keep a collection of arborescent species in connection with the study of wood technology. For this reason the bureau is furnished with duplicates of its collections that are sent and prepared in the Bureau of Science. The herbarium of the Bureau of Forestry has now accumulated 1,232 mounted specimens which are distributed in one herbarium case. Those specimens are arranged alphabetically into families, genera, and species, like those in the herbarium of the College of Liberal Arts, University of the Philippines.

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SCIENCE AND ENGINEERING

Alignment Chart

By M. Montaner, C.E.

It cannot be denied that graphs and diagrams play an important role in the development of modern science. Almost every profession recognizes the importance of these contrivances in the solution of problems from the simplest to the most intricate.

If you have ever been seriously ill, you might have observed how your body temperature, heart pulsation, blood pressure, etc., were recorded daily by the physician in the form of graphs to assist him in the proper and exact diagnosis of your ailment. If you open a book in economics you will see numerous and varied examples of graphs which probably will show you the fluctuations in the population, in the volume of exports and imports and in the death and birth rates of a community or of a nation. It is, however, in the field of engineering where interesting and valuable examples of all kinds of graphical methods can be found.

Cognizant of the fact that the graphical solution is easier and more expeditious than the analytical method of attack, engineers have developed certain kinds of charts and diagrams which solve automatically and without any effort or mental strain on the part of the computer any equation even how complicated it is. It is precisely this property of the charts that makes it an ideal tool to structural designers and to a certain extent to surveyors and mechanical engineers.

It will be needless to say that a discussion of the graphical solution of all kinds of equations is unnecessary because not all of them have a practical application. This article, therefore, will just explain the construction of certain charts which according to the opinion of the writer are practical and valuable from the engineering point of view; but its scope will be limited only to the graphical solution of equations involving three or more variables.

Before proceeding further, however, the writer would like

to warn the reader of the danger of relying too much on the results obtained from charts and diagrams, because they can never give exact values however elaborate and accurate the charts may be. They should be applied only where approximate results are expected. In structural design, for example, small errors can be tolerated without endangering the structure. In rough topographical surveys an error of ten or twenty centimeters in the elevation, and thirty or fifty centimeters in the distance of a point will not mar nor change the general characteristics of a topographical map. In cases like these and in any other similar cases, charts may be used, but they should never be applied where exact results are required unless approximate values of the variables are needed as an aid in the analytical solution of an equation.

The construction of alignment charts will now be described: **FIRST METHOD.**

Alignment Chart for Three Variables. Any equation involving three variables x , y , and z , which can be thrown into the form

$$U + V = T \quad (1)$$

where U is a function of x alone, V a function of y alone, etc., can be represented graphically by a very convenient form of diagram called an alignment chart. This method is based in the similarity of triangles, a simple theorem of plane geometry.

In the simplest form of an alignment chart for three variables there are three axes, along which the values of x , y , and z are plotted in such a way that any three values of x , y , and z , which satisfy the given equation are represented by three points which lie in a straight line. Therefore, if the values of any two variables are given, the corresponding value of the third variable can be found by simply setting a straight edge thru the two given points and reading the value of the point where it cuts the third scale.

Selection of Moduli to Fit Size of Paper. Assume U' and U'' as limiting values of function U that will likely be expected, and let L be the length of the available space on the paper. To represent the values of function U from U' to U'' within a scale of length L , each value of Function U will have to be multiplied by a factor f_1 . If U' is the lower and U'' the upper limit of function U then f_1 will be given by the ratio $L/(U'' - U')$. Likewise, a factor f_2 will be required for values of V from V' to V'' , and f_2 will be given by the ratio $L/(V'' - V')$.

Plotting the Two Scales. Draw two parallel vertical axes at any distance " c " apart and a horizontal line at any convenient distance from the bottom of the paper cutting both axes at points O_1 and O_2 . On the first axis, marked x , starting

from point O_1 as origin lay off distances $x = f_1 U$ for successive values of x , labeling each point thus plotted with the corresponding value of x . Similarly, on the second axis, marked y , starting with point O_2 as origin, lay off $y = f_2 V$ for successive values of y , labeling each point with the corresponding value of y .

Plotting the Third Scale. The position of the third scale can be determined by either of the two methods explained below.

First Method. Compute the value z_1 corresponding to any convenient values x_1 and y_1 . Using the value z_1 and any other convenient value x_2 find y_2 . Draw two straight lines connecting x_1, y_1 and x_2, y_2 (see Fig. 1) and label with the value z_1 the point where they intersect. Draw a third line through point z_1 parallel to the two scales already plotted. The position of the third scale is thus located.

Second Method. In this method the position of the third scale is directly determined by the relation

$$a = \frac{f_1 c}{f_1 + f_2} \quad \text{II}$$

where $a =$ the distance of the z -scale from the x -scale.

The above equation is simply a consequence of the former method as will be explained in the next paragraph.

Let f_3 be the corresponding factor of function T to make the x -scale of the same length L as

the other scales, and let $d_x, d_y, d_z, D_x, D_y,$ be the distances of $x_1, y_1, z_1, x_2,$ and y_2 respectively from the origins.

$$\begin{aligned} \text{Then } x_1 &= f_1 U_1 = d_x \\ y_1 &= f_2 V_1 = d_y \\ z_1 &= f_3 T_1 = d_z \end{aligned}$$

From the above you get $U_1 = d_x/f_1; V_1 = d_y/f_2; T_1 = d_y/f_3$
Substitute these values in equation (I)

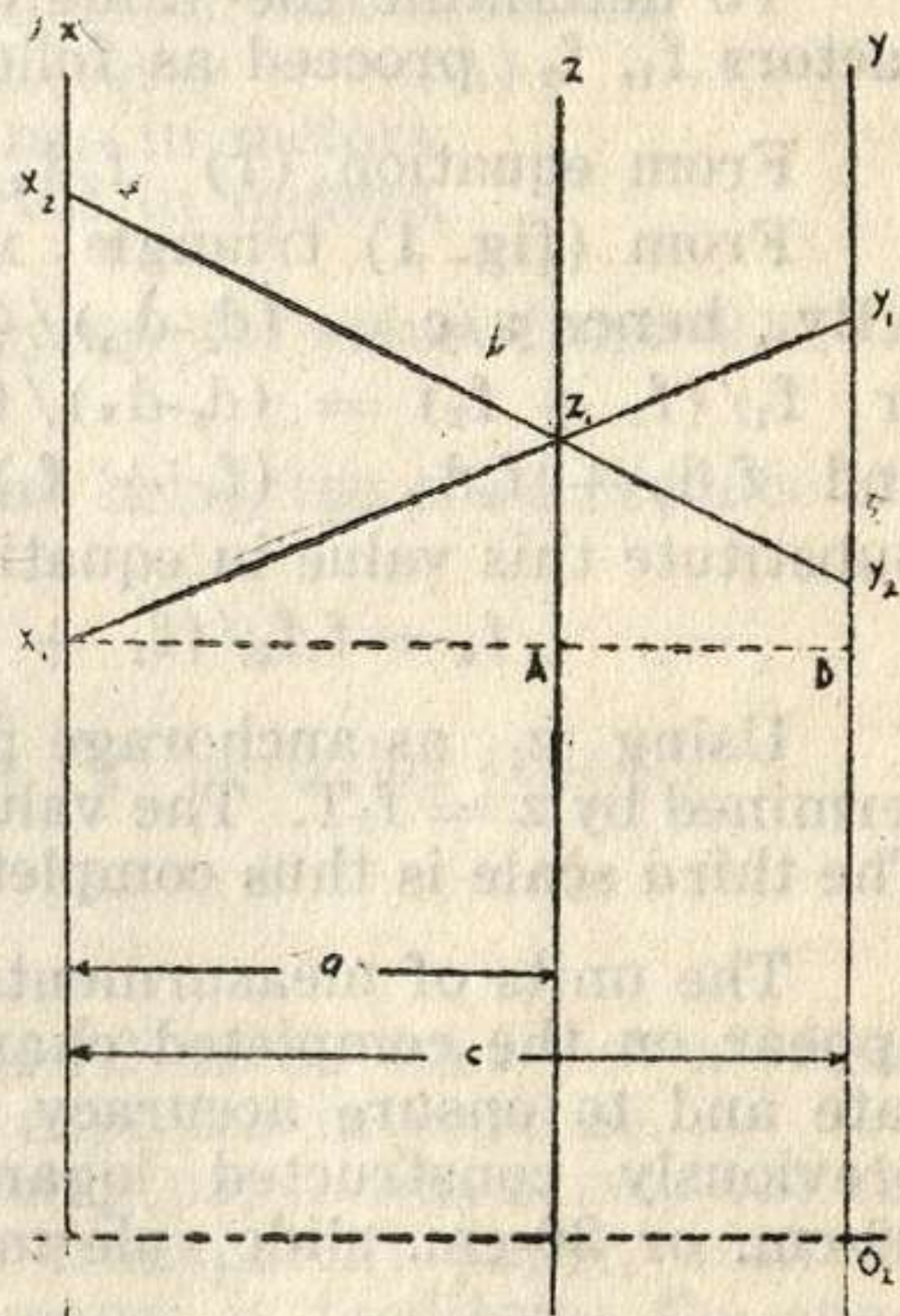
$$d_x/f_1 = d_y/f_2 = d_z/f_3 \quad (1)$$

Similarly

$$f_1 U_2 = D_x = x_2$$

$$f_2 V_2 = D_y = y_2$$

or $U_2 = D_x/f_1; V_2 = D_y/f_2; T_1 = d_z/f_3; f_3 T_1 = d_z = z_1$



Substitute also these values in equation (I)

$$D_x/f_1 + D_y/f_2 = d_z/f_3 \quad (2)$$

Combine equation (1) and (2)

$$d_x/f_1 + d_y/f_2 = D_x/f_1 + D_y/f_2$$

$$\text{or } (d_y - D_y)/f_2 = (D_x - d_x)/f_1$$

$$f_1/f_2 = (D_x - d_x)/(d_y - D_y)$$

but $(D_x - d_x)/(d_y - D_y) = a/b$ (Triangle $x_1x_2z_1$ similar to $y_1y_2z_1$)

Hence $f_1/f_2 = a/b$

$$\text{or } f_1/(f_1 + f_2) = a/(a + b)$$

$$a = f_1c/(f_1 + f_2) \quad \text{II} \quad c = (a + b)$$

To determine the value of f_3 in terms of the other two factors f_1, f_2 proceed as follows:

$$\text{From equation (1) } f_2d_x + f_1d_y = f_1f_2d_z/f_3 \quad (3)$$

From (fig. 1) triangle x_1Az_1 is similar to triangle x_1By_1 , hence $a/c = (d_z - d_x)/(d_y - d_x)$

$$\text{or } f_1/(f_1 + f_2) = (d_z - d_x)/(d_y - d_x)$$

$$\text{and } f_1d_y + f_2d_x = (f_1 + f_2) d_z$$

Substitute this value in equation (3) and solve for f_3

$$f_3 = f_1f_2/(f_1 + f_2) \quad \text{III}$$

Using z_1 as anchorage plot along the z -axis the scale determined by $z = f_3T$. The value of f_3 is found from equation III. The third scale is thus completed and the chart is ready for use.

The units of measurements for x, y , and z (which do not appear on the completed chart) must be the same. To facilitate and to ensure accuracy in the construction of the chart, previously constructed logarithmic scales or the scales of a 20-cm. or 30-cm. slide rule may be used.

Rapidity in the use of the chart depends mainly on the skill with which the eye can estimate the values of the various divisions on the scale; expertness in this respect comes only with practice.

In order to make the construction of the chart clear to the readers an illustrative example will be given.

ILLUSTRATION

Short Cut for Determining Distances by Stadia Method.

In rough topographical survey of watershed, of dam or bridge site, and of proposed road where great accuracy is not required and time limited, the graphical method of figuring distances has been found by the writer to be more convenient than the use of tables.

The chart shown in the opposite page gives an easy method for figuring both horizontal and vertical distances. It solves the two stadia equations mechanically without any mental effort.

The construction of this chart is as follows:

The horizontal distance is found from the equation,

$$z = 100.x.\cos^2y + K.\cos y \quad (A)$$

where z = horizontal distance in meters,

x = stadia rod interval in meters,

y = vertical angle,

and K = a constant, varying in value from 0.25 to 0.30 meter.

By neglecting the last term for being too small, reduce the equation to the simple form:

$$z/100 = x.\cos^2y$$

Take logarithm of both sides

$$\log (z/100) = \log (x) - 2.\log (\cos y)$$

Here $U = \log(x)$,

$V = 2.\log(\cos y)$,

and $T = \log (z/100)$

A range of values for "y" from 3° to 30° and for "x" from 0.30 to 2.0 meters is likely to be expected in practice.

An ordinary piece of typewriting paper will serve, but the writer recommends the use of a transparent paper, such as, tracing paper or tracing cloth because it facilitates the construction of the scales as will be explained later.

Scales up to 25 cm. long are preferable, but for lack of space the chart will be limited to 20 cm. scales to fit the size of this magazine.

If $L = 20$ cm. and $c = 8$ cm.

$$f_1 = 20/(\log 2 - \log 0.3) = 25.$$

$$f_2 = 20/2(\log \cos 3^\circ - \log \cos 30^\circ) = 160$$

$$f_3 = 25 \times 160/(25 + 160) = 21.62$$

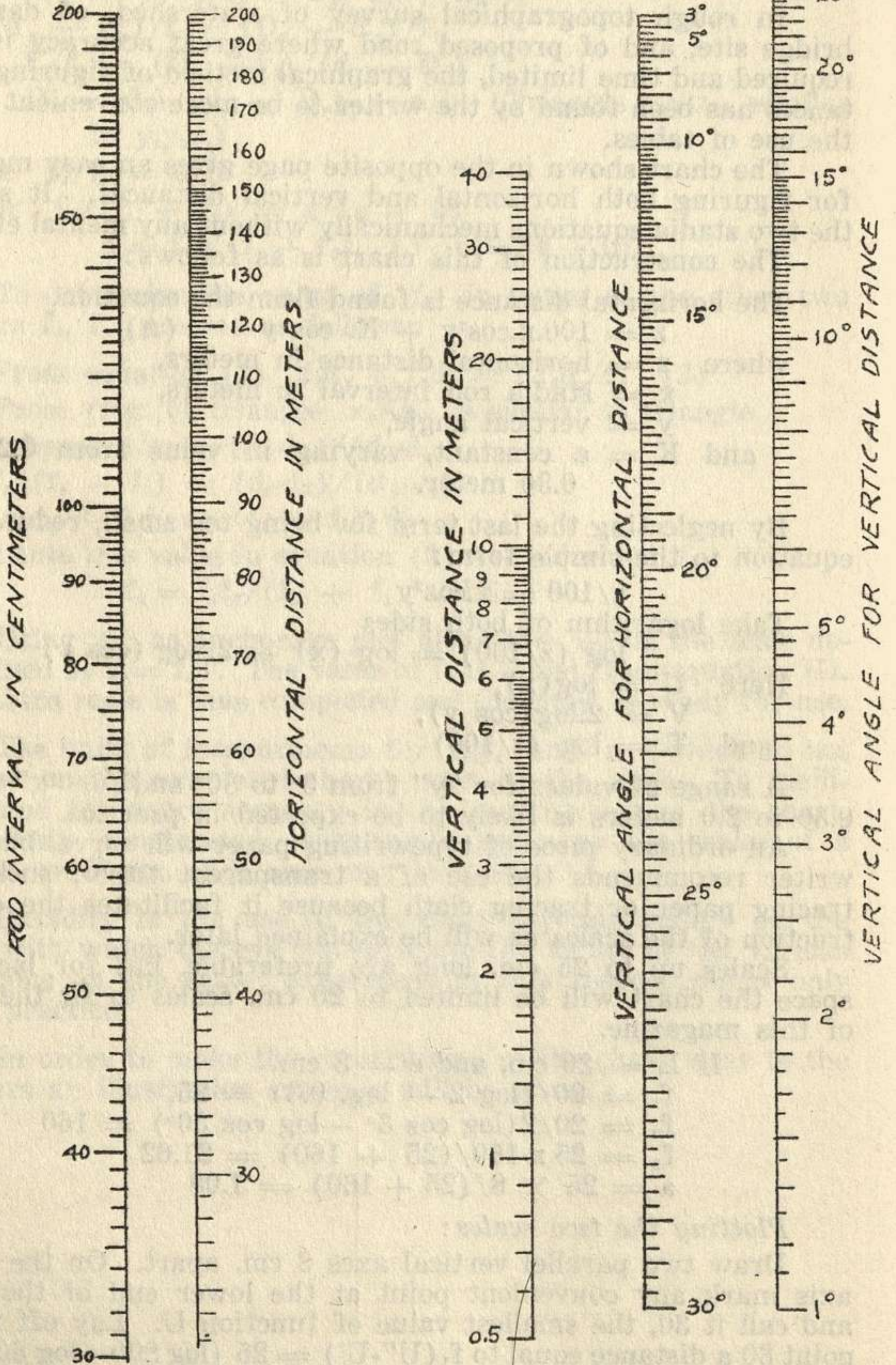
$$a = 25 \times 8/(25 + 160) = 1.08$$

Plotting the two scales:

Draw two parallel vertical axes 8 cm. apart. On the first axis mark any convenient point at the lower end of the line and call it 30, the smallest value of function U. Lay off from point 30 a distance equal to $f_1(U'' - U) = 25(\log 200 - \log 30) = 20.57$ cm. Label this point 200. To plot the other points of the scale, draw an unlimited line making any convenient angle with

CHART-I-

FOR DETERMINING DISTANCES & ELEVATIONS
BY STADIA METHOD



the former. Set a 20 cm. slide rule under the paper and along the line. Make point 30 coincide with point 3 of scale D of the slide rule. Mark on the line all points of scale D from 3 to 10 and from 10 to 20, and by cutting proportional segments, transfer them all to the x-scale. The x-scale is thus completed.

A similar procedure may be adopted in plotting the y-scale if a previously constructed logarithmic scale for cosines of an angle is available; otherwise a table shall be prepared, such as, the one herein illustrated, giving the distances from the origin for the successive values of y .

Note that the y-scale on the chart is inverted, that is, the origin is placed at the top due to the fact that the value of "z" in equation (A) increases as the value of "y" decreases. The scale of an alignment chart is also inverted when it represents a negative function.

TABLE FOR VALUES OF FUNCTION V

Angles	3°	5°	10°	15°	20°	25°	30°
Log cos y	9.99940	9.99834	9.99335	9.98494	9.97299	9.95728	9.94753
$(V'-V'')/2$		0.00106	0.00606	0.01446	0.02651	0.04212	0.06187
$f_z(V'-V'')$		0.339cm	1.939	4.627	8.480	13.472	19.798

Plotting the Third Scale

Draw the third axis parallel to the x-scale and at a distance of 1.08 centimeters. From equation (A) $z_1 = 70.64$ cm. when $x_1 = 80$ cm. and $y_1 = 20^\circ$. Set a straight-edge at 80 on the x-scale and at 20 on the y-scale, and label the point where it cuts the third scale with the value of $z_1 = 70.64$. Using this point as anchorage plot the limiting value of "z". The smallest and the greatest values of z may be found from equation (A) by substituting the smallest and the greatest values of x and y respectively in the equation. In plotting the intermediate values of "z" use the same method as already explained in the construction of the x-scale.

CHART FOR DETERMINING THE VERTICAL DISTANCE.

The vertical distance is found from the equation

$$s = 50. x \sin 2y = K. \sin y \quad (B)$$

where s = vertical distance in meters,

x = rod interval in meters,

and y = vertical angle.

By neglecting the last term for being too small reduce the equation to the simpler form,

$$s/50 = x. \sin 2y$$

Take logarithm of both sides

$$\log (s/50) = \log (x) \log (\sin 2y)$$

In this equation $U = \log (x)$,

$$V = \log (\sin 2y),$$

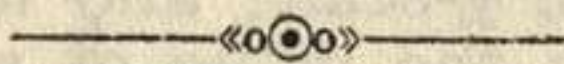
$$\text{and } T = \log (s/50)$$

The chart for vertical distances may be constructed separately, but as functions U of both stadia equations are equal because they involve a common variable, the rod interval "x", the writer found it simpler and more convenient to construct only one chart for figuring both horizontal and vertical distances.

With the illustrations given in the previous paragraphs the writer presumes that the reader will find no difficulty in understanding the construction of the two additional scales. Further explanation, therefore, will not be necessary.

(To be continued)

Angle	10'	20'	30'	40'	50'	60'	70'	80'	90'
10'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
80'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
90'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



NEWS AND NOTES

UNIVERSITY CURRENT NEWS

Faculty of Philosophy and Letters Celebrate Ruby Jubilee.—On the occasion of the Ruby Jubilee of the Faculty of Philosophy and Letters, the students of the said college presented a program on the feast of the Patron Saint Catherine, Nov. 25, at the paranympus. The Rev. Fr. Rector Silvestre Sancho, O.P., acted as guest of honor. Enlightening speeches were delivered by Fr. Eugenio Jordan, O.P., Vice-Rector of Santo Tomas and Dean of the Faculty of Philosophy and Letters, and Fr. Rector Sancho who talked on the responsibilities of the students of philosophy and journalism. "The Night Club Girl", a play in one act was presented, and included in the well attended program were a series of tableau, culture review and piano selections. To complete its Ruby Jubilee commemoration, the students have published a "Memorabilia" of the college which will come out for distribution this month.

U. S. T. Host in Annual Junior Conference.—Santo Tomas played host to the two-day second Annual Junior Conference on secondary education held late last November, with the delegates from the colleges of education of the University of the Philippines, Centro Escolar University, Far Eastern University, National University, St. Escolastica's College, University of Manila, and local students attending. Mass, formal forums for educational problems where each of the represented universities submitted problems for discussion, reports from the different sections, and a tea party tendered by local students of the College of Education (hosts), occupied the two-day affair. An address by His Grace, Most Rev. Michael O'Doherty, Archbishop of Manila, closed the conference. Prominent men and women in the educational field that included Dr. Edward L. Hall, president of the national vocational guidance association; Dr. Lino S. Castillejo, superintendent of private schools and colleges, Dr. Rafael Palma, chairman of the national council of education, and many others like Dr. Josefa Gonzalez figured in the conference.

Local Women Physicians Lead In Board Exams.—The local College of Medicine lived up to expectations when women physicians won the first five places in the preliminary physician examination given recently. First and second places in the physician test were captured by Tomas F. Acosta and Abelardo S. Magat, this year's local graduates. Ramon Saez, another Thomasian, placed third.

In the preliminary examinations, 25 local students all obtained more than 90%. Liwayway R. Reyes, 95.6; Carmen G. Lopez, 95.49; Evangelina G. Soto, 95.4; Leonora E. Pantig, 95.8; and Evangelina Macaraeg, 93.8, were the first five topnotchers. Forty-six other U.S.T. students emerged with very favorable ratings.

70 NOMINATED BY POPE FOR PONTIFICAL SCIENCE ACADEMY

The old Academy of Sciences was founded by Frederick Cesi in 1603, and was reformed successively by Pope Pius IX in 1847, and Pope Leo

XII in 1887. In the early years of his Pontificate, Pope Pius XI established the Academy on a site in the Vatican Gardens so that he would be able more readily to keep in touch with its labors and to give its members the encouragement of his more intimate interest. Now His Holiness has instituted a radical reform of the Academy in accordance with the needs of the times. The *Motu Proprio* promulgates the Academy's statutes for the future.

The document says:

"Among the many consolations with which Divine Goodness has rejoiced the years of Our Pontificate, We like to enumerate those afforded by the spectacle of so many men who have dedicated themselves to the study of experimental sciences and who have changed their attitude and their intellectual course in regard to religion.

"It is unfortunately true that, in times not so long gone, some learned men, for reasons other than love of truth, have abandoned as prodigal sons the paternal roof of religion. Especially during the past century there were those who thought with false and rash arguments that the findings of human science were in open contradiction to the teachings of divine revelation.

"It is, however, a source of profound joy to Our heart that in Our day these prejudices are so evidently outmoded that there are now few who have really studied the positive sciences and who continue to sustain this error. On the contrary, in the course of Our Pontificate many scientists, among whom were men of the highest worth and standing, have come to Rome from distant lands in order to participate in scientific congresses and have come into Our presence to express their devotion to Us or later to the authority which lives forever in the Apostolic See, even though exercised by an unworthy successor of St. Peter. It has happened at times that among those there were some who, though not possessing the gift of the Catholic Faith, believe it their duty to pay their respects to Our See, which is the chair of truth. There are those who, speaking in their own names and in the names of their colleagues, did not hesitate to say that true science leads, prepares and directs souls to the Faith."

The Academicians whom the Holy Father has nominated have been chosen from among the most outstanding scholars of different nations in the fields of physical, mathematical and natural sciences, men whose worth is recognized because of their publications and their work. With the Academy destined to be a scientific senate of the Church, the members are expected to honor their name as Pontifical Academicians by austere and noble work to the increase of knowledge and thus to render religious homage of reason to Supreme Truth, to the Creator.

The members of the Academy *De Nuovi Lincei*, which now becomes the Pontifical Academy of Sciences retain their titles as honorary, ordinary or corresponding members and in the new institute enjoy wide privileges in conformity with the statute promulgated at the same time.

His Holiness concludes by blessing the Pontifical Academy and all its members, especially Father Augustine Gemelli, O.F.M., whom he names President.

Six American scientists, three of them non-Catholics, are among the 70 members personally nominated by His Holiness Pope Pius XI to the Pontifical Academy of Sciences, reformed by the *Motu Proprio* "In Multis Solaciis," published recently.

The United States scientists nominated by the Holy Father to be Pontifical Academicians are:

George David Birkhoff, Professor of Mathematics at Harvard University.

Dr. Alexis Carrel, Professor of Biology in the Rockefeller Institute, New York.

Rober Andrews Millikan, Director of the Physics Laboratory of the California Institute of Technology.

George Speri Sperti, Director of the Institutium Divi Thomae of the Catholic Athenaeum of Ohio.

Hugh Stott Taylor, Professor of Chemistry at Princeton University.

Dr. Brikhoff, Dr. Millikan and Dr. Morgan are non-Catholics.

Of the remaining Academicians named by Pope Pius XI 33 are Italians, five French, five German, five Belgian, four Dutch, three English, two Austrian, one Czechoslovakian, one Polish, one Danish, one Argentinian, one Portuguese, one Norwegian and one Chinese.

A PLANT FOR POWER ALCOHOL

The first American plant for the production of alcohol from low-grade farm produce, for use in producing an alcohol-gasoline blend motor fuel, was formally honored at the meeting of the Atchison, Kans., Chamber of Commerce.

The plant will produce 10,000 gallons of anhydrous alcohol daily from 4,000 bushels of corn. Thirty-two tons of protein cattle feed will be a by-product. Other farm products, such as low-grade oats, barley, wheat and potatoes, can also be utilized for alcohol production. The material employed at any given time will depend on the crop conditions.

The ethyl alcohol produced by the operators, the Bailor Manufacturing Company, will sell for 25 cents a gallon and the final blend of alcohol and gasoline sells for the same price as a premium straight gasoline of comparable octane rating. Standard approved denaturants will be used to make the alcohol unusable for beverage purposes.

Speakers at the meeting included scientific men from the chemical, agricultural and medical field. Dr. Arnold Osterberg, of the Mayo Clinic, Rochester, Minn., discussed the hazards of health caused by the carbon monoxide content of automobile exhausts burning straight gasolines. The much lower carbon monoxide content of the exhaust from an alcohol-gasoline blend fuel is a medical point in its favor. Dr. William Hale, consulting chemist of Washington, D. C., predicted that the establishment of the new plant in Atchison marks the dawn of the alcohol era in motor fuels. Dr. Leo Christensen, biological chemist in charge of the Atchison plant, described the benefits to the farmer from the use of alcohol as a gasoline blend. A 10 per cent. alcohol-gasoline fuel, said Dr. Christensen, has all the advantages of ordinary straight gasoline in a purely technical

sense, and in addition, on the economic side, it has the merit of providing the farm with a new, untouched market for low-grade farm products which are now so nearly valueless that it is almost unprofitable to remove them from the fields. And the poorer a given crop may be for food purposes, he pointed out, the greater is the yield of alcohol from it.

RIGHT-AND LEFT-HANDEDNESS

Dr. Samuel T. Orton, of Columbia University, who recently gave the first of the 1936 Salmon Memorial Lectures at the New York Academy of Medicine, pointed out the right-or left-handedness of a child gives a key to which is the master half of the brain controlling the development of the all-important language abilities.

Although either side of the brain is capable of assuming charge of the language abilities in an individual, only one side actually engages in this task. The other side is either useless or at least unused. And the active side of the brain is always the side opposite to the individual's master hand.

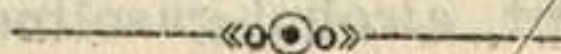
The whole control of speech, reading and writing, and hence practically all communication of an individual with his fellow men is concentrated in this one side of the brain.

The baby at birth starts life with no superiority of either hand or, as far as can be determined, of either side of the brain. He does have an hereditary tendency toward the development of superiority of one or the other side.

Dr. Orton stated that "the brain centers which control the language faculty are not open to the influence of training, but the handedness of an individual is." Usually the training is toward use of the right hand because most adults are right-handed, and also because of a prejudice against left-handedness as revealed in such words as "sinister," and the French "gauche."

Dr. Orton has found only three cases where right-handed children were trained to use the left hand. "In one, the mother herself became confused in facing the child across the table as to which was the child's right hand, and consistently taught the youngster to use the left, under the impression that she was training the child as a right-hander. The other two cases were those of boys trained on the left side by their fathers in the effort to make baseball pitchers of them. Both efforts failed."

Dr. Orton indicated that failure of either side of the brain to assume dominance may lead to language difficulties in the children. He said: "The existence of a series of intergrades between right-and left-side preferences in handedness, eyedness and footedness implies that comparable intergrading may exist between the two hemispheres of the brain in those areas which control language, thus giving rise to developmental disorders. The striking concurrence of left-handedness, of motor intergrading and of various types of language disorders in certain family stocks, strongly supports this assumption."



EXCHANGES

THE CADUCEUS, a Hongkong University Medical Journal, brings in the superb 1936 issue the following interesting articles:

1. Lindsay Ride of the Department of Physiology, essays a new method on the sedimentation of Red Blood cells by photographic method and on analysis of the results obtained he concludes that the old method of measuring the sedimentation rate should be superseded by the graphical method from which can be estimated three simpler constants, the aggregation time, the sedimentation time and the aggregate sedimentation rate.

2. The same author, in a curious, article, scrutinizes on certain epidermal patterns in man, like the hair patterns over the occiput, and he believes that such data can be utilized to classify such patterns into definite types, or to be considered as a racial characteristic, or a genetic inheritance which may be traced in succeeding generations.

3. Raymond H. S. Lee, brings out an interesting chapter in the history of medicine in his article entitled "Pillars of XIXth Century Medicine." He confined his accounts however, mostly in the famous achievements of English physicians, especially those who besides their prominence in medicine excelled in letters.

CENTRAL BLATT AND SOCIAL JUSTICE, Vol. 29, No. 6.—Donoso Cortes, A Christian Statesman and Political Philosopher (II)—A staunch defender of the Catho-

lic faith ever since his conversion Donoso Cortes not only abandoned his Liberalistic principles but wrote much and well to show that atheistic Liberalism and Socialism—two stirring movements of his age—were completely impotent in solving the problem of human destiny and human society. He furthermore demonstrated how sterile and dangerously intended to disrupt human society are the systems which avoid "facing the decisive issues of God." In short, the author, Dr. Goetz Briefs concisely discusses the nature and characteristics of Donoso's writings and lectures in this article. **Cooperation Reduces tolls in Marketing Livestock** by L. S. Herron — In this article the author who has successively dwelt on the methods of handling livestock in such a way that the Farmers' economic interests be duly represented, insured and promoted, traces and describes with ability the establishment and effects upon farmers' livestock interests of such developments and organizations (in the last 40 years) as the cooperative shipping associations, cooperative livestock selling agencies on central markets, truck transportation, direct buying of livestock, and hopefully looks forward to a further development, the cooperative packing, that will serve, as he puts it, "a 'yardstick' in the control of margins and profits."

A well-drawn description of one aspect of Farmers' interests.

J. L.

"GREGORIANUM" Fasciculus III, 1936.—El tratado inédito "De

Gratia" del Cardenal Juan de Lugo según un códice salmantino por L. Gomez Hellin.—**Fides Catholica S. Ioannis Chrysostomi et recens quodam opus auctoris orthodoxi**, auctore T. Spacil, S.J., **Die Uebersetzungen der aristotelischen Metaphysik in der Werken des Hl. Thomas von Aquin**, von F. Pelster, S.J.—**La data du sermon de saint Augustin "in psalmum 31"** (ML. 36, 257-275) pour J. De Blic, S. I.—**The Vulgate Text of St. Thomas's Commentary on the Ethics**, by L. W. Kesler, S.J.

UNIVERSIDAD. — Zaragoza, Abril-Junio de 1936. **El Municipio oscense de antaño**, por Ricardo del Arco, Archivero, Bibliotecario y Arqueólogo, C. de la Academia de la Historia y Cronista de Huesca. Estudia los siguientes puntos:—Las Junterías.—El Municipio.—El Justicia local.—El Concejo.—Cargos municipales.—Ordenanzas y estatutos.—El Juez Albarráneo.—Jurisprudencia de la ciudad.—Los consejos.—Visitadores reales.—Bienes y rentas.—Cartas de vecinidad.—Actividades concejiles.—La Casa Consistorial.—Escudo de armas de Huesca. Notas estadísticas de población.—El archivo de la ciudad.—Documentos interesantes. — **Alteraciones de las Comunidades de Teruel y Albarracin durante el siglo XVI** por Martin Almagro Bash, Profesor Auxiliar de la Facultad de Letras de Madrid. Estudia el articulista en esta primera parte de su trabajo la organización de las comuni-

dades de Teruel y Albarracin, y el origen de los pleitos con el Rey.—**Concepto del proceso y del derecho procesal civil** por L. Prieto Castro, Este artículo es el primer capítulo de un sistema de Derecho procesal civil.—**Contribución al estudio de los préstamos que se amortizan por medio de rentas variables en progresión aritmética**, por Felix Correa. Catedrático de la Escuela Profesional de Comercio de Zaragoza.—**Método para la conservación de piezas anatomo-patológicas**, por Augusto Muniesa Belenguer, Profesor asociado de Patología Quirúrgica. Estudia el articulista las siguientes deformaciones: Polidactilia; ectrodactilia; Ectromelia; clinodactilia; atromelia longitudinal; mano hendida. Cada caso aparece ilustrado con radiografías.—**Sobre Trigonometría hiperbólica**, por Gabriel Galan, Catedrático de la Facultad de Ciencias de Zaragoza. Estudia principalmente las relaciones entre las funciones circulares y las hiperbólicas y sus respectivas derivadas.—**Algunas representaciones geométricas usadas en Química**, por José Esteban Ciriquian, Catedrático de Matemáticas en el Instituto de Soria, y Profesor Asociado de Matemáticas para Químicos en la Universidad de Zaragoza. Estudia las siguientes representaciones: triangular; de dos ejes ortogonales; perspectiva caballera; sistema diédrico; proyección exfométrica; representación de Van t'Hoff y representación de Jaenecke.

BOOK REVIEWS

DE ALMA SOCIA CHRISTI MEDIATORIS edidit C. Friethoff, O.P. professor Theol. Dogm. in Facultate Theologica. Institutum Pontificium Internationale Angelicum de Urbe.—Romae, apud Angelicum. Salita del Grillo, 1.—1936 1 vol. pp. 231.

Post quaestionem praeliminarem, ubi inter alia 'character et natura mediatoris' ab auctore expenditur (pp.9-19), proceditur ad corpus operis quod in duas **sectiones** divitur: in Sect. I—p. Friethoff disserit "De causa universali nostrae salutis" (pp. 23-172), dum in Sect. Altera "De applicatione causae universalis" (pp. 173-223) est sermo, totumque opus quasi clauditur Epilogo (pp. 223-229).

Christus Iesus unus cum sit Mediator Dei et hominum, scribit prof. Friethoff, alium mediatorem iuxta se habere nequit, qui non omne quod est et habet acceperit ab ipso. Unus enim est summus 'lapis angularis in quo omnis aedificatio constructa crescit in templum sanctum' (Eph. II, 21-22). Non enim unus est qui habet similem sibi et inde iam ab initio diximus beatam Virginem, si unquam dicenda sit Mediatrix, Mediatricem esse non posse in illo sensu quo Xus. Mediator dicitur et est. In diversis vero considerationibus nostris statuimus differentiam magnam valde inter illum unum Mediatorem et suam almam Sociam.

Praemissis iis quae sunt de communi ratione mediatoris, Auctor noster divinam vocationem Mariae in consortium Filii sui, totius humani generis Redemptoris, demonstrat,

invocata primo loco Sacra Traditione—desunt testimonia clara S. Scripturae—evolvendo parallelismum antitheticum Mariam inter et Evam. Adhibentur dein testimonia scriptorum antiquitatis, quorum mens recte interpretatur, qui et expressis verbis **quandam causalitatem veram** Mariae in salutis opere et quidem principaliter per suam obedientiam meritoriam, qua nobis dedit ipsum Salvatorem, tribuunt. Attamen praedicta **vera causalitas** non consistit in illa sola obedientia, qua libere ac meritorie, humiliter atque obedienter beata Virgo mundo dedit auctorem totius nostrae restorationis. Tertio et ultimo argumentum adicitur scripturistico-traditionale. Gen. III, 15.—Cap. I pp. 23-52.

Sub Sect. I quae et longior et fundamentum Sect. II est, prof. Friethoff tractat de Maria socia Xi. satisfacientis—cap. 2 pp. 53-66; de Maria socia Xi. merentis—cap. 3, pp. 67-96; de Maria socia Xi. redimentis—cap. 4. pp. 97-138; de Maria socia Xi. sacrificantis—cap. 5. pp. 139—150; et de Maria socia Xi. plene triumphantis—cap. 6. pp. 151-172.

• Sub Sect. Altera, brevis fit sermo de Maria socia Xi. regnantis—cap. 7. pp. 173-208; et de Maria socia Xi. interpellantis—cap. 8. pp. 209-222.

Opus magna laude dignum et propter solidam theologiam doctrinam et propter stylum brevem, clarum inutili elegantia destitutum, simplicem. Iuvenis sed valde docti professoris opus De Alma Socia Christi Mediatoris ex corde lectori-

bus nostris praecipue clericis commendamus.

F. R.

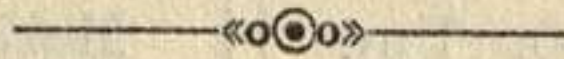
TEACHING AND PREACHING RELIGION TO CHILDREN by Rev.

John K. Sharp, A.M. S.T. Teacher, catechist and priest alike will un-
failingly appreciate this little volume. The suggestions offered for attracting public school children to religion classes—one of the major problems of catechetical work—no less than the procedures connected with the Children's Mass and the interesting, psychological appeal by

the use of verbal illustrations in catechetical instruction deserve special mention. But the greatest interest lies in the exposition of the kindly cooperation that priest and catechist can lend to each other—the former, by affording the latter inspiration and encouragement galore that will render her work fruitful even after school hours; the catechist, in turn, by providing the priest a ready help in one of his major parochial duties.

This little book undoubtedly possesses unique merits.

J. L.



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