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## UNITAS

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LAW

*Vitoria and War*

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

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*(Continued)*

RIGHT PROCEDURE

*b) During the War*

In this second argument on the question of right procedure several other points have to be included which by reason of the new inventions and instruments of warfare are of major importance in our times. In effect in modern warfare there appears to be a disregard of innocent persons and of their possessions; their plights seem to be entirely ignored; yet the opinion of theologians and jurists on this question is unanimous and very definite.

What may be considered allowable in war? Vitoria following St. Augustise, gives this response: "In bello licet omnia facere tua necessaria iunt ad defensionem poni publici. Haec nota, cum ille sit finis belli rempublican defendere et conservare," (190). It is permissible, therefore to slay the enemy, to sieze his possessions, in general to exercise the so-called

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(190) Vitoria, "De Jure belli."

military rights. Hence it is lawful to make use of all the means which may lead to victory.

It is true likewise that "*Insidiae et graudes*" may be employed. The system was not in disrepute with the heroes of antiquity.

In the Middle Ages, however, and in accordance with the ideals of chivalry, the prevailing opinion among theologians seems to have been that "*insidiae*" devious artifices", were not to be employed. There seemed contrary to honesty in the mind of theologians and contrary to the code of honour in the usage of chivalry (191).

Concerning this we find an illuminating article in St. Thomas as to whether war by *insidiae* is permissible. He answers in the affirmative and quotes the opinion of St. Augustine in his "Sed Contra" "In the carrying out of a just war, justice is no way interested as to whether the combat is carried on openly or by strategem "Insidiis" (192).

The principle underlying St. Thomas's statement is that the engagement against the enemy must be carried out to conclusion. "Fides hosti servanda." Consequently neither side is bound to reveal his plans to his enemy; at the same time it is never permissible to make a false statement, or to have recourse to falsehood in order to deceive the enemy; (193) at the same time the engagement entered into with the enemy must be observed; we say *as a general rule*, for as B. De Ayala points out, an agreement for evil must not be observed, as for instance when it is against divine, natural, or moral law. Thus St. Augustine state: "Si ad peccatum admittendum fides exhibetur, mirum est si fides appellatur" (194). Again an individual may not fulfill a pledge he has made in detriment to the commonwealth or the Church. For in these circumstances any action requires to be in conformity with justice that is to say, it must in the first place inflict no injury, and in the second tend towards the common good (195). And here it is well to note carefully that we are treating *enemies* in the juridical sense which of course does not include rebels, thieves, pirates, outlaws, bandits etc. By the enemy is implied an adversary entitled to military rights such as *jura belli, captivitatis et postliminii*.

(191) Cfr. E. Chenon, "St. Thomas et la guerre" in the volume "L'Eglise et la Guerre", Paris, 1920.

(192) "Cum bellum justum suscipitur utrum aperte pugnet aliquis an ex insidiis, nihil ad justitiam interest." (S. Augustine ad Bonifae.)

(193) St. Thomas, 2-2, Q 40, a III.

(194) "Sed et si cum hostibus et iis qui justum bellum nobiscum contendunt agatur, non semper fidem servare convenit: in malis promissis fidem servari non expedit (exempli gratia jurando contra legem Dei) etc. Neque obligatur quisquam ex juramento contra bonos mores praestito, sed et qui rem illicitam facit quia juravit accumulatur peccata peccatis" (S. De Ayala "De Jure et officiis bellicis," Lib. I, cap. VI).

(195) "Fides data a privato in praejudicium reipublicae vel Ecclesiae non est servanda." (id. *ibid.*)

Two or more independent States engaging in war rank as enemies in the proper sense of the term as on each side there is the responsibility of legitimate authority. But the primary engagement need not be observed in a case where the enemy has himself first failed in this particular "Fidem fallenti non esse fidem servandam." Moreover if it is a question of rebels who are not enemies in the technical sense, there is no need whatsoever to keep faith with them.

Rebels, by the fact of taking up arms against legitimate authority are breaking faith with it and therefore cannot themselves require to be dealt with in good faith. There is no need to advance the theory that the subjects may be right in rebelling against their ruler for the sake of the whole nation. This is by no means lawful (196).

Disobedience and rebellion on the part of the subjects towards their prince is a serious offence comparable to heresy; hence, it is *never* lawful for the subjects to rebel. And we may not in proof of its lawfulness adduce the fact that sometimes a revolt has succeeded in contributing to the welfare of the commonwealth; "Non quid Romae fiat, sed quid legitime fieri debeat spectandum est." A rebellion is never justifiable even when the princes impose the most exacting and tyrannical laws. Such is generally the opinion of theologians. A good king or prince is a gift from God for the punishment of evil doers and the liberty and exaltation of the good; and he should be regarded with filial reverence and piety (197); but a wicked prince must be likewise tolerated for, as Job (198), says, God ordains the rule of the deceitful prince, because of the sins of the people (199).

It is not relevant now to treat of *tyrannicidium*, and we do not propose to dwell upon it here; suffice it to give briefly a general view of the teaching which obtains with regard to the rebellion of subjects.

Usually distinction is made between the tyrant usurper—*tyranus usurpationis*—and the tyrant who is such through the abuse of authority—*abusu auctoritatis*—It is lawful to rebel against the first named if no other course can prevail but it is not lawful to try to kill or overthrow the second. It is never lawful for the individual to slay, or the subjects to reject or disobey him, who by right of succession or election is lawful prince

(196) "Nulla justa causa videri potest adversum patriam arma capienti. Nulla autem tanta impietas, nullum tutum scelus, quod sit pricidio vindicandum. Inobedientia autem subditorum et rebellio in principem gravissimum crimen habentur et haeresi comparatur; ideoque ob quantumvis gravia onera subditis imposita non licet rebellare." (B. De Ayala, *op cit.*)

(197) I, Petri, *cap. II.*

(198) Job, *cap XIV.*

(199) "Reges ergo et principes si boni sint tamquam a Deo missi ad vindictam malorum laudem vero bonorum, summa pietate coli debent; sin mali pariter tolerari ...nam Deus regnare facit hominem hypochritam propter peccata populi." (B. de Ayala, *op. cit., cap. VIII, no. 23.*)

however cruelly-crudelites—and unjustly he may choose to act (200). A lawful prince however cruel and wicked—iniquous is not to be denominated tyrant his power and authority coming from God; he is not amenable to the people inferior to him. (201). Not merely would it be wrong in theory but in practise also it would be attended with dire consequence if on his failure to please his subjects he should be immediately denominated tyrant, for it could hardly fail to originate countless evils. The popular feeling is of the kind which is either subservient or overbearing, and if we may justly fear a single tyrant how much more in to be dreaded a multitude of despots (202).

But a problem much more serious perhaps awaits our attention: that is, the questions relating to the innocent persons during the continuance of hostilities—their property, their life, and their freedom, (203).

\* \* \*

Now war has for aim the punishment of a delict. Should this punishment be confined to the guilty or does it also embrace the innocent? In other words to what extent does war affect the innocent?

This question is very critically analysed by Vitoria and we shall here endeavour to precise his generous opinions.

It is never lawful *per se et ex intentione* to slay the innocent (204) for a variety of reasons patent to everyone. If in effect they are innocent it is obvious they are not deserving of punishment. Again if they could be punished they could likewise lawfully defend themselves; the result being a just war or both sides which, as we have seen, cannot happen.

Sometimes, *per accidens*, it is lawful even consciously to

(200) "Illum tamen que jure sucessionis electionisve princeps est, quamvis inique et crudeliter agat privato non licet occidere, neque populo eum rejicere vel ab eo deficere." (B. de Ayala, "**De Jure et officiis bellivis**); and the same is taught by B. de Soto. "**De Justitia et Jure; lib V. Q I, art 18**).

(201) "Legitimus enim princeps quamvis crudelis et iniquus, tyrannus dici non potest, cumque lege regia, imo ex ordinatione Dei omne IMPERIUM ET POTESTAS principi in populum sit collata, illum judicare populus non poterit." (A. De castro, vo **Tyrannus**.)

(202) "Hanc vero potestatem populo tribuere non solum absurdum est, et iniquum set etiam ad rei reipublicae eversionem spectat; non enim rex si aliquantulum contra voluntatem populi imperat, protinus iniquus et tyrannus dicendus est; nam ista ratione nulli sunt reges. Sed nec monarchia, ael regia potestas, dicenda est cum arbitrio populi respublica gubernatur a rege: quoniam status reipublicae pendet a populo quo nihil stultius, nihil intemperantius, et cum in bonos exarsent nihil furiosius..." (B. de Ayala, **op. cit.**) (**Idem apud A. de Castro, "Adversus Haereses" Scib XIV, verbo Tyrannus**).

(203) Suarez states that by **natural law** are classed as innocent persons: womne, and children and by **jus gentium** all others incapable of bearing arms, Ambassadors are so classed by positive law and among christian nations, priests, religious and all who come under Canon Law." (Suarez, De bello. Q XIII, Sect. VIII).

(204) "Numquam licet per se et ex intentione interficere innocentem."

Fundamentum justii belli est injuria, sed injuria non est ab innocente."

"Pro injuria malorum non licet punire innocentes Alias jam bellum esset justum ex utraque parte, salva ignorantia quod esse non potest" (Vitoria.

put innocent people to death, as for instance when in a just war it is necessary to attack a city where there must inevitably be a number of innocent persons, and where it is a foregone conclusion that most of these innocents will be killed. Were it not otherwise war could not be levied against the guilty and its justice would be made void (205). It must nevertheless, be borne in mind what we have previously stated viz. that war must not entail greater evils than those it was meant to avoid. On this account it would not be right to burn down a city which contained few guilty but many innocents unless indeed, this procedure was of major importance for the attainment of final victory. But even *per accidens* it is unlawful to slay the innocent unless it is otherwise impossible to carry on a just war.

Who are to be included in the term '*innocent persons*' Naturally women and children are here indicated. Vitoria likewise includes old people, *togati*., agricultural labourers, monks, priests pilgrims, foreigners (206). All such are to be considered innocent persons. And in this regard, Vitoria inquires "Is it lawful to kill these innocent persons who may at a future date become belligerents?" His answer is noteworthy. He declares that although in such contingency it is arguable whether they might not be slain he deems it himself entirely unlawful for evil may not be done with a view to avoiding a greater evil and it is unthinkable that an individual should be slain because of his future delicts (207). It results therefore that it is not lawful to slay the innocent unless in very exceptional circumstances. But is it lawful to make them captives or enslave them. Vitoria answers with certain restrictions. It is held lawful to carry into captivity not only the guilty but the innocent when it is necessary for the recuperation of expenses of war. When it is a question of war between Christians and Saracens, the latter may not only be taken into captivity, but also enslaved.

It would appear however, that in a war between Christian nations the *jus gentium* or, as some say, the *jus receptum* or the *laudabilis consuetudo* requires that they may not be made slaves, but if it is necessary for the attainment of complete victory they may be made captives and a reason demanded for their liberation; and this is quite lawful (208).

(205) "Per accidens autem etiam scientes aliquando licet interficere innocentes puta cum oppugnatur arx aut civitas juste... Sed tamen est considerandum quod paulo ante dictum est, quod oportet cavere ne ex ipso bello sequantur mayora mala quam vitentur per ipsum bellum. Et tandem nunquam videtur licitum interficere innocentes, etiam per accidens et praeter intensionem nisi quando bellum justum expedire et geri aliter non potest," (Vitoria, *ib.*)

(206) Vitoria, *De Jure belli*, no 36.

(207) ... "Et intolerabile est quod occidatur aliquis pro peccato futuro" ... Et proterea sunt etiam alia remedia ad cavendum in futurum ab illis ut captivitas exilium, etc. (*ib.* no. 38).

(208) Vitoria, *De Jure belli*, no. 42.

In this statement Vitoria is in perfect agreement with all commentators of his period, theologians and jurists alike.

That Christians should not be sold into slavery seems to have been the traditional teaching and practise from as far back as the sixth century. But in the case of pagans they could be treated as slaves. Vitoria does not commentate on the origin of slavery or attempt its justification, but merely considers it as a fact. But other philosophers of the same period (among them B. de Ayala) discuss extensively this question, its origin, whether it derives from natural law or is merely permitted by *jus gentium*, etc. His conclusion is that slavery is neither included nor condemned by natural law; it is a determination of the *jus gentium* of positive law which man has found appropriate and useful after the same manner as the division of property (209).

Again it must be noted that for a belligerent to have the right to make captives and enslave them he must be a just belligerent engaged in a just war. For it is only the lawful belligerent who enjoys the *jure belli, captivitatis et postlimini*. This is again and again repeated by the canonists and seems to have been regarded as of no small importance for in those times, pirates, brigands, robbers, bandits and so forth were in no way uncommon.

\* \* \*

Now, after having considered the question of the lives and the liberty of innocent persons we come to the discussion of *their property*.

And the first point to be considered is whether it is lawful to deprive the innocent of their possessions. In the response we must not lose sight of the aim of every just war. But there can be no doubt firstly that it is lawful to take from them any means of which the enemy could make use for his advantage such as weapons, ammunition, ships, engines, etc. This is manifest for since the end of the war is victory there would be no means of attaining it otherwise. It is even lawful to confiscate their wealth, to ruin their crops, to kill their beasts, if these things are essential to the weakening of the enemy's forces. Nevertheless this method of procedure despoiling for instance, the farmers and other innocent persons, does appear to be unlawful if without it the war can be efficiently—*commode*—be carried forward.

It is also unlawful to despoil pilgrims and strangers, *hospites*, living amongst the enemy unless they are proved guilty for they cannot be counted adversaries. If however, the enemy refuse, all restitution whatsoever and the aggrieved party is unable to obtain satisfaction—*commode*—by any other means it is lawful for him to appropriate whatever he can from either

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(209) B. De Ayala, *De bello et officiis bellicis*, Lib. I, cap. V. In that chapter he discussed soundly the relation of freedom to the state of slavery.



guilty or innocent. Such a course is in this even lawful albeit, to a certain extent, dangerous, for occasion is thus given to theft and rapine (210).

With regard to the delinquent side and the attitude to be maintained towards it during the war there can be no doubt that it is lawful to kill indifferently all those who are actually engaged in the hostilities. The reason for this is easily understood when we consider the four aims of war: self-defence, recovery of property alienated, vindication of the injury received, the obtention of peace and security. In view of these it is manifestly lawful to kill every enemy in the actual contest.

It may be questioned further whether it is lawful to give over to pillage a town of the enemy. In itself it is not prohibited if it is necessary for the object of the war the terrorisation of the enemy, of the encouragement of the army. Equally a village may be burned for the same reason. But on account of manifold evils thereby entailed, acts of savagery, cruelty, unworthy of civilized men, it is certainly an iniquity to deliver over a town to pillage outside the most dire and imperative necessity; but if such necessity supervenes it can be done absolutely speaking. In any, even this extreme measure cannot be resorted to other than by command of the prince or chief, for the soldiers are merely the executioners not the judges, and the chiefs are bound as far as possible to disallow and to avoid such excesses (211).

## RIGHT PROCEDURE

### *c) Post War*

There remains ultimately a very important point for consideration, viz. the relations between the victors and the vanquished.

Is it lawful for the victor when victory has been achieved to put his adversaries to death? Conformably to the principles of strict justice, it is. The guilty can be lawfully put to death, for one of the objects of war is to vindicate injustice, and it is lawful in consequence of the previous injustice to impose upon its authors the penalty of death. In the case of ordinary citizens capital punishment can be inflicted by the decision of the judge. Therefore the victor who is in this case the legitimate judge, has it in his power to decree the supreme penalty for the perpetrators of the injustices (212).

It is hardly necessary to say that we are pre-supposing a just war in which the ruler with a just cause has triumphed. But is it lawful to put to death all who have taken up arms

(210) Vitoria, *op cit.* nos, 39, 40, 41.

(211) Vitoria, *op cit.* nos. 51, 52.

(212) Vitoria, *op cit.* no. 46.

against the just side in the war solely for the vindication of the injustice? It is impossible to give a categorical answer to this question unless we take into account the "*ratione injuriae, damni illati et aliarum delictorum*. When we have been carefully assessed, the decision to be taken must be arrived at neither "atriciter" nor inhumanly. If essential for the common good there is no doubt the death penalty maybe inflicted "Aliquando etiam," Vitoria adds, "Licet et expedit interficere omnes nocentes", (213). A case in point would be when peace and security are impossible of attainment, unless all the enemy is put to the sword. Such might seem to be the case with regard to the Saracens with whom it would appear there would be no hope of living in peace (214). The safest method then, apparently, would be to slay all those who had unjustly taken up arms provided they are previously deserving of death—(mode jam fuerint culpabiles).

In a war, however, between christian nations Vitoria leans towards the view that it is not lawful to slay all those who have been engaged in the conflict. For thus war would cause many and greater evils than its object and design would prevent.

Regarding those who surrender, and those who are taken prisoner, if they were 'nocentes' active combatants, in strict justice—per se loquendo—and *servata aequitate*, it seems not unlawful to inflict the death penalty on them. But the *jus gentium* is actually more tolerant and, therefore, the established custom of not condemning them to the extreme penalty is to be observed as is done among good men "inter viros bonos."

As regards those who surrender it certainly seems to be unlawful to put them to death, whereas it might be permissible to stay the more harmful—*nocentiores*.

Now we come to the enemy's property. Does all property seized in war belong to the *just conqueror*? The opinion of theologians leaves no doubt upon this point. Everything seized in a just war belongs to the just belligerent. Here we have a new expression which seems to define what is meant nowadays by the distinction between *bona mobilia* and *bona immobilia*, which is known as the 'jus postliminii' (215). It is the status of a person or a chattel seized during the war to revert to its pristine ownership when certain conditions have been fulfilled.

The *dominium* of goods taken in a just war belongs to the *just* victor. Now positive law or the established custom of a country determines its disposition: whether it is absorbed

(213) Vitoria, *op cit.* no. 48.

(214) Vitoria, "Et hoc maxime videtur contra infideles, a quibus nunquam illis conditionibus pax sperari potest." (*De Jure belli*" no. 47).

(215) "Jus postliminii quod est jus amissae rei recipiendae ab extraneo in statum pristinum restituendae moribus legibusque constitutum". (F. Arias de Valderas, "*De bello et ejus justitia*" no. 134).

into the public treasury, or by the soldiers or for the needs of the army, etc. it is a different question into which we shall not enter here, but there is one point specially noted by jurists viz. that Church property cannot be sequestrated by any victor whether just or unjust victor. Sacred objects, churches and all their appurtenances are not private property of any of the belligerents (they are *res nullius* with regard to them) and therefore they are not *res hostiles* which may lawfully be seized. For the first and most essential condition for propriety rights over possessions seized in war from the guilty enemy is that they should be hostiles, that is appurtenances of the enemy (216). There is another motive against their seizure or detention, as they are consecrated to divine worship, they are not human ownership. (217).

The distinction we have previously referred to between *bona mobilia et immobilia* seems a very natural one especially as some writers maintain that the *bona immobilia* alone come under the *jus postliminii*. But other writers have held that many *res mobiles* must be considered to belong to the *jus postliminii*. Thus we may say in general that possessions whether *res mobiles* or *immobiles* when they have been recovered by the owner and restored to their former condition came under the *jus postliminii* (218).

According to the *jus gentium* the *mobilia* or spoils of war, seized by the just belligerents become their property even should they exceed in value the compensation required for the injury sustained. "In justo bello omnia fiunt capientis etiam personae."—with regard to the *immobilia* it is lawful to hold them as compensation until all expense of the war has been duly liquidated. Moreover as penalty for the injury received it is lawful for the just victor to occupy enemy territory, towns etc. but this right must be exercised with moderation and not through lust of power and *dominium*. It is also required that once all hostilities have ceased all property should be returned to its rightful owner *minus* such deductions as may be deemed just in compensation for damage done, the costs of war, and the vindication of the injustice. "*Servata aequitate*" et *humanitate*, for punishment must be in proportion to the delinquency. Further in order to ensure peace and ward off future danger from the enemy it is in Vitoria's opinion, lawful to sequester towns, ships, and other resources and place them in the position of being unable to renew hostilities. And again, *tributa* may be imposed not merely in satisfaction for the damage done but also as penalty in vindication of the injustice, (219).

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(216) B. De Ayala, "Ut enim res bello capta nostra fiat sufficit rem *hostilem* esse", *Op. cit.*, lib. I, c. V).

(217) F. Arias de Valderas, *op. cit.*, no. 15.

(218) B. De Ayala, lib, II cap. V.

(219) Vitoria, *De Jure belli*, no. 57.

In fine, leaving aside many other secondary considerations we shall note three main points wherein unmistakable his own attitude towards war. They are so to speak three golden rules with which he closed up his *relectio* and in which our own discussion may conclude (220).

1. Assuming that the prince has authority to make war, he should first of all not go seeking occasions and causes of war, but should if possible live in peace with all men, as St. Paul enjoins us (Rom. cap. XII). Moreover he should reflect that others are his neighbours, who are bound to love as ourselves, and that we all have one common Lord, before whose tribunal we shall have to render our account. For it is the extreme of savagery to seek and rejoice in grounds for killing and destroying men whom God has created and for whom Christ died. But only under compassion and reluctantly should he come under the necessity of war.

2. When war for a just cause has broken out it must not be waged so as to ruin the people against whom it is directed, but only so as to obtain one's rights and the defense of one's country and in order that from that war peace and security may in time result.

3. When victory has been won and the war is over, the victory should be utilized with moderation and Christian humility, and the victor ought to deem that he is sitting as judge between two States, the one which has been wronged and the one which has done the wrong, so that it will be as judge and not as accuser that he will deliver the judgement whereby the injured State can obtain satisfaction, and this so far as possible, should involve the offending State in the least degree of calamity and misfortune, the offending individuals being chastised within lawful limits; and an especial reason for this is that in general among Christians all the fault must be laid at

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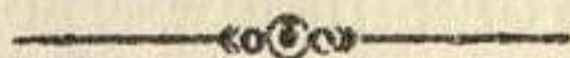
(220) Ten conditions are required for a **just war**. According to Fr. Stratman, O.P. in his book "**The Church and War.**"

- I. Gross injustice on the part of one and only one of the contending parties.
- II. Gross formal moral guilt on one side.
- III. Undoubted knowledge of this guilt.
- IV. That war should only be declared when every means to prevent it have failed.
- V. Guilt and punishment must be proportionate.
- VI. Moral certainty that the side of justice will win.
- VII. Right intention to further what is good by the war and to shun what is evil.
- VIII. War must be rightly conducted: restrained within the limits of justice and charity.
- IX. Avoidance of unnecessary upheaval of countries not immediately concerned and of the Christian community.
- X. Declaration of war by lawful authorized authority exercised in the name of God.

the door of their princes, for subjects when fighting for their princes act in good faith and it is thoroughly unjust, in the words of the poet, that—

“Quidquid delirant reges, plectantur Achivi.

*(For every folly their kings commit the punishment should fall upon the Greeks).*



# *The Philippine Tax System*

by *Jacinto M. Kamantigue, A. B., Ll. B., Ph. D.*

(Continued)

## THE INCOME TAX

After the abolition of the Spanish income tax in the Philippines, no tax was collected on incomes until the year 1913 when the Federal Income Tax Law of that year was made applicable here. When this law was replaced by the Federal Income Tax Law of 1916 and the latter amended by the Federal Income Tax Law of 1917, the 1916 law and the amendments thereto were made also applicable to the Philippines. But the subsequent laws passed by Congress such as the War Income Tax of 1917, the Income Taxes of 1918 and 1919, and the War Profits and Excess Profits Taxes were not made applicable to the Philippines. Thus, while the normal rate of the income tax of the United States jumped from 2% in 1917 to 12% in 1918 and 8% in 1919, and the rates of the surtax jumped from 1% to 13% to 1% to 65%, besides the war and excess profits taxes; the normal rate of the income tax of the Philippine Islands remained at 2% and the surtax, at the rate of from 1% to 13% until the year 1919. The reduction of the exemptions from \$3,000 for single persons and \$4,000 for married persons to \$1,000 for single and \$2,000 for married persons did not affect the law in force in the Philippines. However, in the Revenue Act of 1918, the Philippine Legislature was given power, by due enactment, to amend, alter, modify, or repeal the income tax law in force here. Under this authority, Act No. 2833 was passed by the Philippine Legislature on March 7, 1919, to take effect January 1, 1920. This law as amended by Acts Nos. 2926, 3026, 3605 and 3761 is the present income tax law of the Philippines.

The income tax is the most modern of all taxes because of the progressive rates, but it is a very complicated one. Even the term "income" is very controversial. Before, income in economics simply meant money income. In recent years it includes psychic income or the flow of satisfaction which one gets in using or owning property. For example, the rental value of the house one occupies when the house belongs to him. In case of farmers the products consumed by him and his family on the farm are likewise psychic income. Unrealized income is allowed to a certain extent from the administrative point of view. All that comes in is not however, income as it is properly called gross receipts. The old conception of income was that what

came in with regularity. Then there was the irregular income like gifts and inheritances that did not come regularly. In modern regularity is not taken into consideration. The gain or income, however, is considered as coming from the usufruct. But this again has difficulties. In case of bond, the income is the interest, but if there is a gain realized in case it is sold, it is nevertheless an income. In England it is considered as accretion to capital. This, however, does not apply to regular broker whose business is to buy and sell stocks and bonds. The question now is whether stock dividends are income or not. According to Professor Seligman, there are two characteristics which are indispensable for the determination of income, and nothing is income unless it meets the test, viz: (a) Separation from the capital, and (b) realization. In case of stock dividend there is neither separation from the capital nor realization of income. Of course, if the stock is sold, the profit is income.

There is a tendency at present to get closer to the accountant's conception of income, that is, the excess at the close of the year over the assets at the beginning of the year is considered income. But the difficulties in this are: (a) It makes no allowance for the changes of the value of money, and (b) in the accountant theory it is all book value, and the income may not be realized which in that case one may have to borrow yet the money in order to pay his income tax. Income always presuppose the maintenance of stock in tact, otherwise there will be defalcation of capital. Our law, however, defines income as to include:

(a) Gains, profits, and income derived from salaries, wages, or compensation for personal services of whatever kind and in whatever form paid, or from professions, vocations, businesses, trade, commerce, sales, or dealings in property, whether real or personal, growing out of the ownership or use of or interest in real or personal property, also from interest, rent, dividends, securities, or the transaction of any business carried on for gain or profit, or gains, profits, and income derived from any source whatever.

(b) Income received by estates of deceased persons during the period of administration or settlement of the estate, and also such income of estates or any kind of property held in trust, including such income accumulated in trust for the benefit of unborn or unascertained persons, or persons with contingent interests, and income held for future distribution under the terms of the will or trust.

(c) The gain derived or loss sustained from the sale or other disposition of property, real, personal, or mixed, is determined in accordance with the following schedule:

(1) In the case of property acquired before March first, nineteen hundred and thirteen, the fair market price or value of such property as of March first, nineteen hundred and thirteen.

(2) In the case of property acquired on or before March first, nineteen hundred and thirteen, the fair market price or value of such property as of the date of the acquisition thereof.

(3) In the case of the exchange of one piece of property for another, the property received in exchange shall be considered as equivalent of money in a sum equal to its fair market value on the date on which the exchange was made.

(d) Book income by the use of inventories in accordance with the best accounting practice in the trade or business.

The incomes exempt from the income tax are the following:

(a) The proceeds of life-insurance policies paid to beneficiaries upon the death of the insured.

(b) The amount received by the insured, as a return of premium paid by him under life insurance, endowment, or annuity contracts, either during the term or at the maturity of the term mentioned in the contract or upon surrender of the contract.

(c) The value of property acquired by gift, bequest, devise, or descent; but the income from such property shall be included as income.

(d) Interest upon the obligations of the United States to the extent provided in the act authorising the issue thereof; interest upon the obligations of the Government of the Philippine Islands or any political subdivision thereof, but in case of such obligations issued after January first, nineteen hundred and nineteen, only to the extent provided in the act authorizing the issue thereof.

*Return.*—Each person of lawful age who has an income of four thousand pesos or over a year is required to file an income tax return under oath to the Collector of Internal Revenue on or before the first day of March of each year. In the said return, he is required to set forth the gross amount of income from separate sources and to deduct therefrom allowances authorized by law. In meritorious cases, the Collector of Internal Revenue may grant an extension of time for the filing of the said return. In case of absence, illness, or non-residence, the return may be filed by a representative. Guardians, trustees, executors, administrators, receivers, conservators, and all persons, corporations, partnership, joint-accounts (*cuentas en participacion*), or associations, acting in any fiduciary capacity, are required to render a return of the income of the person, trust, or estate for whom or which they act. The income of the unmarried minors are required to be included in the return of the parent. Persons engaged in business in general copartnership (*compañia colectiva*) duly registered in the mercantile registry are required to declare in their returns their share of the profits in the registered general copartnership whether the profits have been divided or not. If a person keeps accounts upon any basis other than that of actual receipts and disbursements, he may make his return on the basis upon which



his accounts are kept. Non-resident aliens are also required to make return of their income from all sources within the Philippine Islands including interest on bonds, notes, or other interest-bearing obligations of residents, corporate or otherwise.

Every corporation, joint-stock company, partnership, joint-account (*cuenta en participación*), association, or insurance company, subject to the income tax, is required to file a return on or before the first of March of every year of its annual net income including such facts, data, and information necessary to determine the correctness of the return. If it has designated a fiscal year, the return should be filed within sixty days after the close of such fiscal year. The filing of the return may be extended by the Collector of Internal Revenue in meritorious cases. If its business is under a receivership, then such receivers, trustees, or assignees shall make a return for it. If it keeps account upon any basis other than that of actual receipts and disbursements, it may make its return upon the basis upon which its accounts are kept. It is also required to deduct, withhold, and pay the normal tax due from non-resident alien individuals and from non-resident alien firms, copartnerships, companies, corporations, joint-stock companies, partnerships, associations, trust companies, and insurance companies that derive income from sources within the Philippine Islands or from interest upon bonds and mortgages, or deeds of trust, notes, or other interest-bearing obligations of a domestic or resident foreign corporation, joint-stock company, partnership, joint account (*cuenta en participación*), association, and insurance company, whether or not the bonds and other such obligations or securities contain the so-called tax free covenant clause, or whether such bonds, obligations or securities had been heretofore or are hereafter issued or marketed, and the interest thereon paid, within or without the Philippine Islands. It is finally required to deduct, withhold and pay the normal tax due on dividends and net earnings of non-resident alien individuals and the above-mentioned foreign corporations.

*Deductions and Credits.*—In computing the net income in the case of a citizen or resident of the Philippine Islands, the following are allowed as deductions:

1. The necessary expenses actually paid or incurred in carrying on any business or trade, not including personal, living, or family expenses.

2. All interest paid within the year on his indebtedness except on indebtedness incurred for the purchase of obligations or securities the interest upon which is exempt from taxation as income under this law.

3. Taxes paid within the year imposed by any foreign government, by the Government of the Philippine Islands, or by any province, city, municipality, or township, not including those assessed against local benefits.

4. Losses actually sustained during the year, incurred in

his business or trade, or arising from fires, storms, shipwreck, or other casualty, and from theft, when such losses are not compensated for by insurance or otherwise.

5. In transactions entered into for profit but not connected with his business or trade the losses actually sustained therein during the year not compensated for by insurance or otherwise.

6. Debts due to the taxpayer actually ascertained to be worthless and charged off within the year.

7. A reasonable allowance for deterioration of property arising out of its use or employment in the business or trade, or out of its not being used.

8. (a) In the case of oil and gas well a reasonable allowance for actual reduction in flow and production to be ascertained not by the flush flow, but by the settled production or regular flow; (b) in case of mines a reasonable allowance for depletion thereof not to exceed the market value in the mine of the product thereof, which has been mined and sold during the year for which the return and computation are made, such reasonable allowance to be made in the case of both (a) and (b) under rules and regulations to be prescribed by the Collector of Internal Revenue with the approval of the Secretary of Finance: *Provided*, That when the allowance authorized in (a) and (b) shall equal the capital originally invested, or in case of purchase made prior to March first, nineteen hundred and thirteen, the fair market value as of that date, no further allowance shall be made. No deduction shall be allowed for any amount paid out for new buildings, permanent improvements, or betterments, made to increase the value of any property, and no deduction shall be made for any amount of expense of restoring property or making good the exhaustion thereof for which an allowance is or has been made.

9. Contributions or gifts actually paid or made within the year to corporations or associations organized and operated exclusively for religious, charitable, scientific, or educational purposes, or to societies for the prevention of cruelty to children or animals, no part of the net income of which inures to the benefit of any private stockholder or individual, to an amount not in excess of five per centum of the taxpayer's taxable net income as computed without the benefit of this paragraph. Such contributions or gifts shall be allowable as deductions only if verified under rules and regulations prescribed by the Collector of Internal Revenue with the approval of the Secretary of Finance.

For the purpose of the normal tax only, the income embraced in a personal return shall be credited with the amount received as dividends or net profits.

A like credit shall be allowed as to the amount of income, the normal tax upon which has been paid or withheld for payment at the source of the income under the provisions of this law.

To non-resident aliens, the following deductions are allowed in computing the net income:

1. The necessary expenses paid or incurred in carrying on any business or trade conducted by him within the Philippine Islands, not including personal, living, or family expenses.

2. The proportion of all interest paid within the year by such person on his indebtedness, except on indebtedness incurred for the purchase of obligations or securities, the interest upon which is exempt from taxation as income under this law, which the gross amount of his income for the year derived from sources within the Philippine Islands bears to the gross amount of his income for the year derived from all sources within and without the Philippine Islands; but this deduction shall be allowed only if such person includes in the return all the information necessary for its calculation.

3. Taxes paid within the year imposed by the Government of the United States, the Government of the Philippine Islands, or any province, city, municipality, or township paid within the Philippine Islands, not including those assessed against local benefits.

4. Losses actually sustained during the year incurred in business or trade conducted by him within the Philippines Islands, and losses of property within the Philippine Islands, arising from fires, storms, shipwreck, or other casualty, and from theft, when such losses are not compensated for by insurance or otherwise.

5. In transactions entered into for profit in the Philippine Islands but not connected with his business or trade, the losses actually sustained during the year not compensated for by insurance or otherwise.

6. Debts arising in the course of business or trade conducted by him within the Philippine Islands due to the taxpayer actually ascertained to be worthless and charged off within the year.

7. A reasonable allowance for the deterioration of property within the Philippine Islands arising out of its use or employment, or its nonuse, in the business or trade:

(a) In the case of oil and gas wells a reasonable allowance for actual reduction in flow and production to be ascertained not by the flush flow, but by the settled production or regular flow; (b) in the case of mines a reasonable allowance for depletion thereof not to exceed the market value in the mine of the product thereof which has been mined and sold during the year for which the return and computation are made, such reasonable allowance to be made in the case of both (a) and (b) under rules and regulations to be prescribed by the Collector of Internal Revenue with the approval of the Secretary of Finance: *Provided*, That when the allowance authorized in (a) and (b) shall equal the capital originally invested or in case of purchase made prior to March first, nineteen hundred and thir-

teen, the fair market value as of that date, no further allowance shall be made. No deduction shall be allowed for any amount paid out for new buildings, permanent improvements, or betterments, made to increase the value of any property or estate, and no reduction shall be made for any amount of expense of restoring property or making good the exhaustion thereof for which an allowance is or has been made.

For the purpose of the normal tax only, the income embraced in a personal return shall be credited with the amount received as dividends or not profits.

A like credit shall be allowed as to the amount of income, the normal tax upon which has been paid or withheld for payment at the source of the income under the provisions of this law.

A nonresident alien individual shall receive the benefit of the deductions and credits provided for in this section only by filing or causing to be filed with the Collector of Internal Revenue a true and accurate return of his total income, received from all sources, corporate or otherwise, in the Philippine Islands, in the manner prescribed by this law; and in case of his failure to file such return the Collector of Internal Revenue shall collect the tax on such income.

1. All the ordinary and necessary expenses paid within the year in the maintenance and operation of its business and properties, including rentals or other payments for the continued use or possession of property to which the corporation has not taken or is not taking title, or in which it has no equity.

2. All losses actually sustained and charged off within the year and not compensated by insurance or otherwise, including a reasonable allowance for the depreciation of property arising out of its use or employment in the business or trade: (a) In the case of oil and gas wells a reasonable allowance for actual reduction in flow and production to be ascertained, not by the flush flow, but by the settled production or regular flow; (b) in the case of mines a reasonable allowance for depletion thereof not to exceed the market value in the mines of the product thereof which has been mined and sold during the year for which the return and computation are made, such reasonable allowance to be made in the case of both (a) and (b) under rules and regulations to be prescribed by the Collector of Internal Revenue with the approval of the Secretary of Finance: *Provided*, That when the allowance authorized in (a) and (b) shall equal the capital originally invested, or in case of purchase made prior to March first, nineteen hundred and thirteen, the fair market value as of that date, no further allowance shall be made; and (c) in the case of insurance companies, the net addition, if any, required by law to be made within the year to reserve funds and the sums other than dividends paid within the year on policy and annuity contracts: *Provided*, That no deduction shall be allowed for any amount

paid out for new buildings, permanent improvements, or betterments made to increase the value of any property or estate, and no deduction shall be made for any amount of expense of restoring property or making good the exhaustion thereof for which an allowance is or has been made: *Provided further*, That mutual fire and mutual employers' liability and mutual workmen's compensation and mutual casualty insurance companies requiring their members to make premium deposits to provide for losses and expenses shall not return as income any portion of the premium deposits returned to their policyholders, but shall return as taxable income all income received by them from all other sources plus such portion of the premium deposits as are retained by the companies for purposes other than the payment of losses and expenses and reinsurance reserves: *Provided further*, That mutual marine insurance companies shall include in their return of gross income gross premiums collected and received by them less amounts paid for reinsurance, but shall be entitled to include in deductions from gross income amounts repaid to policyholders on account of premiums previously paid by them and interest paid upon such amounts between the ascertainment thereof and the payment thereof; and life insurance companies shall not include as income in any year such portion of any actual premium received from any individual policyholder as shall have been paid back or credited to such individual policyholder, or treated as an abatement of premium of such individual policyholder, within such year.

3. The amount of interest paid within the year on its indebtedness, except on indebtedness incurred or continued to purchase or carry obligations or securities the interest upon which is exempt from taxation as income under this Law: *Provided*, That in the case of bonds or other indebtedness, which have been free from taxation, no deduction for the payment of the tax herein imposed, or any other tax paid pursuant to such guaranty, shall be allowed.

4. Taxes paid within the year imposed by any foreign government, by the Government of the Philippine Islands, or by any province, city, municipality, or township, not including those assessed against local benefits.

In the case of foreign corporations, the deductions allowed are:

1. All the ordinary and necessary expenses actually paid or deducted within the year out of earnings in the maintenance and operation of its business and property within the Philippine Islands, including rentals or other payments for the continued use or possession of property to which the corporation has not taken or is not taking title, or in which it has no equity.

2. All losses actually sustained and charged off within the year in business or trade conducted by it within the Philippine Islands and not compensated by insurance or otherwise, including a reasonable allowance for the depreciation of proper-

ty arising out of its use or employment in the business or trade:

(a) In the case of oil and gas wells a reasonable allowance for actual reduction in flow and production to be ascertained not by the flush flow, but by the settled production or regular flow;

(b) in the case of mines a reasonable allowance for depletion thereof not to exceed the market value in the mine of the product thereof which has been mined and sold during the year for which the return and computation are made, such reasonable allowance to be made in the case of both (a) and (b) under rules and regulations to be prescribed by the Collector of Internal Revenue with the approval of the Secretary of Finance: *Provided*, That when the allowances authorized in (a) and (b) shall equal the capital originally invested, or in case of purchase made prior to March first, nineteen hundred and thirteen, the fair market value as of that date, no further allowance shall be made; and (c) in the case of insurance companies, the net addition, if any, required by law to be made within the year to reserve funds and the sums other than dividends paid within the year on policy and annuity contracts: *Provided*, That no deduction shall be allowed for any amount paid out for new buildings, permanent improvements, or betterments, made to increase the value of any property, and no deduction shall be made for any amount of expense of restoring property or making good the exhaustion thereof for which an allowance is or has been made: *Provided, further*, That mutual fire and mutual employers' liability and mutual workmen's compensation and mutual casualty insurance companies requiring their members to make premium deposits to provide for losses and expenses shall not return as income any portion of the premium deposits returned to their policyholders, but shall return as taxable income all income received by them from all other sources plus such portion of the premium deposits as are retained by the companies for purposes other than the payment of losses and expenses and reinsurance reserves: *Provided, further*. That mutual marine insurance companies shall include in their return of gross income gross premiums collected and received by them less amounts paid for reinsurance, but shall be entitled to include in deductions from gross income amounts repaid to policyholders on account of premiums previously paid by them, and interest paid upon such amounts between the ascertainment thereof and the payment thereof, and life insurance companies shall not include as income in any year such portion of any actual premium received from any individual policyholder as shall have been paid back or credited to such individual policyholder, or treated as an abatement of premium of such individual policyholder within such year.

3. The proportion of the amount of interest paid within the year on its indebtedness, except on indebtedness incurred or continued to purchase or carry obligations or securities the interest upon which is exempt from taxation as income under

this law, which the gross amount of its income for the year from sources within the Philippine Islands bears to the gross amount of its income derived from all sources within and without the Philippine Islands: *Provided*, That in the case of bonds or other indebtedness which have been issued with a guaranty that the interest payable thereon shall be free from taxation, no deduction for the payment of the tax herein imposed or any other tax paid pursuant to such guaranty shall be allowed.

4. Taxes paid within the year in the Philippine Islands, imposed by the Government of the United States, by the Government of the Philippine Islands, or by any province, city, municipality, or township, not including those assessed against local benefits.

Exemption.—For the purpose of the normal tax only there shall be allowed as an exemption in the nature of a deduction from the amount of the net income of such citizen or resident of the Philippine Islands, ascertained as provided herein, the sum of four thousand pesos plus two thousand pesos additional if the person making the return be a married man with a wife living with him, or plus the sum of two thousand pesos additional if the person making the return be a married woman with a husband living with her or an unmarried man or woman with parents or one or more brothers or sisters dependent upon him or her; but in no event shall this additional exemption of two thousand pesos be deducted by both: *Provided*, That only one deduction of six thousand pesos shall be made from the aggregate income of both husband and wife when living together: *Provided, further*, That if the person making the return is the head of a family there shall be an additional exemption of four hundred pesos for each legitimate, recognized natural or adopted child dependent upon such person, if a minor or incapable of self-support because mentally or physically defective: *Provided, further*, That guardians or trustees shall be allowed to make this personal exemption as to income derived from the property of which such guardian or trustee has charge in favor of each ward or *cestui que trust*: *Provided, further*, That in no event shall a ward or *cestui que trust* be allowed a greater personal exemption than as provided in this section, from the amount of net income received from all sources. There shall also be allowed an exemption from the amount of the net income of estates of deceased citizens or residents of the Philippine Islands during the period of administration or settlement, and of trusts or other estates of citizens or residents of the Philippine Islands the income of which is not distributed annually or regularly the sum of four thousand pesos, including such deductions as are allowed by this law.

A non-resident alien shall be entitled to the exemption provided in this section when the income tax law in the country of which he is a subject or citizen allows similar exemption to citizens of the Philippines not residing in such country, pro-

vided said non-resident alien file a true and accurate return of the total income received by him from all sources in the Philippine Islands, as required by this Act.

Corporations exempted from the payment of income tax are:

1. Labor, agricultural, or horticultural organizations.
2. Mutual savings bank not having a capital stock represented by shares, and cooperative bank without capital stock organized and operated for mutual purposes and without profit.
3. Fraternal beneficiary society, order, or association, operating under the lodge system or for the exclusive benefit of the members of a fraternity itself operating under the lodge system and providing for the payment of life, sick, accident, or other benefits to the members of such society, order or association, or their dependents.
4. Loan and building association organized under the Corporation Law.
5. Cemetery company owned and operated exclusively for the benefit of its members.
6. Corporation or association organized and operated exclusively for religious, charitable, scientific, or educational purposes, no part of the net income of which inures to the benefit of any private stockholder or individual: *Provided, however,* That the income of whatever kind and character from any of its properties, real or personal, except income expressly exempted by this law, shall be liable to the tax imposed by this Act.
7. Business league, chamber of commerce, or board of trade, not organized for profit and not part of the net income of which inures to the benefit of any private stockholder or individual.
8. Civil league or organization not organized for profit but operated exclusively for the promotion of social welfare.
9. Club organized and operated exclusively for pleasure, recreation, and other nonprofitable purposes, no part of the net income of which inures to the benefit of any private stockholder or member.
10. Farmers' or other mutual typhoon or fire insurance company, mutual ditch or irrigation company, mutual or cooperative telephone company, or like organization of purely local character, the income of which consists solely of assessments, dues, and fees collected from members for the sole purpose of meeting its expenses.
11. Farmers', fruit growers', or like association organized and operated as a sales agent for the purpose of marketing the products of its members and turning back to them the proceeds of sales, less the necessary selling expenses, on the basis of the quantity of produce furnished by them.
12. Corporation or association organized for the exclusive purpose of holding title to property, collecting income therefrom,



and turning over the entire amount thereof, less expenses, to an organization which itself is exempt from the tax imposed by this law.

13. Joint-stock land bank as to income derived from bonds or debentures of other joint-stock land bank or any land bank belonging to such joint-stock land bank.

*Rate of the tax.*—The income tax has two rates. One is called normal and the amount is 3%, and is levied upon the entire net income received in the preceding calendar year from all sources by every individual, a citizen or resident of the Philippine Islands; levied upon the entire net income received from all sources within the Philippine Islands by every individual, a nonresident alien, including interest on bonds, notes, or other interest-bearing obligations or residents, corporate or otherwise; and levied also upon the total net income received in the preceding calendar year from all sources by every corporation, joint stock account (*cuenta en participacion*), association or insurance company organized in the Philippine Islands, and upon the total net income received in the preceding calendar year from all sources within the Philippine Islands by every corporation, joint-stock company partnership, joint account (*cuenta en participacion*), association or insurance company, organized under laws of any foreign country, including interests on bonds, notes, or other interest-bearing obligations of residents, corporate or otherwise.

The other rate is called the additional rate and is levied upon the total net income of every individual, or in the case of a nonresident alien, the total net income received from all sources within the Philippine Islands, but not to the income of corporations, joint-stock companies, partnerships, joint accounts (*cuenta en participación*), associations or insurance companies, except when gains and profits are allowed by them to accumulate beyond the needs of the business and for the purpose of evading the payment of the additional tax. The rates are  $\frac{1}{2}\%$  per annum upon the amount by which such total net income exceeds ten thousand pesos and does not exceed twenty thousand pesos; 1% per annum upon the amount by which such total net income exceeds twenty thousand pesos and does not exceed thirty thousand pesos;  $1\frac{1}{2}\%$  per annum upon the amount by which such total net income exceeds thirty thousand pesos and does not exceed forty thousand pesos; 2% per annum upon the amount by which such total net income exceeds forty thousand pesos and does not exceed fifty thousand pesos;  $2\frac{1}{2}\%$  per annum upon the amount by which such total net income exceeds fifty thousand pesos and does not exceed sixty thousand pesos; 3% per annum upon the amount by which such total net income exceeds sixty thousand pesos and does not exceed seventy thousand pesos;  $3\frac{1}{2}\%$  per annum upon the amount by which such total net income exceeds seventy thousand pesos and does not exceed eighty thousand pesos; 4% per annum upon the amount

by which such total net income exceeds eighty thousand pesos and does not exceed ninety thousand pesos; 4-1/2% per annum upon the amount by which such total net income exceeds ninety thousand pesos and does not exceed one hundred thousand pesos; 5% per annum upon the amount by which such total net income exceeds one hundred thousand pesos and does not exceed one hundred and twenty thousand pesos; 5-1/2% per annum upon the amount by which such total net income exceeds one hundred and twenty thousand pesos and does not exceed one hundred and forty thousand pesos, 6% per annum upon the amount by which such total net income exceeds one hundred and forty thousand pesos and does not exceed one hundred and sixty thousand pesos; 6-1/2% per annum upon the amount by which such total net income exceeds one hundred and sixty thousand pesos and does not exceed two hundred thousand pesos; 7% per annum upon the amount by which such total net income exceeds two hundred thousand pesos and does not exceed two hundred and fifty thousand pesos; 8% per annum upon the amount by which such total net income exceeds two hundred and fifty thousand pesos and does not exceed three hundred thousand pesos; 9% per annum upon the amount by which such total net income exceeds three hundred thousand pesos and does not exceed four hundred thousand pesos; 10% per annum upon the amount by which such total net income exceeds four hundred thousand pesos and does not exceed five hundred thousand pesos; 11% per annum upon the amount by which such total net income exceeds five hundred thousand pesos and does not exceed seven hundred thousand pesos; 12% per annum upon the amount by which such total net income exceeds seven hundred thousand pesos and does not exceed nine hundred thousand pesos; 13% per annum upon the amount by which such total net income exceeds nine hundred thousand pesos and does not exceed one million two hundred thousand pesos; 14% per annum upon the amount by which such total net income exceeds one million two hundred thousand pesos and does not exceed one million five hundred thousand pesos; 15% per annum upon the amount by which such total net income exceeds one million five hundred thousand pesos and does not exceed two million pesos; 16% per annum upon the amount by which such total net income exceeds two million pesos and does not exceed two million five hundred thousand pesos; 17% per annum upon the amount by which such total net income exceeds two million five hundred thousand pesos and does not exceed three million pesos; 18% per annum upon the amount by which such total net income exceeds three million pesos and does not exceed four million pesos; 19% per annum upon the amount by which such total net income exceeds four million pesos and does not exceed five million pesos; 20% per annum upon the amount by which such total net income exceeds five million pesos.

In computing the additional taxes, dividends or net earnings received by individuals from corporations, jointstock companies partnerships, joint accounts (*cuentas en participación*) associations or insurance companies shall be included.

*Assessment.*—(a) All assessments shall be made by the Collector of Internal Revenue and all persons shall be notified of the amount for which they are respectively liable on or before the first day of June of each successive year, and said amounts shall be paid on or before the fifteenth day of June, except in cases or refusal or neglect to make such return and in cases of erroneous, false, or fraudulent returns, in which cases the Collector of Internal Revenue shall, upon the discovery thereof, at any time within three years after said return is due, or has been made, make a return upon information obtained as provided for in this law or by existing law, or require the necessary corrections, to be made, and the assessment made by the Collector of Internal Revenue thereon shall be paid by such person or persons immediately upon notification of the amount of such assessment; and to any sum or sums due and unpaid after the 15th day of June in any year, and for ten days after notice and demand thereof by the Collector there shall be added the sum of five per centum on the amount of tax unpaid, and interest at the rate of one per centum per month upon said tax from the time the same become due, except from the estates of insane, deceased, or insolvent persons.

(b) All persons, corporations, joint-stock companies, partnerships, joint accounts (*cuentas en participacion*), associations-insurance companies, and general copartnerships (*companias colectivas*), in whatever capacity acting, including leases or mortgagors of personal property, trustees acting in any trust capacity, executors, administrators, receivers, conservators, employers, and all officers and employees of the government of the Philippine Islands having the control, receipt, custody, disposal, or payment of interests, rents, salaries, wages, premiums, annuities, compensations, remunerations, emoluments, or other fixed or determinable annual or periodical gains, profits, and income of any nonresident alien individual, other than income derived from dividends or net profits subject to the tax are hereby authorized and required to deduct and withhold from such annual or periodical gains, profits, and income such sum as will be sufficient to pay the normal tax thereon, and shall make return thereof on or before March first of each year, and, on or before the time fixed by law for the payment of the tax, shall pay the amount withheld to the officer of the Government of the Philippine Islands authorized to receive the same; and they are each hereby indemnified against every person, and they are each hereby indemnified against every persons, corporation, joint-stock company, partnership, joint account (*cuenta en participación*), association, or insurance company,

or demand whatsoever by reason of the payment of the said tax.

(c) The normal tax hereinbefore imposed shall also be deducted and withheld from fixed or determinable annual or periodical gains, profits, and income derived from interest upon bonds and mortgages, or deeds of trust or other similar obligations of domestic or resident foreign corporations, joint-stock companies, partnership, joint accounts (*cuentas en participacion*), associations and insurance companies if such bonds, mortgages, or other obligations contain a contract or provision by which the obligor agrees to pay any portion of the tax imposed by this law upon the obligee or to reimburse the obligee for any portion of the tax or to pay the interest without deduction for any tax which the obligor may be required or permitted to pay thereon or to retain therefrom under any law of the Philippine Islands, or of any state or country, whether payable annually or at shorter or longer periods, whether such bonds, obligations or securities had been heretofore or are hereafter issued or marketed, and the interest thereon paid, within or without the Philippine Islands, and whether such interest is payable to a non-resident alien individual or to a citizen or resident of the Philippine Islands, subject to the provisions of the foregoing subdivision (b) of this section requiring the tax to be withheld at the source and deducted from annual income and returned and paid to the Government, unless the person entitled to receive such interest shall file with the withholding agent, or before February first, a signed notice in writing claiming the benefit of an exemption under section seven of this law.

(d) All persons, corporations, joint-stock companies, partnerships, joint accounts (*cuentas en participación*), associations, or general copartnerships (*compañías colectivas*) undertaking for profit or otherwise the collection of foreign payment of interest or dividends by means of coupons, checks, or bills of exchange shall obtain a license from the Collector of Internal Revenue, and shall be subject to such regulations enabling the Government to obtain the information required under this law, as the Collector of Internal Revenue, with the approval of the Secretary of Finance, shall prescribe; and whoever knowingly undertakes to collect such payments as aforesaid without having obtained a license therefor, or without complying with such regulations, shall be deemed guilty of a misdemeanor and for each offense be fined in a sum not exceeding ten thousand pesos, or imprisoned for a term not exceeding one year, or both, in the discretion of the court.

(e) The tax herein imposed upon gains, profits, and incomes not falling under the foregoing and not returned and paid by virtue of the foregoing or as otherwise provided by law shall be assessed by personal return under rules and regulations to be prescribed by the Collector of Internal Revenue and approved by the Secretary of Finance. The intent and purpose of this law

is that all gains, profits, and income of a taxable class, as defined by this law, shall be charged and assessed with the corresponding tax, normal and additional, prescribed by this law, and said tax shall be paid by the owner of such gains, profits and income, or the proper representative having the receipt, custody, control, or disposal of the same. For the purpose of this law ownerships of such gains, profits, and income or liability to pay the tax shall be determined as of the year for which a return is required to be rendered.

The provisions of this section, except subdivision (c), relating to the deduction and payment of the tax at the source of income shall only apply to the normal tax hereinbefore imposed upon nonresident alien individuals.

Assessment for the corporation shall be made as follows:

(a) All assessments shall be made by the Collector of Internal Revenue, and the several corporations, joint accounts (*cuentas en participación*), associations, and insurance companies shall be notified of the amount for which they are respectively liable on or before the first day of June of each year, and said assessment shall be paid on or before the fifteenth day of June; *Provided*, That every corporation, joint-stock company, partnership, joint account (*cuenta en participación*), association, and insurance company, computing taxes upon the income of the fiscal year which it may designate in the manner hereinbefore provided, shall pay the taxes due under its assessment within one hundred and five days after the date upon which it is required to file its list or return of income for assessment; except in cases of refusal or neglect to make such return, and in cases of erroneous, false, or fraudulent returns, in which cases the Collector of Internal Revenue shall, upon the discovery thereof, at any time within three years after said return is made or due, make a return upon information obtained as provided for in this law or by existing law, or require the return made to be corrected and the assessment made by the Collector of Internal Revenue thereon shall be paid by such corporation, joint-stock company, partnership, joint account (*cuenta en participación*), association, or insurance company immediately upon notification of the amount of such assessment; and to the tax due and unpaid after the fifteenth day of June of any year, or after one hundred and five days from the date on which the return of income is required to be made by the taxpayer, and after ten days' notice and demand thereof by the Collector, there shall be added five per centum on the amount and interest at the rate of one per centum per month upon the said tax from the time the same becomes due: *Provided*, That upon the examination of any return of income made pursuant to this law, if it shall appear that amounts of tax have been paid in excess of those properly due, the taxpayers shall be permitted to present a claim for refund thereof.

(b) After the assessment shall have been made, as provided

in this law, the returns, together with any corrections thereof which may have been made by the Collector, shall be filed in the office of the Collector of Internal Revenue and shall constitute public records and be open to inspection as such upon the order of the Governor-General under rules and regulations to be prescribed by the Secretary of Finance.

(c) If any of the corporations, joint-stock companies, partnerships, joint accounts (*cuentas en participation*), associations, or insurance companies aforesaid shall refuse or neglect to make a return at the time or times hereinbefore specified in each year, or shall render a false or fraudulent return, such corporation, joint-stock company, partnership, joint account (*cuenta en participación*), association, or insurance company shall be liable to a penalty of not exceeding twenty thousand pesos; *Provided*, That the Collector of Internal Revenue shall have authority to grant a reasonable extension of time in meritorious cases, as he may deem proper.

(d) When a second assessment is made in case of any list, statement, or return, which in the opinion of the Collector was false or fraudulent, or contained any understatement shall be recovered by any suit unless it is proved that the said list, statement, or return was not false or fraudulent and did not contain any understatement or undervaluation; but this provision shall not apply to statements or returns made or to be made in good faith regarding annual depreciation of oil or gas wells and mines.

The complicated nature of the income tax may be gleaned from the foregoing account of the same. However, it is yet considered the best tax as it comes nearest in measuring the ability of the tax payers. It can be made more productive still by lowering the personal exemptions and increasing the rates of the additional tax and lowering some of the amounts subject to the higher rates without causing any discouraging effect on business or industry. The rates of the normal tax on corporation may be increased also as they are in a better position to earn more income than any individual. They have furthermore all the advantages of corporate existence over individuals.

## PHILOSOPHY AND SOCIAL SCIENCE

### *Subversive and Destructive Philosophy*

*By Rev. Fr. S. Tamayo, O. P., Ph. D., D. C. L.*

Many people wonder why modern society is living so unquiet on the verge of a cataclysm, when it is said to us, that civilization and progress are, we are told, at its climax.

Some time ago, I read a book, entitled *THE LONG ROAD HOME*, written by an american multimilionare, who in his mature years and natural honesty tried to look after the truth. He had spent more than forty years reading and making inquiries about the truth; but, among so many opinions and contradictions of philosophers, he became an agnostic, coming to the conclusion that it was not possible to reach the truth.

This honest man, who at the end of his years became a catholic, had read all the modern philosophers and scientists. He learned that what we used to call the moral law is archaic and obsolete: that there are no more standards or fixed principles of morality. The golden rule today is that there is no golden rule, as Bernard Shaw says. Not few modern philosophers profess pure Pragmatism, and pragmatists believe no more in fixed moral laws and undying truth. It is said that all is in perpetual flux, as it is taught by evolutionists; and therefore we can have no fixed standards about anything. Even "free will" is said to be an old superstition, which has been abolished by our pretentious modern philosophers and scientists.

They say that in sin is nothing inmoral, but simply a human error; that morals are formed by different circumstances and conventionalisms, according to the opinions of men; and that religion is a pure superstition without any rational ground. The natural sequence of all those theories and dreams is that man has no ulterior end out of the present life. He is born, lives and dies like the rest of the animals, being only an animal a little more perfect than a hog or a cat.

Extrange as it may be, there are millions and millions of men in Europe and in America, who practically profess those theories.

No wonder therefore if our modern world is morally threatened with bankrupt, as the social and political problems are far

from being settled. In the family, the spread of divorce is alarming; the birth control, seeped down among the masses, means the ultimate suicide of the race; and as to the morals, we are said that there are no more moral aspects in our problems.

In the mean time, says the millionaire Mr. J. Moody, business rascality and political corruption are flourishing in modern society as never before; morality among the sexes is being more and more laughed to scorn. And yet, many people say: After all, are not we living an era of splendid progress? Are not we contemplating new wonderful inventions, adding to the comforts and zest of life? This is the age of the motors, the radios, the huge airplanes and comforts of every sort.

All that is true; but only material progress does not make man better and happy. The proof is that in this golden age of ours, the world is unquiet; popular masses are threatening the peace of the nations; and the whole society is heading and speeding for a fall toward a cataclysm, as few times in the world History has been witnessed.

Taken out from the mind of the people the idea of God, who with His omnipotence created the world; who gave fixed man better and happy. The proof is that in this golden age of them may attain the end for which they were created; supressing from mankind God's providence and a future better life after death, nothing is left, that may control the human passions; and instead of having a cultured and truly civilized world, we shall have a society of wild beasts, worst than the beasts of the forest, for men can make use of their reason to satisfy their beastly instincts.

### THE BUILDERS OF MODERN SOCIETY.

The experiences of Mr. Moody, which for many years made of him an agnostic, were the fruit of his constant reading of modern pagan philosophers. At first, he says, "my Bible was Herbert Spencer; my books of devotion, Ibsen, Nietzsche and the like...; Grant Allen, W. K. Clifford, Darwin, Tyndall, Huxly, and other deep thinkers-Bacon, Locke, Descartes, Hegel, Schopenhauer and Kant. Later I devoured the works of William James, Santayana, Victor Hugo, Zola Condorcet etc. Darwinism had gripped me in my youth; and then, Herbert Spencer, with his synthetic philosophy had summarized for me the accumulated wisdom of the ages. But somewhat later William James convinced me that Spencer knew little or nothing for his lack of education even in mechanical principles; and in general for the vagueness of all his fundamental ideas, his wholly wooden system, as if knocked together out of cracker hemlock of boards..."

Mr. Moody agreed with W. James, and accepted the whole philosophy of pragmatism. Then he learned from George Santayana the absurdities of metaphysics. Needless to say that J.



Jacques Rousseau and Voltaire, were for Mr. Moody his french gods.

As a result of the reading of those extravagant philosophical theories, Mr. Moody became a perfect agnostic; he didn't believe in God any more, nor in any positive religion; and as a consequence his conscience became "as elastic as a rubber band", and his morals went completely to pieces. But how true it is the dictum of Tertulian, when he says that the human soul "is naturally christian!" Mr. Moody had common sense, and sincerely was looking after the truth.

### TO THE RIGHT WAY

Divine providence guide men of good will to the knowledge of truth by the most unsuspected means. Amidst a multitude of opinions and contradictions, life for Mr. Moody-like for many others—was an unsolved riddle. But it happened that he read some of the Essays of Mr. Chesterson, and he learned from him, that most of the modern philosophers and scientists were laying down the law to us about a thousand things which were wholly based on assumptions; they had built up a structure of nonsense, based in evolutionary hypothesis, which even Darwin and T. H. Huxly would have gazed at in astonishment. "No wonder," says Mr. Moody, "the world could not longer think straight, and was floundering around with all sorts of nostrums to make life livable. We had been building our whole modern civilization on quicksand, and assuming it was a rock."

Another source of enlightenment for Moody was the reading of the "Summa Contra Gentes" of St. Thomas Aquinas, whose reference he had seen in a book of Joseph A. Rickaby, entitled "God and His Creatures". The study of Mills Logic in his youth, and the lifelong habit of analysis and research in business fields made easy for Mr. Moody to approach problems by the road of common sense, and enabled him to understand the philosophy of St. Thomas.

"No doubt," says Mr. Moody, "this will sound naive to the scholar; but my elation, as the completely logical and extraordinary rational philosophy of St. Thomas unfolded in my mind, was like that of a school boy, who had at last, after long mental confusion, seen the answer to some intricate problem unfold before him as a complete picture."

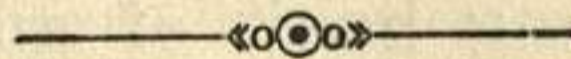
"I suppose the average layman does not know it; the whole modern world does not believe it; perhaps many Catholics themselves do not realize it; but one cannot follow with an honest, unprejudiced and open mind, the fundamental conceptions of Thomistic philosophy and accept them, without ultimately finding one's self—at least intellectually—at the door of the Catholic Church."

"I had already washed my mind, as thoroughly as I could, of the crudities and fictions of modern thought; and now, as I

followed the master mind, the true purpose and meaning of life opened before me. I began to see it all with the unalloyed simplicity of a child. God was indeed the beginning and end of all things; we came from God and our true destiny was to return to Him. And now, for the first time in my life, I really understood that cry of St. Augustine: "Thou hast created us for Thyself, O God, and our hearts are restless till they rest in Thee".

Needless to say; Mr. Moody was received in Catholic Church in June 6, 1931, and he found there, what he had never before possessed; that is "a perfect peace", a "certainty, where all were doubts", and "order" where once was only shadow, darkness and confusion."

How many others would follow the example of Mr. Moody, only if they could find the truth!



# *Rostand and the Contemporary Theater*

*by Paz Latorena, Ph. D.*

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The latest anthology of the best American plays brought forth by Burns and Mantle, recognized authorities on the subject, lists in its index a good number of revivals on the American stage during the last theatrical season. This is not something new, however. Those who have faithfully followed Burns and Mantle from year to year must have noted with growing pleasure the increasing popularity of these revivals, a healthy sign, according to a Continental critic, that, at last, the American theater is coming into its own. And when we further take into account that notable among those included in these revivals are William Shakespeare and Edmond Rostand, two authors of whom lovers of the theater can hardly speak without a sort of amorous emotion in their voice, then we are more than ready to agree with our Continental critic.

It is easy to understand the prominence of Shakespeare in these revivals. The synthetical and adaptive genius of the bard of Avon makes him the dramatist of all peoples and of all times. But what is the secret of the success of Monsieur Edmond Rostand on the contemporary stage, of his appeal for the average theater-goer of the thirties, an appeal to which even the blasé Broadway "first-nighter" is not wholly proof against?

It was John Galsworthy, the distinguished novelist and dramatist, who, early this century foresaw a two-fold course of development for the drama: a realism "faithful to the seething and multiple life around us," and "a twisting and delicious stream" bearing on its breast "new barques of poetry." To the former of these two predicted movements apparently be-

longed every important dramatist of the day, including John Galsworthy himself. But though Gerhart Hauptman and other such confirmed realists turned to idealism occasionally, the "twisting and delicious stream" with its "new barques of poetry," was followed with distinguished success almost solely by Monsieur Edmond Rostand.

It was at the very end of the year 1897 that *Cyrano de Bergerac* was first produced in Paris, thus making theatrical history as the most brilliant success of the decade and beginning a series of triumphant performances throughout Europe and America. The play when presented at the Garden Theater, New York, on December 10, 1910, had a magnificent cast headed by Mme. Bernhardt and M. Coquelin. The performance was given in French.

The pendulum had swung back and the play introduced *Cyrano* to a world satiated and, perhaps, nauseated by the tragedies of Balzac, Dumas fils, Flaubert, and Zola and therefore ready to enjoy romance once more. In the history of the literature of the nineteenth century, *Cyrano* is a well-remembered figure. He will remain one of the great characters which modern French literature offers the world.

For Edmond Rostand is essentially the dramatist of tragic figures and he has contributed to the list of immortal characters of the theater some of its noblest heroes. To him tragedy is the failure of the idealist to attain the height of his aspiration. *Cyrano* is a man who has and who knows that he has tremendous powers but who is never able to appear to the world as he is. *Rudel* who in *Princesse Lointaine* loves the Princess of Tripoli dies not only before attaining his ideal but also before he knows what his ideal is worth save as an ideal. *L'Aiglon*, the poor, little weak hero yearns after the great inheritance which he feels is his, fails and surrenders himself to inevitable currents of life and death and makes himself a poignant example of the fate that awaits weak humanity. And in the *Chantecler*, the central figure of the lovely extravaganza that closes Rostand's dramatic career, who, lost in the nightingale's flow of gracious melody forgets to sound the note that he fondly believes arouses the sun and realizes that the sun rises without being aroused, we have every man wakes from his dream of beauty to be undeceived as to reality.

# VITORIA AND WAR

by *Fr. Honorio Muñoz, O. P., S. T. L.*

It is a fact admitted to-day in cultured countries that Vitoria is the founder of modern International Law. The sound moral principles which he established came little by little to be applied by the christian nations of the world in their dealings with each other. Vitoria treated of Conquest (which is the subject of another little book by the same author), War, Civil Authority, Civil Power, the Power of the Pope, the Power of the Church, and of other varied questions.

In this book the author studies particularly Vitoria's views on War, its causes, its effects, explaining the question in the light of those authors who later on came to form the Spanish School of International Law. They were men of letters, jurists, theologians, historians and political writers of Spanish nationality, not excluding H. Grotius, for although Spain was not the place of his birth, yet he himself is the first to acknowledge that the main sources of information were the writings of Francisco de Vitoria.

Vitoria's doctrine on war, its interpretation and even modification by his successors are all clearly put out in this book, as can be gathered from a glance at its contents.

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# VITORIA AND THE CONQUEST OF AMERICA

by *Fr. Honorio Muñoz, O. P., S. T. L.*

The author analyses in this book the first Reading of Vitoria ON THE INDIANS, studying the whole question of the discovery, conquest, and evangelisation of America in the light of christian morals and of International Law. The legal aspect of the conquest of America by the Spaniards was in the time of Vitoria the question of the day which, however, he settled masterfully. His opinion became accepted and his decisions came to be the basic principles of the modern Law of Nations. Here is a list of the main topics discussed in this book.

- I. Biographical Sketch
- II. The "Relectiones"
- III. The Illegitimate Titles
  - 1) Universal power of the Emperor
  - 2) Universal temporal authority of the Pope
  - 3) The right of discovery
  - 4) The refusal of the Indians to accept the faith of Christ.
  - 5) Voluntary choice
  - 6) The sins of the Indians
  - 7) Special grant of God
- IV. The Legitimate Titles
  - 1) Natural society and fellowship
  - 2) The propagation of Christianity
  - 3) To prevent christians from returning to Paganism
  - 4) To give a christian prince to the converts
  - 5) To avoid tyranny and vexatious laws
  - 6) True and voluntary election
  - 7) Friendship and fellowship

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But of all Rostand's tragic figures, Cyrano runs away with our sympathy. For his is the type of the largest class of people in the world. With him it is a nose—a grotesque, utterly ridiculous nose—with us it is something else, not so grotesque and ridiculous, perhaps, but as tragic—the girl whose beautiful mind cannot transcend the homely exterior, the genius who is convinced that to be great is to be misunderstood, the king who regrets that his people do not know him as he is.

In the old romanticism typified by the fairy tale the beast became Cupid towards the end, but in the new romanticism—Rostand's romanticism—the beast remains a beast until the curtain falls down, removing him from vision although not from memory. But isn't this presentation of invariable failure pessimistic, we ask. Hardly. It is due to something inherent in all great literature, this tragic quality of its central characters.

And this tragic quality in characterization gives us highly dramatic moments—the second reason for Rostand's success on the stage—dramatic moments that remain with us permanently. Cyrano throwing his bag of money on the stage is permanent, L'Aiglon breaking his mirror, Rudel on the galley, face bared to the stars, so symbolic of his aspirations. All of them are as tragic and final as Romeo and Juliet in the tomb of the Capulets, as Hamlet when he utters, "the rest is silence."

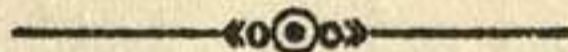
Rostand never explains his dramatic moments—there is nothing so inexplicable as a *beau geste*. After all, explanation belongs to the philosopher.

Notwithstanding Mr. Shaw's contention that the new drama is essentially a drama of ideas we hold that the drama of all times is fundamentally a matter of feelings and not ideas, and that unless such ideas are of such nature that they will arouse a strong and immediate emotional accompaniment, they will not, however, brilliantly phrased, amount in their sum total to actual drama. Rostand's dramatic moments give us this—moments when we think only one thought, suffer one passion, absorbed in the most absorbing of all human studies—the souls of men and women in conflict.

The experience leaves us calm and quieted. Things seem a little different—every day matters which bothered us so much

for the moment become small and petty. We feel in a confused way that life is something fine and big and noble. The feeling that we may confidently trust in a power whose detailed purposes have not been explained to us. These moments Coleridge called moments of poetic faith.

Does the fact that Rostand make use of verse for the medium of his plays constitute another reason for their popularity? Hasn't the contemporary theater always insisted on prose that is the language of common speech? Or may we take the overwhelming success of *Green Pastures* as a sign that the "delicious and twisting stream" bearing on its breast "new barques of poetry" has at last found its way into the heart of the contemporary theater?



# PHARMACY

## Popular Beliefs About Philippine Plants

By E. T. Karganilla

Our forefathers left us a rich legacy of folklore, notions, and stories about the virtues of plants and their products. These have supplied young minds with materials for entertainment if not food for thought. Some of them make good materials for maturer heads, for scientific inquiry and serious study. Many of them are furnished by students from different parts of the Islands enabling the writer to trace their range and similarities. As these beliefs and notions were handed from father to son, from mother to daughter for generations, they are still prevalent among the masses in the Philippines.

The following are arranged according to their phylogenetic relations in the plant kingdom. The local names of the plants are supplied with scientific names so that students of foreign countries may know to what particular plants the beliefs are referred to. In case the beliefs are so general that they are not attached to any particular species they are placed under Miscellaneous.

Mushrooms—*Collybia albuminosa* (Berk.) Petch.

1. Much lightning causes the growth of termite fungus.

Fern—*Athyrium esculentum* (Retz.) Copel.

2. A person who can secure the flower of a fern on good Friday at noon is endowed with anting-anting which will empower him to perform supernatural achievements.

Pitogo—*Cycas rumphii* Miq.

3. Babies of less than one year old should wear beads of pitogo seeds to protect them from evil spirit.

Pine—*Pinus insularis* Endl.

4. The rustling of pine's leaves predicts the coming of a typhoon.

Corn—*Zea mays* Linn.

5. In planting, close the mouth, never show the teeth so that the cob will be thoroughly filled up with kernels.

6. Plant the kernel that is well hidden in the cob first with closed eyes and very early in the morning before the birds and chickens are awake, to avoid the destruction of the crop by them.

7. To produce pop-corn by roasting, laugh while stirring the kernels in the container.

8. Before planting in the kaiñgin field, erect a cross and then walk around the field three times with prayer so that the crop will not be destroyed by wild animals.

9. The planter should wear thin clothing so that the ears would have thin covering.

10. In planting, close the eyes so that chickens will not scratch them while germinating.

11. Hold the digger at the top in making holes for planting to have the cob thoroughly covered with kernels.

Kogon—*Imperata cylindrica* (Linn.) Beauv.

12. For person bitten by a snake immediately place or tie the wound with kogon to stop the circulation of the venom.

Sugar cane—*Saccharum officinarum* Linn.

13. Do not eat anything while planting to avoid the destruction of the crop by carabaos, pigs, or rats.

14. Plant the first shoot while urinating so that the canes will be very juicy.

15. Do not allow a woman with menstruation to ramble through the sugar-cane field otherwise the canes will turn sour, thus good only for vinegar.

Rice—*Oryza sativa* Linn.

16. Plant rice after taking the heaviest meal so that the grains will be large, filling up the caryopsis.

17. Grains for planting should be placed in a container with betel nut, comb and chisel so that the grains would be plump, the plants to stand erect and the stems be stout.

18. Seeds for sowing should be brought to the fields before sunrise to avoid the destruction of the crop by birds.

19. It is prohibited to fly kite before the plants are in bloom otherwise the caryopsis would be empty, thus causing a very poor harvest.

20. Do not make the straw as a blowing flute because it would attract the spirit that diminishes the harvest.

21. Place much food in the barn in inaugurating it so that much rice will be stored in it every year.

\* 22. When a child is pale and his head aches he may have

\* Osias, C., and A. Cagingin. Philippine superstitions, *The National Forum*, Vol. 2, No. 6, pp. 18-27, Dec. 1923.

become frightened and lost his spirit. The only way to cure him is to call the spirit back. The mother should take 9 grains of rice, carefully remove the testa and place them in a glass containing clear water. The glass is then placed near the window, generally early in the evening. It is supposed perhaps that the spirit will get hungry and will come back to eat the rice.

23. Place a cross in the field and then pray so that there will be a rich crop. On St. Nicolas day place a piece of St. Nicolas bread on the cross so that insects will not feed on the grains.

24. If a horse gets colic by eating palay, beat the belly with palay so as to relieve it from its suffering.

25. Eating raw grains may facilitate the presence of eelworm (*Ascaris lumbricoides*) in the intestines.

Bamboo—*Bambusa* sp.

26. If the bamboos bear flowers there will be famine (poor rice crop) in the regions nearby.

27. Bite the thorn that causes wound on your foot to avoid from getting infected.

28. Place slices of bamboo shoot on the belly of a woman who has hard time in giving birth to hasten delivery.

29. Cutting of bamboo stems should be done in August to be durable and not susceptible to the attack of weevils.

Buri—*Corypha elata* Roxb.

30. Join the leaf end to end and tie it around a place where the deer is hiding. The deer will never get out of the encircled spot.

Rattan—*Calamus* sp.

31. To avoid getting sea-sick tie secretly rattan around your waist.

Anibong—*Caryota cumingii* Lodd.

32. With this palm in front of the house the dwellers will never have a permanent home-keep on transferring.

Betel-nut—*Areca catechu* Linn.

33. If the nuts always crack before maturity it is believed that a woman has taken the first fruit of the palm.

34. Playing with the nut before chewing it makes one dizzy.

Coconut—*Cocos nucifera* Linn.

35. Place a cross-slats of nipa (*Nypa fruticans* Wurm) leaves in the hole before laying the seedling so that it will bear fruits early.

36. Do not bury the seedling when planting but just place it on the surface of the earth to make it bear fruit early.

37. Carry on as many children as you can while planting so that the palm will bear plenty of fruits.

38. Hold the seedling with the arms while bringing it to the hole so that the fruits will be supported by the axils of the leaves.

39. Put porridge in the whole before planting to make it bear makapuno.

40. Plant the seedlings during full-moon in order that they will bear big nuts.

41. If a pregnant woman cuts the coconut into two unequal parts her child will be a girl; if equal parts, a boy.

42. Place a mineral rock in the hole under the seedling so that the tree will bear plenty of fruits.

43. Drinking coconut milk when you are hungry will give you stomach-ache.

44. Feeding the sow with coconut cake will mean refusal to nourish her young.

Piña—*Anonas comosus* (Linn.) Merr.

45. If nipa leaves are burned in a house centipedes (*Scolopendra cingulata*) would fall from the roof at night.

La Suerte—*Aglaonema oblongifolium* (Roxb.) Kunth.

46. The fruiting of this plant indicates fortune to the owner or to any of the residents where the said plant flourishes.

Gabi—*Colocasia esculenta* (Linn.) Schott.

47. Do not say anything about irritation while cooking the petiole so that you would not feel something like it when you eat it.

Piña—*Ananas comosus* (Linn.) Merr.

48. The hole should not be deep in planting so that the eyes (flowers) would not be deep in the fruit.

49. The hole should be dug with one stroke only to insure the fruiting in one year. The number of strokes in digging the hole determines the number of years before the plant bears fruits.

Bananas—*Musa* spp.

50. When planting sit down, never look up, and cover the hole with spread fingers so that it will not grow very high and will produce many suckers.

51. Detach the flower in the morning not in the afternoon and immediately blow the posterior end so that the fruits will grow to their full size, fat, not emaciated.

52. The inflorescence that faces the sun as it rises bears bigger and sweeter fruits.

53. A woman who eats twin bananas will give birth to twin babies.

\* 54. When the sucker of a banana is beginning to grow, at night uncover the top of the sucker with your teeth and then remove it. Big giants will appear to fight against you. If you are victorious the "anting-anting" will be yours; if you are defeated you will become lunatic.

55. When the inflorescence bends, a little ball of fire falls. The one who gets this should place it in his mouth and fight the giants, snakes and spirits. If he wins he is endowed with "anting-anting," but if he shows fear he becomes crazy.

56. If the inflorescence comes out at the side of the trunk a calamity may happen to the owner.

Butuan—*Musa errans* (Blco.) Teodoro var. *botoan* Teodoro.

57. If the leaves of this variety are removed from time to time, the fruits will be full of seeds.

Buñgulan—*Musa sapientum* Linn. var. *suaveolens* (Blco. Teodoro).

58. Plant this variety near the house where they can hear conversations so that they will grow much faster and bear large bunches of fruits.

Gloria—*Musa sapientum* Linn. var. *ternatensis* (Blco.) Teodoro.

59. If the fruits of this variety are already mature, punch the trunk around. On the next day the fruits will start to get ripe.

Ginger—*Zingiber officinale* Rosc.

60. To avoid the evil spirit of the mangkukulam always have ginger with you.

61. A racer with ginger in his possession would win the race, because with such in his possession his rivals do not have much resistance.

Nangka—*Artocarpus integra* (Thunb.) Merr.

62. A fruit wrapped with the leaves of is-is (*Ficus ulmifolia* Lam.) ripens easily.

Balete—*Ficus indica* Linn.

63. Under this tree the ground is clean, no other plant can grow because a supernatural being is living on the tree and keeps the ground clean.

64. Removing a branch of the tree would offend the supernatural being who would harm you at night.

Is-is—*Ficus ulmifolia* Lam.

65. Peddlers of home-made cakes or fruits who put leaves of this plant in the containers dispose of their commodities easily.

Cadena de amor—*Corculum leptopus* (Hook. & Arn.) Stuntz.

66. If this vine would reach the roof of the house somebody in that house may die soon.

\* Loc. cit.

Makabuhay—*Tinospora Rumphii* Boerl.

67. Put a ring of the stem around the neck of horses, cows, or carabaos to free them from the attack of rinderpest.

Ates—*Anona squamosa* Linn.

68. Wrap some salt (NaCl) with the leaf and keep it around your waist to repeal the evil spirit of the mangkukulam.

69. Wrap green fruits with fresh banana leaf to make them sweet.

Cabbage—*Brassica oleracea* Linn.

70. Tying the leaves together may produce a big cone.

Kamachili—*Pithecolobium dulce* (Roxb.) Benth.

71. Put branches of this tree under the house of a newly born child so that assuang cannot get in to suck the liver of the child.

Makahia—*Mimosa pudica* Linn.

72. Secretly place the leaves of this herb in the food of a vulgar to make him sensitive and refined.

Gugo—*Entada phaseoloides* (Linn.) Merr.

73. During the blooming period of rice (*Oryza sativa*) boys are advised to play with the gugo seeds so that the caryopsis will be full, thus assuring a good rice harvest.

Tamarind—*Tamarindus indica* Linn.

74. There should be sugar in the mouth during planting and the hole should be covered with stretched fingers so that the fruits will be sweet and finger-like.

75. If you find a stone in the fruit you will be endowed with a supernatural power towards women.

Andadasi—*Cassia occidentalis* Linn.

76. During cholera epidemic children should wear beads of the seeds so that the evil spirit would not be able to inflict the disease on them.

Katurai—*Sesbania grandiflora* (Linn.) Pers.

77. The first flower should be gathered at sunset with a lighted candle and placed in a big basket so that the tree will bear plenty of flowers even during the lightning season.

78. Trees should be planted away from houses to insure peace among the neighbors.

Dapdap—*Erythrina variegata* Linn. var. *orientalis* (Linn.) Merr.

79. A person who possesses a white stone from the fruit becomes a very successful merchant.

80. The tree with fire-flies in the night of Good Friday is inhabited with enchanted man. If you want to possess an-ting-anting make seven turns to the right around the tree. At



the end of the seventh turn, the enchanted man challenges you to a duel. If you are victorious the anting-anting is yours.

81. When in bloom the wild tribes (negritos) feel irritation on their bodies that subsides after killin ga Christian.

Kadios—*Cajanus cajan* (Linn.) Millsp.

82. During the smallpox epidemics children should wear beads of the seeds to free them from the disease.

Payang-payang—*Flemingia strobiliera* (Linn.) R. Br.

83. Any body who sits on the leaves of this plant feels sleepy, drowsy.

Malvarosa—*Pelargonium radula* (Cav.) L'Herit.

84. If it bears flowers there will be no more peace and happiness in the house where it blooms.

Makahiang-lalaki—*Biophytum sensitivum* (Linn.) DC.

8. If a girl happens to see this herb before a boy puts it in his pocket, she follows him wherever he goes.

Kamias—*Averrhoa bilimbi* Linn.

86. Sweep the fallen flowers away so that it will always bear numerous fruits.

Kamuning—*Murraya paniculata* (Linn.) Jack.

87. A man who has a cane made of this species will never be harmed by snakes.

Dayap—*Citrus aurantifolia* (Christm.) Swingle.

88. If you have a bad odor, place the fruit in the armpit. If accidentally dropped, do not look at it. In this case you get rid of the bad odor but the person who picks it up acquires the bad odor.

Kabuyau—*Citrus hystrix* DB.

89. If chickens will dwell on this plant the fruits will have many wrinkles.

Lukban—*Citrus maxima* (Burm.) Merr.

90. The trunk should be slightly cut after which beat it with sugar cane to make it bear sweet and juicy fruits.

91. If the fruits are sour or bitter dig a canal around the tree and then pour syrup or molasses so that the fruits will be sweet.

92. A conceiving woman should not be allowed to get the first fruit otherwise all succeeding fruit will be sour.

93. A woman with menstruation should not go near the tree otherwise it will have gummosis.

Naranjita—*Citrus nobilis* Lour.

94. The presence of only one seed in a fruit gives fortune or good luck to a gambler.

Santol—*Sandoricum koetjape* (Burn. f.) Merr.

95. To make the tree bear sweet fruits, girdle the trunk by removing the bark and put syrup around after which cover it with a bandage.

96. Pour syrup in the hole before planting so that the tree will bear sweet fruits.

97. If a woman has conceived on the fruit of this tree, the succeeding fruits will lose their typical characteristic taste.

Lansones—*Lansium domesticum* Correa.

98. There should be sugar in the mouth before planting in order that the tree will bear sweet fruits.

99. Place porridge in the hole to make the plant bear fleshy fruits with small seeds.

Luhang-dalaga—*Pedilanthus tithymaloides* (Linn.) Poit.

100. The blooming of this exotic ornamental plant means bad omen to the owners.

Mango—*Mangifera indica* Linn.

101. Table salt (NaCl) should not be scattered under a fruiting tree otherwise the fruits would fall.

102. Any body who gets infection by eating a green mango should hang a mango leaf above the oven. When the leaf is dried, the infection gets well.

103. Immerse the seed in syrup before planting so that the tree will bear sweet fruits.

Sineguelas—*Spondias purpureae* Linn.

104. A person who can secure a leaf composing of three leaflets becomes invisible.

Ligas—*Semecarpus cuneiformis* Blanco.

105. If your skin disease is caused by the sap of this tree, dance and sing around it saying "Ligas, ligas we are husband and wife to-day, but tomorrow we part." The following day the disease will get well.

Kapok—*Ceiba pentandra* (Linn.) Gaertn.

106. If the roots of this tree reach the basement of the house the dwellers are quarrelsome.

Cacao—*Theobroma cacao* Linn.

107. Tie a piece of rag around the stem of the seedling before planting it so that it will bear plenty of fruits.

111. Feed a woman who has just given birth with papaya fruits to stimulate much milk.

Guava—*Psidium guayava* Linn.

112. Do not scatter table salt under the fruiting tree lest the fruits will have black spot if not infected with aphids.

\*113. At noon on Good Friday when you find a plant with two leaves, get the leaves, dip them in coconut oil, and if you touch a girl with them, she will be yours.

114. If a person has been harmed by evil spirit revive him by rubbing his face with pounded leaves.

Chico—*Achras zapota* Linn.

115. If the roots would reach the basement of the house the dwellers would be susceptible to illness and the husband may die first.

Kalachuche—*Plumiera acuminata* Ait.

116. This ornamental plant brings misfortune to the one who cultivates it.

Pandacaqui—*Tabernaemontana pandacaqui* Poir.

117. A thorn in the hand may be removed by placing the sap of this shrub in the wound.

Adelfa—*Nerium indicum* Mill.

118. A young lover who sleeps under this shrub may sleep forever.

119. With the presence of the white flowered variety in the garden, no woman member of the family will ever be married.

Kamote—*Ipomoea batatas* (Linn.) Poir.

120. When planting tie a bamboo tube around the waist so that the plants will bear plenty of large roots.

121. Do not allow women having menstruation to ramble through the kamote field lest the crop will be infected by beetle (*Cylas formicarius* Fabr.).

122. Plant the cuttings at twilight and if possible naked so that the plants will bear numerous big roots.

Egg plant—*Solanum melongena* Linn.

123. Letting the children bite the raw fruit may spoil their teeth.

Tomato—*Lycopersicum esculentum* Mill.

124. Treat burned fingers with macerated leaves to relieve pain and avoid rupture.

\* Loc. cit.

108. A woman with menstruation going around the tree causes death to the plant.

**Papaya**—*Carica papaya* Linn.

109. Tie a piece of a camisa around the stem of the seedling so that it will become female papaya bearing large fruits.

110. Plant the seed on a starry night so that the plant will bear many fruits.

**Dama de noche**—*Cestrum nocturnum* Linn.

125. With this ornamental plant in the garden either a man or woman in the family may not get married.

**Tobacco**—*Nicotiana tabacum* Linn.

126. Water the plants with solution of pepper (*Piper nigrum* Linn.) to produce leaves with strong aroma.

**Ampalaya**—*Momordica charantia* Linn.

127. The planter should have a piece of sugar in his mouth so that the fruits will not be very bitter.

**Patola**—*Luffa cylindrica* (Linn.) M. Roem.

128. If the roots were urinated by a dog the fruits may become very bitter.

**Pakuan**—*Citrullus vulgaris* Schrad.

129. Tie a piece of red cloth around the main stem so that the pulp of the fruit will be red.

**Kondol**—*Benincasa hispida* (Thumb.) Cogn.

130. Detached immature, small fruit should be wiped with cloth every day to make it grow to maturity.

**Upo**—*Lagenaria leucantha* (Duch.) Rusby.

131. In planting drop the seeds into the hole through a bamboo tube so that the fruits will be long.

132. Hang bamboo tubes, bottles and other cylindrical objects on the trellis so that the plant will bear many long fruits.

133. Dust the ovaries with their own pollen grains so that they will not be infected with bugs.

134. Do not point or touch the ovaries lest they may die immature.

**Squash**—*Cucurbita maxima* Duchesne.

135. While planting, sit down flat on the ground with legs well spread so that it will bear big, round fruits.

136. A convalescent patient who eats the fruit will get relapsed.

137. Eating squash before taking examination means failure.

## MISCELLANEOUS

138. On Holy Saturday, while the church bells are all ringing shake all plants, particularly the fruit tress, so that they may grow fast and bear fruits soon.

139. Ornamental plants should be planted at night when the sky is devoid of clouds, with the stars twinkling brightly to make them bear numerous flowers.

140. Revive unconscious persons by smudging them with the plants that were used on Palm Sunday.

141. A stranger should not be allowed to ramble in a field of kamote, sugar cane, and corn, because pigs, crows, or rats would follow his footsteps, thus destroying the crops.

142. No stranger is to be allowed to approach the plants that are being sapped so that the flow of the sap may not be diminished.

143. Start planting with a boy on the day following the new moon so that you will have a good crop.

144. Do not cut trees in which the supernatural beings are supposed to dwell lest they may harm you.

145. If the major crops are poor, the fruit trees are fruitful.

146. Plant fruit trees during the high tide to make them bear large fruits.

147. The plants that were used on Palm Sunday will drive away the evil spirits from the home.

148. On the occasion of the first harvest, some ceremonies are performed and foods of various kinds are offered. This will please the spirits who will hasten and multiply the crops.

\*149. If a tree is crowded with fire-flies (*Lampyrus plagiata*) dig the main root and take the posterior end because it would give you anting-anting.

150. If visitors will clean the plates, the plants of the host will be infested by rats.

151. If you play with the fruit before eating it you will have stomachache.

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\* Loc. cit.

152. A store that is built with the timber of a tree that was frequently crowded with fire-flies is very lucky.

153. A woman who is conceiving should not be allowed to pick fruits from a tree so that the succeeding fruits will not be sour or bitter, and the tree will not die.

154. To dream that you are plucking flowers on the way-side indicates that you are getting married pretty soon.



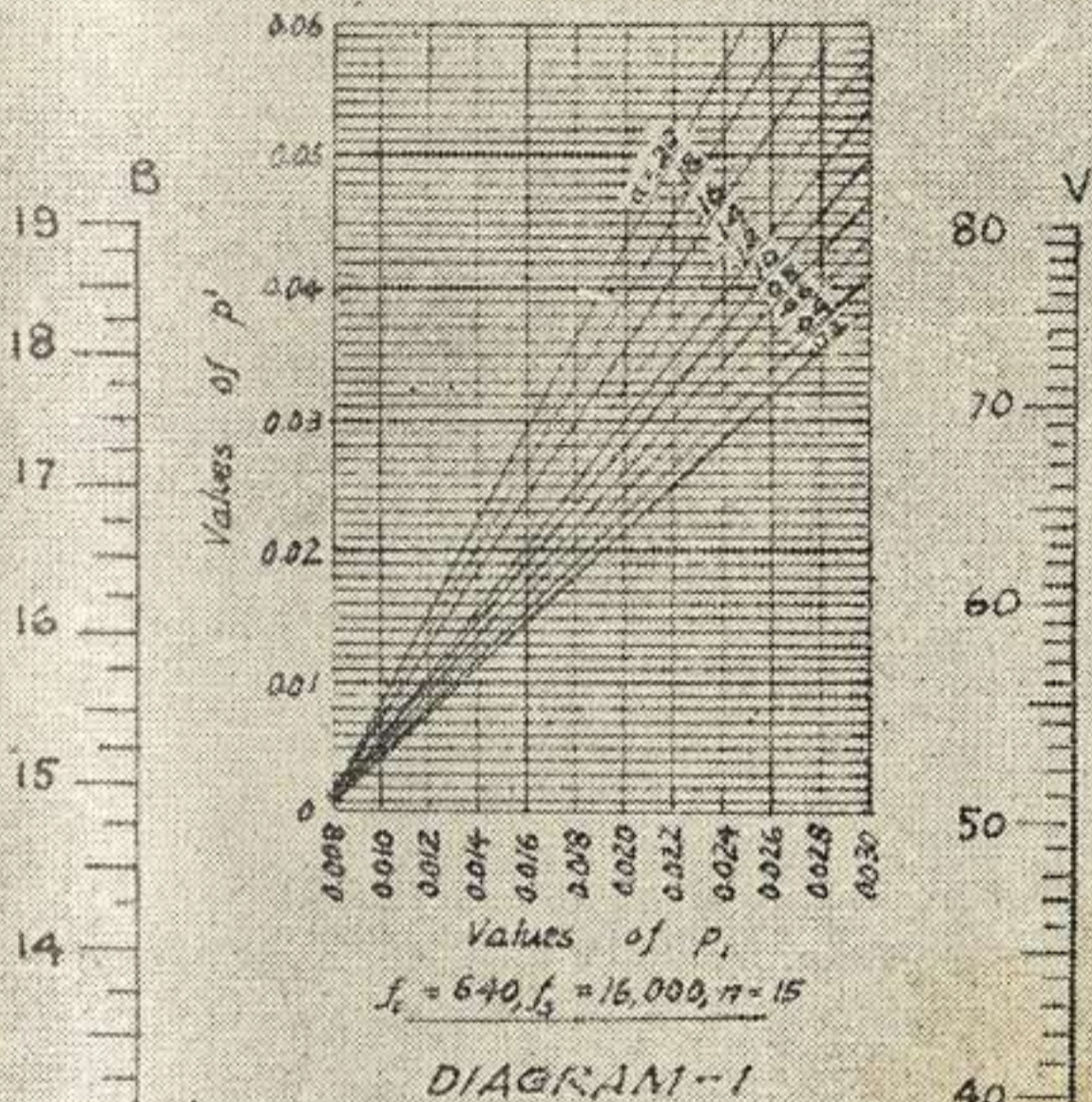
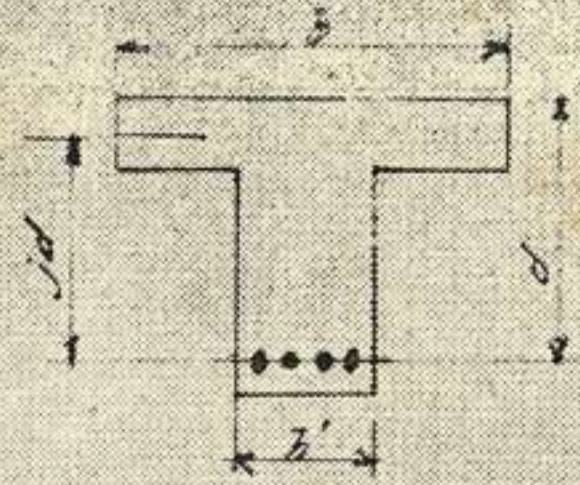
# GRAPH-III

T-BEAM

$f_s = 16,000$  lbs per sq inch

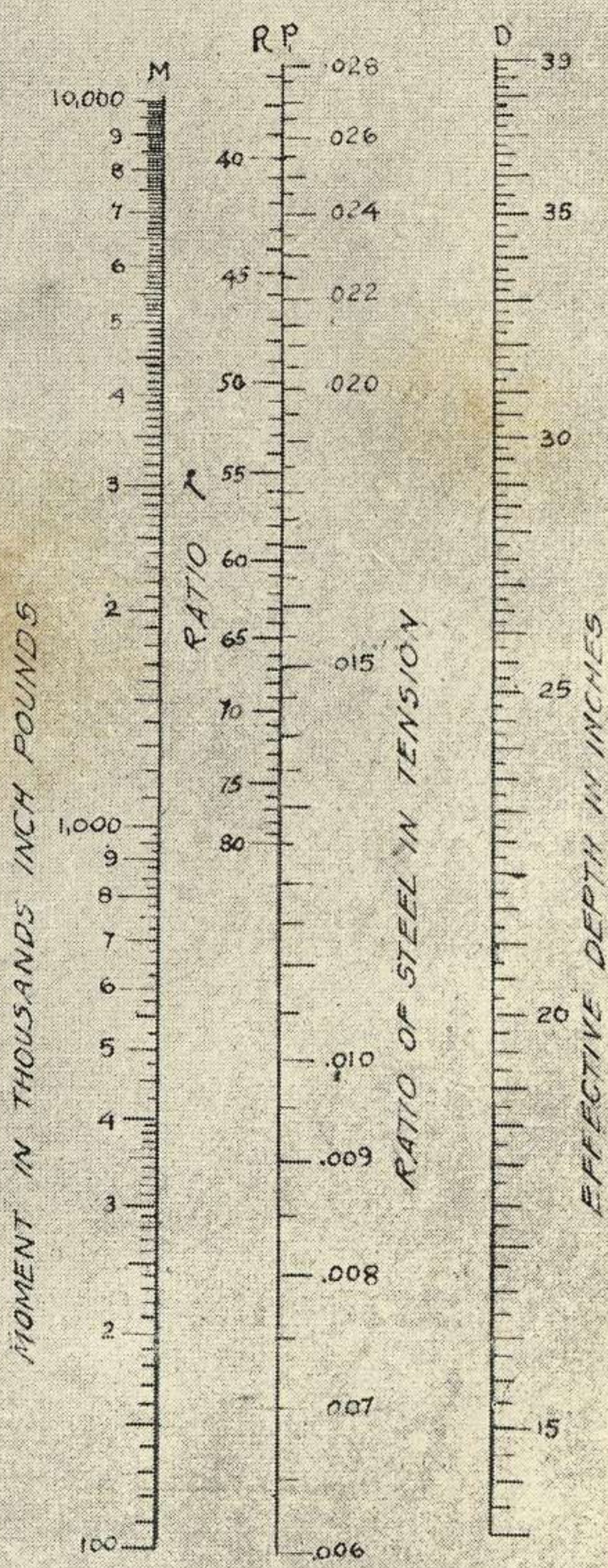
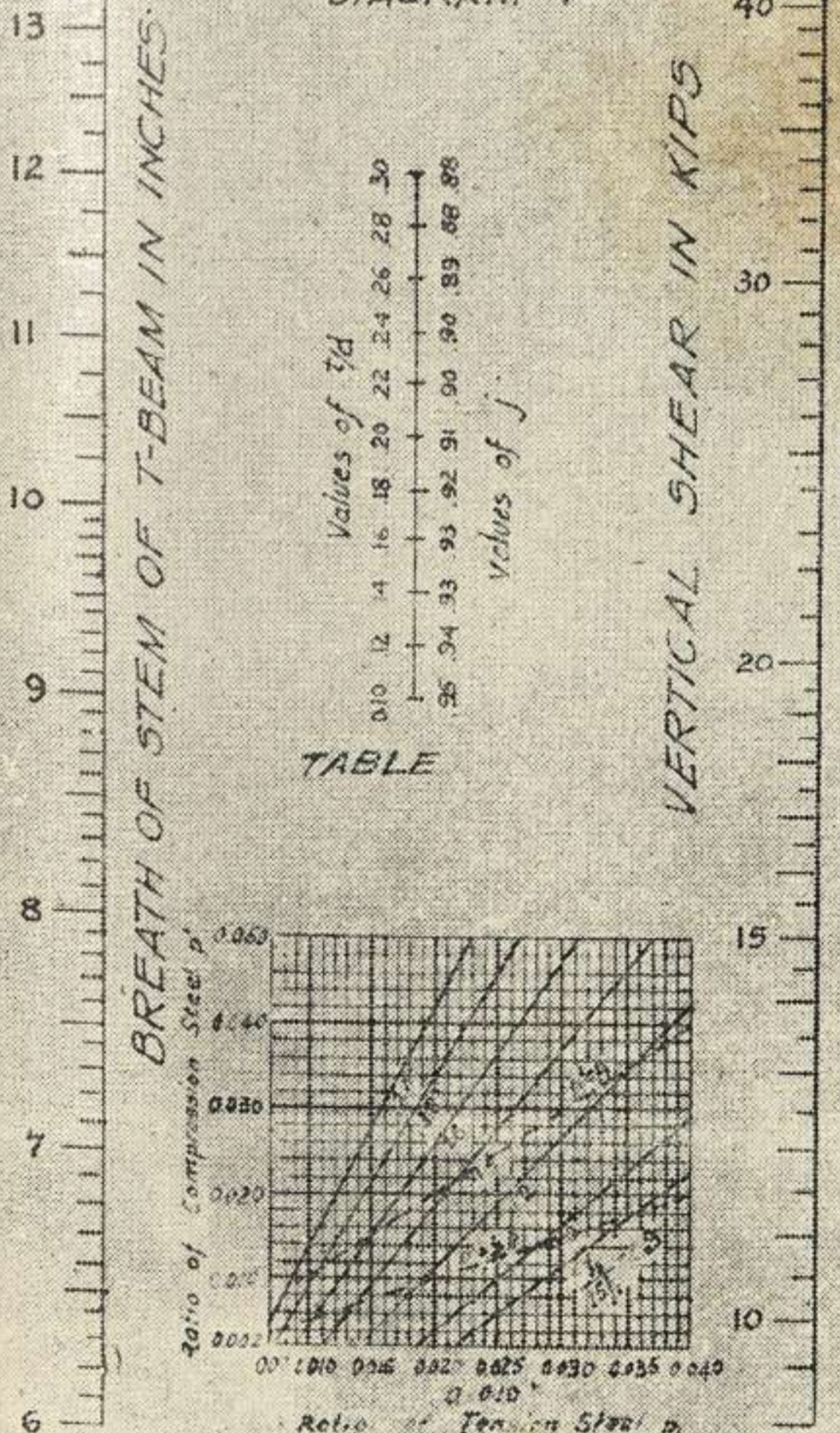
$v = 120$  lbs per sq inch

$j = 0.90$



TABLE

Values of $3/d$	Values of $j$
0.10	.95
1.2	.94
1.4	.93
1.6	.93
1.8	.92
2.0	.92
2.2	.91
2.4	.91
2.6	.90
2.8	.90
3.0	.89

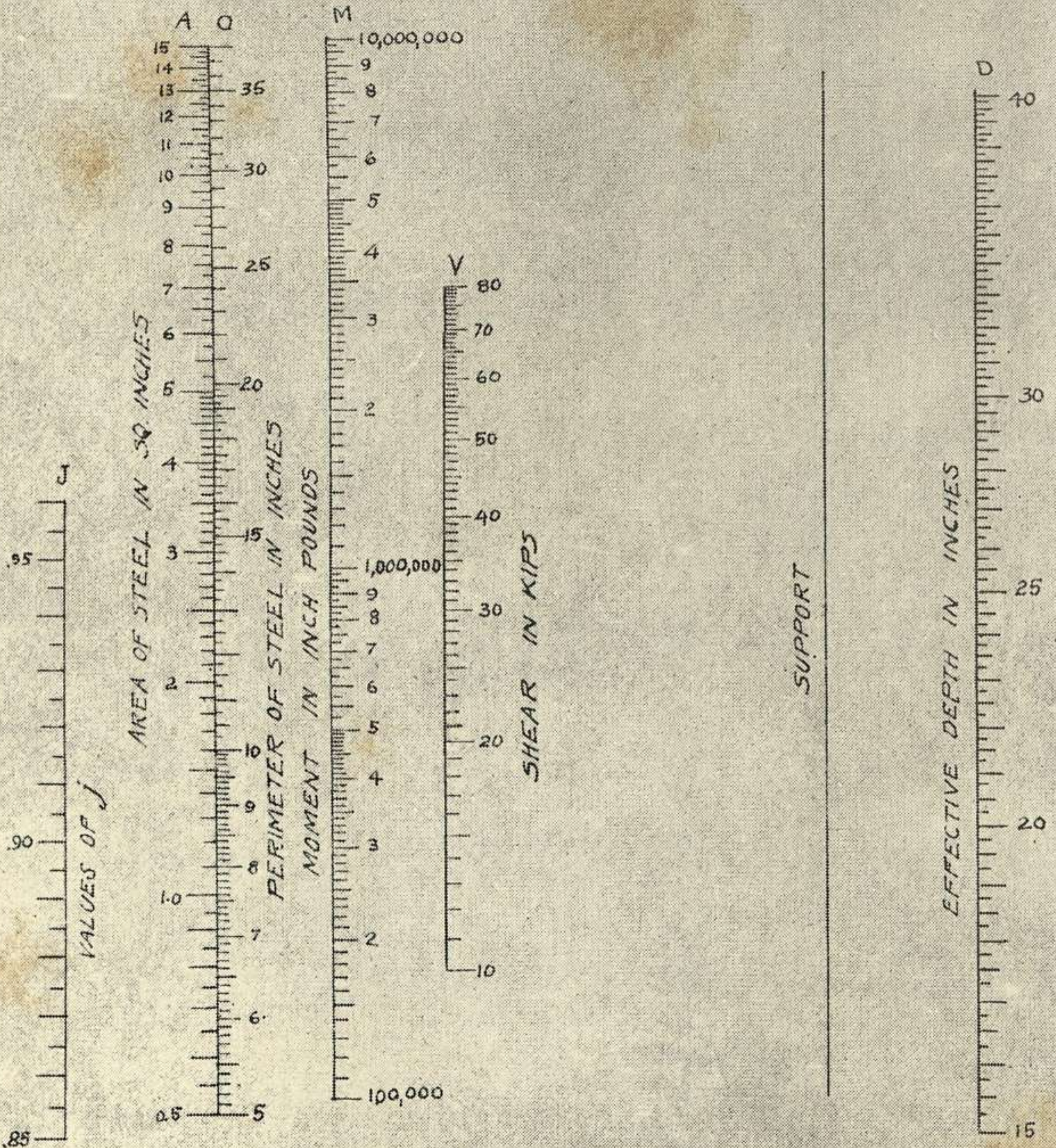


# GRAPH-III

Area of tension steel in concrete beams

$f_s = 16000$  lbs per sq. inch

$u = 100$  lbs per sq. inch





# SCIENCE AND ENGINEERING

## Short Cuts In Concrete Structural Design

By *M. Montaner, C. E.*

Graphs provide a quick solution for design of reinforced concrete T-Beam when External Shear, and Bending Moment are Known.

**GENERAL.** In beam and girder concrete floors, the beams and girders are considered as T-beams. As the thickness of the slab is designed first, the value of  $t$  or depth of flange is fixed. The width of the flange depends largely upon the thickness, so that for fixed  $t$ , the value of "b" (width of flange) is practically fixed. As the width of stem of beam  $b'$  may be assumed, the size of a T-beam is practically known except the effective depth  $d$ .

The depth of a beam is governed by several important factors, namely: the external shear, bending moment at the center of the span, bending moment at the support and cost.

**CROSS SECTION AS DETERMINED BY SHEAR.** The size of beam to resist external shear may be obtained from the following equation

$$d = V/0.9vb' \quad (1)$$

where  $V$  = external shear in lbs.

$v$  = unit shearing stress in lbs. per sq. in.

**THE MINIMUM DEPTH AT THE SUPPORT.** The minimum depth required at the support where the beam is a rectangular one with steel on top and bottom is given by the following formula,

$$d = 1.05 \sqrt{M/f_s p_1 b'} \quad (2)$$

where  $M$  = bending moment at the support in inch pounds.

$p_1$  = ratio of tension steel.

$f_s$  = unit tensile stress of steel in lbs. per sq. in.

The magnitude of the tensile steel ratio,  $p_1$ , may be taken from either diagram 1 or 2. Diagram 1 is the graphical solution of the following formula

$$p' = (p_1 - p) \frac{1 - k}{k - a} \quad (ii)$$

(i) E. Smulski "Concrete Plain and Reinforced" Vol. I, p. 222.

(ii) E. Smulski "Concrete Plain and Reinforced" Vol. I, p. 237.

which gives the required ratio of compression steel if the ratio of tensile steel  $p_1$ , necessary to resist bending moment, is larger than the value of "p" corresponding to the specified stresses in a balanced beam without compression reinforcement. The value "a" is the ratio of the distance of the center of compression steel from the top surface to depth of beam, and the value "k" is the ratio of the distance of the neutral axis from top to depth of beam.

**ECONOMICAL DEPTH FOR T-BEAM.** The economical depth of beam may be found from the equation

$$d = \sqrt[3]{Mr/0.9fsb} \quad (3)$$

where  $r$  = the ratio of cost per cu.ft. of steel in place to cost per cu. ft. of concrete in place.

**THE MINIMUM DEPTH AT CENTER OF SPAN.** The minimum depth at the center may be found by the rectangular beam formula

$$d = \sqrt{M/Kb} \quad (4)$$

where  $b$  = width of flange

$K$  = a constant

$M$  = bending moment at center of span in inch-pounds.

This equation will give an approximate value of the depth provided the latter does not exceed four times the thickness of the slab.

Formula (4) is solved graphically by Graph II (published in January's issue of the Unitas). If the value of  $b$  is greater than that shown in the Graph, find the value of "d" in the graph by using one-half the value of  $b$ , then multiply the result by 0.7 to obtain the true depth of beam.

**REQUIRED DEPTH OF BEAM.** The depth to be selected will depend on the results of equations (1), (2), (3), and (4). The writer has devised Graph III in such a way that a quick solution of each of the above equations may be found from one graph alone.

**AREA OF TENSION STEEL.** The area of the tensile reinforcement may be conveniently obtained from the equation.

$$A_s = M/jdfs$$

where  $A_s$  = area of steel in sq. in.

$M$  = bending moment at center of span.

$j$  = a ratio.

In order not to crowd Graph III with so many scales, the writer devised Graph—IV—for the solution of the above equation. This Graph may be used also to determine the required perimeter of steel for a given bond stress.

(iii) Turneure and Maurer, "Principles of Reinforced Concrete Construction," second edition p. 238.

In order to make the use of the Graphs clear to the readers, the solution of an illustrative problem will be explained.

GIVEN Beam and girder floor, with 4 in. slab, span of beam 20 ft.; breath of flange 60 in.; external shear 28,800 lbs.; bending moment at the center of span 1,250,000 in. lbs.; and bending moment at the support 1,250,000 in. lbs.

REQUIRED. Depth and width of beam, and area of tension steel.

Assume the following working stresses

$$f_s = 16000 \text{ lbs. per sq. in.}$$

$$f_c = 640 \text{ lbs. per sq. in.}$$

$$v = 120 \text{ lbs. per sq. in.}$$

$$n = 15$$

SOLUTION. *Cross Section as Determined by Shear.*

$$V = 28,800$$

Place the straight edge at 10 on scale B Graph—III and at 28.8 on scale V. The edge cuts scale D at 26.5; thus, 26.5 in. is the depth of beam when  $b'$  is 10 in. By the same procedure a set of values of  $b'$  and  $d$  may be obtained, thus

$b'$	$d$
10	26.5
12	21.8
14	18.7

*Minimum Depth at Support.*  $M = 1,250,000$  in. lbs.

It is desired to have the same amount of tensile reinforcement as compression reinforcement, or  $p' = p_1$ . The ratio  $f_s/15f_c = 16000/15 \times 640 = 1.67$ . Assume " $a$ " = 0.10. In diagram (2) interpolating line 1.67 between lines 1.6 and 1.8, it is found that it cuts line  $p' = p_1$  at a point which coordinates are  $p' = 0.0142$  and  $p_1 = 0.0142$ . This gives the required ratio  $p'/p_1 = 1$ . The minimum depth at the support, from equation (2), assuming  $b' = 14$ , may be found from Graph—III as follows; place the straight edge at 14 on scale B and at 0.0142 on scale P. Then place the straight edge where it cuts the support on the previous setting and at 1250 on scale M. The edge cuts scale D at 20.75: thus, 20.75 in. is the depth of the beam at the support when  $b'$  is 14 in.

*Economical Depth of T-beam.*  $r = 49$

To solve equation (3) graphically, the ratio  $r$  must be known first. If concrete in place costs ₱1.50 per cu. ft. and steel ₱0.15 first. If concrete in the locality costs ₱1.50 per cu. ft. and steel per kilo or  $.15 \times 490 = ₱73.50$  per cu. ft. the ratio

$$r = 73.50/1.50 = 49.$$

Solution of equation (3): place straight edge at 10 on scale

B and at 49 on scale R. Then place the edge at the point where it cut the support and at 1250 on scale M. The edge cuts scale D at 20.5. Hence

	when $b' = 10$	$d = 20.5$
Similarly	when $b' = 12$	$d = 18.6$
	$b' = 14$	$d = 17.2$

*Minimum Depth at Center of Span.*  $M = 1,250,00$   $b = 60$

Use Graph I. Place straight edge at 30 on scale B and at 1250 on scale C. the edge cuts D at 20. The true depth, therefore, will be  $0.7 \times 20 = 14$  inches.

#### *Depth Finally Selected.*

By inspecting the various depths found from the above formulas, it can be seen that, the economical depths are smaller than the depth required at the support, the depth at the support will, therefore, be selected.

$$b' = 14 \text{ inches. } d = 20.75 \text{ in. } h = 20.75 + 2.25 = 23 \text{ inches.}$$

This value is larger than the economical depth and somewhat larger than required by shear.

#### *Area of steel.*

For  $d = 20.75$  and  $t/d = 0.19$ , the ratio of moment area from the Table (v) on Graph III is  $j = 0.91$ .

The area of steel from Graph III is found as follows: Place straight edge at 0.91 on scale J and at 20.75 on scale D. Mark the point of intersection at the support and place the edge at this point and at 1250 on scale M. The straight edge cuts scale A at 4.13; thus, the area of steel required is 4.13 sq. inches.

Use 3-1" sq. deformed bars 3.00 sq. in.

2-7/8" sq. deformed bars 1.125 sq. in.

*Bond Stress.*  $V = 28,800$  lbs.;  $j = 0.91$ ;  $d = 20.75$  in.

The total perimeter of steel reinforcement for a given unit bond stress is found from the formula

$$O = V/ujd \quad (5)$$

where  $u =$  working unit bond stress.

In Graph III "u" is assumed to be 100 lbs. per. sq. in. To determine the total perimeter for a given external shear proceed as follows: Place the straight edge at 0.91 on scale J and at 20.75 on scale D. Mark the point where the line intersect the support. Set the straight edge at this point and at 28.8 on scale V. The edge cuts scale O at 15.3. Thus, 15.3 in. total perimeter is required for a given external shear of 28,800 lbs. and a given bond stress of 100 lbs. per sq. in.

The actual perimeter is  $3 \times 4 + 2 \times 3.5 = 19$  in.

Therefore, the bond stress is satisfactory.

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(v) E. Smulski "Concrete Plain and Reinforced" Vol. I, p. 221.

# NEWS AND NOTES

## THE XXXIII INTERNATIONAL EUCHARISTIC CONGRESS (A Synopsis)

Now that this long awaited event, the greatest religious manifestation in the Far East has come and gone, we may look back and see through our mind's eye what our impressions are and what the outstanding instances of the Congress were.

First of all there was the arrival of the Legate with the Pontifical Mission welcomed and cheered by the crowd who lined both sides of Katigbak and Bonifacio Drives through the historic Postigo gate to the Cathedral. It is true that the cars were well decorated with the Pontifical colors but one could not help seeing that said cars were old and ancient jogging their way through supposed to be paved streets. The occupants must have doubted that they had reached land.

On the morning of the Legate's official visit to the University of Sto. Tomas, a colorful display of native dresses greeted one's eye on entering the campus. Due to the fact that etiquette was reversed during the military review, that is gentlemen in front, ladies behind, we can say nothing about it, we only hope that it was as it ought to be, and judging from the applause of the occupants of the stand we think that our hope was realized.

The formal opening of the Congress took place on Wednesday, Feb. 3rd at 6 p.m. The Papal Brief was read. The scheduled speeches were delivered and were duly greeted with applause by the thousands that thronged the Luneta to hear them. When the Blessed Sacrament arrived at the altar the men were asked to remove their hats; this request was voiced first in English, then in Spanish, lastly in Tagalog.

The Women's Day was Thursday, and women of the Philippines together with those of other nations proved once more their love to Our Lord in the Holy Eucharist by assisting at the Pontifical Mass said by a missionary vicar of Indochina and by participating in the Heavenly Banquet. It is estimated that about 135,000 women were present. The sermon delivered by His Grace the Archbishop of Cebu may well be remembered by those present and by so doing put the advices into practice in order that womanhood be kept on a high standard. On their eagerness to be near the altar it was very difficult to hold them back and keep the aisles clear. All the united efforts of the usheretts, cadets and boy scouts especially along the center aisles were in vain, nevertheless little by little they were able to push them back thus giving the priest who distributed communion a clear way. The First International Assembly which took place that afternoon was well attended and the two principal speakers of the evening were heartily applauded, and so were the five-minute speakers.

The Midnight Mass and General Communion of the men was one of the

most impressive sights of the Congress. A rough estimate of 150,000 men assisted of which 98 per cent received Our Lord. The preacher for the evening was none other than Archbishop Mitty of San Francisco one of the outstanding American orators. The Second International Assembly in the afternoon could not be carried out at the Luneta due to the inclement weather, but the speeches were delivered at the radio station.

At dawn a Pontifical Mass was celebrated by Bishop Heylen of Nemur, Pres. of the Permanent Committee, completing his 81st birthday this day. It was touching to behold that venerable old man with the peace of Christ clearly written on his countenance officiating at Mass.

Saturday was Children's Day. Dressed in white symbolic of angelic purity, boys and girls came marching to the Luneta to hear the special mass said for them and to receive the Blessed of the Angels. 60,000 children were present. Men and women came too by the thousands to witness the ceremony. The act of consecration to the Blessed Virgin was read aloud but it was a great pity that the children were not instructed to say it after the priest, otherwise it would have been more impressive. The 3rd International Assembly took place like the former days in which the two principal speakers delivered real pieces of oratory.

Sunday, the Grand Finale of the Congress began with a Pontifical Mass said by the Papal Legate himself at which more than 200,000 faithful assisted the great part of them receiving Our Lord. The climax of the whole event was the Solemn Eucharistic Procession which started at four and which lasted till eight-thirty.

A special carriage made of the best Filipino wood was specially constructed and gilded with Spanish and Filipino gold. On it His Eminence knelt before the shining monstrance held in place by Father Morrow. As the carriage escorted by flags of 52 nations and thousands and thousands of priests and bishops wended its way through the Boulevard the multitude that lined both sides knelt in awe and adoration before Christ their King. On arriving at the altar solemn Benediction was given. At a little before nine the Vatican City and Manila were connected by radio for the final blessing of His Holiness. 600,000 people, heard the words of the Vicar of Christ on their knees. After the English and Spanish translations from the Vatican radio, His Eminence delivered the closing discourse and bade a touching farewell to the Filipino people but unfortunately only a handful compared to the 600,000 heard it as everybody was leaving due to the lateness of the hour and to the fatigue and hunger of the whole afternoon. But surely if they had announced that His Eminence was going to speak after the Holy Father the people would have waited but as it was it could not be prevented.

The Congress is over but the memory of it and its fruits will forever remain upon this Pearl of the Orient Seas. This history-making event will be another golden link in the chain of glories rendered to Our Lord in the Eucharist; it will be the most outstanding manifestation of faith in the Far East the ever-shining star that will in the future guide the pagan nations of China and Japan to the true fold of Christ.

#### NO FEAR OF TRUTH

An English member of the New Pontifical Academy of Science. Professor Whittaker, is beyond question one of the greatest living scientists

in the world.

He has won distinction in two fields. For years, Professor Whittaker was Royal Astronomer of Ireland. In 1912 he became Professor of Mathematics in Edinburgh. Since then he has been elected President of the Mathematical Association. He has been honored by the universities of every English-speaking country. As the most eminent distinction of all, he is a Fellow of the Royal Society.

This English member of the new Academy of Science is a Catholic. He entered the Church six years ago.

The somewhat detailed account of one member's achievements illustrates the quality of the men nominated by Our Holy Father to the Pontifical Academy of Science. Nationalistic and even religious distinctions have been ignored. The members are cemented into a unit by two considerations—their love for scientific truth and their success in attaining it. As the effect of this policy, the finest scientific minds in the world have been gathered under the patronage of the Church.

From the attitude assumed in this instance by Our Holy Father, it certainly does not appear that the Sovereign Pontiff fears any "conflict between religion and science." It is a reiteration and new emphasis of an unchanged position; the Church does not fear truth. She is cautious about theories. In her experience a scientist, fascinated by a theory, is fully as dangerous and untrustworthy as any doctrinaire.

Professor Whittaker is a scientist of unquestioned eminence. He is thoroughly at home in the fields of astronomy and mathematics.

Yet, at the summit of his fame, he found himself impelled, after study, to embrace the Catholic faith. In two departments of science where Professor Whittaker is thoroughly at home, he found no contradiction to the religious truths he was considering at the time. If this expert could find no conflict between astronomy, mathematics and religion, it is a safe conclusion that no contradiction can be found in other scientific fields.

#### THE USE OF X-RAYS IN TESTING MATERIALS

Looking inside all sorts of materials, from concrete to tobacco, is becoming a common task for x-rays, usually considered a tool for use of doctors in hospitals.

Foundries and welding shops use x-rays as a routine for control and inspection of the metal they produce. Earnshaw Cook, of the American Brake Shoe and Foundry Company, Mahwah, N. J., reported to the American Society for Testing Materials at Atlantic City on June 27 that "the installation of x-ray laboratories in commercial jobbing foundries is an economic measure, inherently profitable to the manufacturer and a reliable assurance of improved and maintained quality to the trade."

X-rays allow the detection of holes, cracks, inclusions and other defects in metal. With the growth of welding, x-ray equipments have multiplied for use in inspection of joints and other products made by welding.

J. C. Hodge, of Babcock and Wilcox Company, Barberton, Ohio, reported that in building the giant hydraulic power penstocks of Boulder Dam, 270,000 feet of x-ray films were used for the examination of their welded joints.

Herman E. Seemann, of the Eastman Kodak Company, reported that

x-rays have solved problems in connection with ceramics, concrete, mica, coal, asbestos, foods, tobacco, plastics, textiles, paper, leather, wood and other materials.

Radioactive substances, such as radium, giving off gamma radiation similar to but more powerful than x-rays, are also being used for non-destructive testing of materials, and Norman L. Mochel, Westinghouse engineer, predicted greater utilization of radium in materials testing, particularly where portability is an advantage.

#### A NEW INSULIN COMPOUND

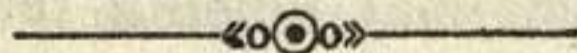
The advantages of protamine insuline over ordinary insulin in the treatment of certain cases of diabetes were described by one of the co-discoverers of insulin, Professor C. H. Best, of the University of Toronto, at the Vancouver meeting of the Canadian Medical Association.

The new kind of insulin was developed by Danish investigators. It was not intended to supplant ordinary insulin in cases of diabetes which can be satisfactorily controlled by insulin alone, but was found a valuable adjunct to insulin in treating cases of severe diabetes. Protamine insulin is relatively insoluble and tends to be absorbed slowly and over a longer period of time than ordinary insulin. Consequently its blood sugar-lowering effect lasts longer—twice as long, in fact.

"The work of the Danish group on protamine insulin has been abundantly confirmed," Dr. Best said. "Various groups of clinicians in Boston, Toronto, London, Eng., and Rochester, Minn., has found that the duration of insulin action is much extended when insulin is combined under appropriate conditions with protamine."

Dr. Best and his associate, Dr. Robert Kerr, found that dogs having no insulin-producing pancreas tissue could be kept free from symptoms of diabetes by one injection of protamine insulin daily. At least two injections of regular insulin are needed to accomplish this result. The fluctuations observed in the amount of sugar in the blood when regular insulin is used are avoided with protamine insulin.

The use of protamine or some even more satisfactory agent will make it possible, according to Dr. Best, to maintain certain diabetic patients in a much more normal condition.





## EXCHANGES

REVISTA FILIPINA DE MEDICINA Y FARMACIA—(Oct.-Nov. '37)—The October number bring to us two original articles entitled, Epidemics of Gastro-Intestinal and Respiratory Diseases Among Young Children of the City of Manila in 1936 by Dr. Regino G. Padua of the Bureau of Health, and A Biography of Dr. Benito Valdes y Salvador by Carmen P. de Jesus of the University of Santo Tomas. Pediatricians or doctors interested in children's diseases will find in Dr. Padua's instructive article the answers to the puzzling question of why so many children died during last August in the Philippine Islands. The sources of material, epidemiological findings, clinico-pathological observations, enlightening discussions, and exhaustive that for any physician wishing to be up-to-date in matters pertaining to the diseases of children in his country, should get hold of a copy of this issue, read Dr. Padua's article, reflect and help remedy an endangering local medical problem. Miss de Jesus biography of our beloved and good-natured Dr. Benito Valdes, late professor in the University of Santo Tomas is a little life-book in itself replete with interesting incidents and data in the life of Dr. Valdes. Biographical sketches of model men are always welcome. They help guide the youth especially during these days when more emphasis are given to the lives of gangsters, crooks and villains in popular magazines just for the sake

of sensationalism and financial exploitation. The editorials for the month deal about Dr. Fernando Calderon's retirement as dean of the U.P. College of Medicine. The newly formed Philippine College of Surgeons, is also editorialized. An article in Spanish entitled, La Participación Filipina en el X Congreso Internacional de Historia de la Medicina by Dr. Jose P. Bantug appears in the Nov. issue of the Revista Filipina. In this article, Dr. Bantug describes the modicum of Filipino participation in the Tenth International Congress of the History of Medicine in which illustrious men of medicine took part, such as the eminent Spanish doctors Gregorio Maraon, Mariscal, Oliver, Javier Cortezo and others. A Book Exposition in which priceless books and manuscripts were exhibited is described by the author in such a manner that one can't help feeling as having missed participating and seeing historical treasures. Dr. Bantug, also expresses his gratitude to the University of Santo Tomas which helped much in the realization of his voyage to Spain. Mention is also made of the traditional hospitality of the Spaniards. The Floods In Central Luzon by Emilio Quisumbing is another original article in this number of the Revista. Readers will still remember the devastating damages caused by the recent floods in Cagayan province. In this timely article of Mr. Quisumbing, remedies are given so that similar destructive floods may be

prevented in the future. The Medical Aspects of the Workmen's Compensation Law by Dr. Jose Santillan is a clean-cut definition and interpretation of the medical aspects of the law. A standard method of evaluating disabilities which has been found satisfactory is therein explained. This sort of "measure stick" simple and practical can be used anywhere. All doctors should read this important article. This month's editorials are in Spanish. One deals on the recognized leaders of Philippine Science and the other editorial, on the fusion of the Colegio Medico-Farmaceutic ode Filipinas with the Manila Medical Society. As usual, interesting and instructive medico-pharmaceutical literature, and general and personal notes are also included in this issue.

**LA CIENCIA TOMISTA.**—Septiembre-Diciembre, 1936. Números 161-162. **La Cuestión de la Epiclesis a la Luz de la Liturgia Mozarabe**, por el R. P. A. Colunga. El ilustre Director de la Ciencia Tomista continúa en este su segundo artículo el asunto relativo al valor de la epiclesis, que estudia, con admirable constancia y muy rica erudición, a la luz de las diversas liturgias. Expuesto el pensamiento de los PP. Orientales, como S. Atanasio, el Crisóstomo y el Damasceno, "el compilador de la ciencia patristica griega," recorre las diversas liturgias de las iglesias orientales, tales como la alejandrina, la jerosolimitana, la antioquena y la siriaca, sin olvidar la misma bizantina. La conclusión final de este estudio es que "en la epiclesis lo primero que se pide es la venida del Espíritu Santo sobre el oferente y los fieles; luego sobre los dones presentes en el altar." "Todo ello prueba que la invocación del Espíritu Santo so-

bre los dones ofrecidos, como sobre los fieles, solo a una cosa se ordena y pide una sola cosa, que el sacrificio y la comunión sean efectivamente para remisión de los pecados y para la consecución de la vida eterna de los oferentes." **La Exención de los Religiosos**, por el P. S. Alonso.—Examina la exención de los Religiosos relativamente a los siguientes puntos: Confesores y Capellanes, los bienes temporales, las testimoniales para la admisión de postulantes, la dote y la exploración de las religiosas, exámenes anuales de los nuevos sacerdotes, la clausura, el sagrado ministerio, la exención de los religiosos y sus límites, obligaciones de los religiosos que regentan parroquias, los religiosos exclaustros, secularizados, apóstatas y fugitivos, la dimisión de los religiosos y finalmente la situación canónica de los religiosos de votos perpetuos despedidos de su Instituto.

**Los Estados prepasionales**, por D. Felix Aroca. — Estudio, denso, erudito y muy equilibrado, en el que el autor trata de describir los verdaderos estados incubadores de la pasión. Muy psicológica la siguiente observación: "es un hecho que a poco de tratar a una persona, insensiblemente vamos modificando nuestro comportamiento respecto de ella hasta llegar a tratarla en forma que no la contraríe... Ante un hipocondríaco tendremos exigencias que jamás se nos ocurriría tener en el trato con un sanguíneo o un flemático." Examina luego los **factores bioquímicos**, en donde da muy oportunamente el toque de alerta, contra las afirmaciones excesivamente materialísticas de algunos médicos modernos, la **indiferenciación biológica**, que otros dan en llamar sexual, los **factores psico-fisiológicos**, deteniéndose no poco en des-

envolver el verdadero concepto de lo que los escolásticos, y principalmente el Angélico Maestro, llamaban la *libido*, de la que afirma, como conclusión de sus investigaciones que "constituye por sí mismo un estado prepasional peculiar, en cuanto es la energía movilizadora de cuantos resortes posee la psiquis y el punto inicial de toda la actividad de cada individuo. Es la tendencia constante, el deseo persistente, el santo afán que mantiene al hombre en una provechosa inquietud. Lo que vulgarmente se conoce como inclinación natural, índole, vocación e idiosincrasia, de ella principalmente proviene y de ella nacen esas, al parecer, caprichosas preferencias que tiene cada persona, que nadie acierta a justificar." **La Facultad de Teología en la Facultad de Oviedo**, por el P. Vicente Beltran de Heredia.—**Cayetano y la Tradición Teológica Medioeval en los Problemas de la Gracia**, por el P. V. Carro, **Cronicas**, de España y Colombia, **Boletín de derecho Canonico y Bibliografía**.

S. A. M.

CENTRAL-BLATT AND SOCIAL JUSTICE Vol. XXIX, No. 8.—**Supernatural Sociology** by C. Bruehl.—In this article the author critically comments Dr. Paul Hanly Furfey's book entitled "Fire on Earth", pointing out the improper use of certain terms like "supernatural sociology," that are likely to lead to "loose thinking," as well as the failure of the author of the book to make distinctions between requirements of personal morality and social systems, for example, or between counsel and precept and the limitations of one field of science and another—which failure (to make distinctions) produces or might produce confusion and misunderstand-

ing. Bruehl believes prudence, and not only zeal or courage should characterize every writer. **Donoso Cortes' Opposition to Socialism** by Goetz Briefs, Ph. D. A study of man's nature—so important in determining the structure and functions of society—could no less than be given due consideration by an eminent philosopher like Donoso Cortes. His was the true concept of man's nature, as opposed to the extremely optimistic philosophy of the Enlightenment which naturally led to so many false systems, Liberalism and Socialism chiefly. Donoso courageously propounded doctrines against the unjust, because extravagant claims that French Liberalism and Socialism preached, analyzing carefully their shortcomings and pointing out emphatically the fact that "our generation is undergoing the painful process of being disillusioned by the gospel of secularized humanism because it lacks the orientation superhuman values and realities grant those who give them serious thought."

VOL. XXIX, No. 9.—**The Relativity of the Ideal** by C. Bruehl. An ideal, to be of any use at all, ought not be divorced from concrete realities altogether. In other words, an ideal must be practical, attainable. And in order to be so, it must reckon with human nature as it is, or it is bound to fail—whether in the economic, political or social orders. The author of this article takes this point up in connection with the economic order as studied by Dr. Furfey in his book entitled "Fire on Earth." **A Truly Christian Sociology** by Gratian De Schepper, O. M. Cap. This is an appreciation of the importance and timeliness of the appearance of work of two volumes on Christian Sociology "Saggio di

una teoria generale della Societa'' by Luigi Bellini. After a few critical comments on the merits and demerits of the book the author proceeds to describe its contents briefly part by part.

DOMINICANA—December, 1936.—**Midnight Mass**, by Paul Francis Small, O. P.—**Loneliness?**, by Fabian Mulhern. One of the most painful things in life is loneliness...yet, there can be no loneliness for the Christian, no solitude, no lack of association.—**'Twas the night before christmas**, by Arnold Morrison, O.P.—**Benediction, Christmas Day**, by Sebastian Carlson, O. P. **Children and Saints**, with particular reference to St. Philip Neri and Don Bosco, by Norbert Wendell, O. P.—**"Domini-Canes"**, by Manes O'Beirne, O.P.—**The Incarnation, A Story**, by Pascual Shaffer, O. P.

REVISTA MUNICIPAL Y DE INTERESES ECONOMICOS. — La Habana, Noviembre-diciembre, 1936.—**Los municipios son un problema nacional (Editorial)** por el Dr. Pablo Carrera Justiz.

UNIVERSIDAD, Zaragoza, Julio-Septiembre, 1936.—**El Municipio oscense de antaño**, por Ricardo del Arco, Archivero, Bibliotecario y Arqueologo. Estudia los siguientes puntos: Raza; costumbres, vida, ceremonias y solemnidades; Ordenaciones y estatutos criminales de los siglos XIII al XVIII; hermandades; ceremonias votivas; el lenguaje.—**Alteraciones de las Comunidades de Teruel y Albarracin durante el siglo**

**XVI**, por Martin Almagro Basch, Profesor auxiliar de la facultad de Letras de Madrid (Continuación).—**El trabajo y su retribución**, en una concepción cristiana del mismo por Miguel Saneio Izquierdo, Catedrático de la Universidad y Profesor de Economía en la Escuela Social de Zaragoza. Con un criterio plenamente católico defiende la tesis que la nota esencial del trabajo económico es la productividad, y no la "penalidad" aunque esta vaya inherente a todo trabajo. Analiza despues las clases del trabajo; el fin individual y social del trabajo; función social del trabajo; obligatoriedad del trabajo; su rehabilitación, juntamente con la dignidad del mismo por el cristianismo; transito de este deber moral y de Derecho natural al Derecho positivo.—**Stammerler**, (en su octogesimo aniversario) por Luis Legaz y Lacambra, catedrático de la Universidad de Santiago de Compostela.—**Modernas orientaciones acerca del antidotismo en la intoxicación clonura**, por Angel Taffalla Longares, Doctor en Medicina, ex-alumno interno pensionado de la Facultad de Medicina de Zaragoza.—**Consideraciones acerca de doscientos cincuenta casos de anestesia del plexo braquial**, por Juan Sala de Pablo, ex-interno por oposición de la facultad de Medicina de Zaragoza.—**Descapado de materiales ferrosos**, por Julian Bernal, Profesor encargado de Química Teórica y Electroquímica de la Facultad de Ciencias de Zaragoza.—**La curva normal de errores en Biometria** por Angel Cabetas Loshuertos, Catedrático de Agricultura del Instituto de Huesca.

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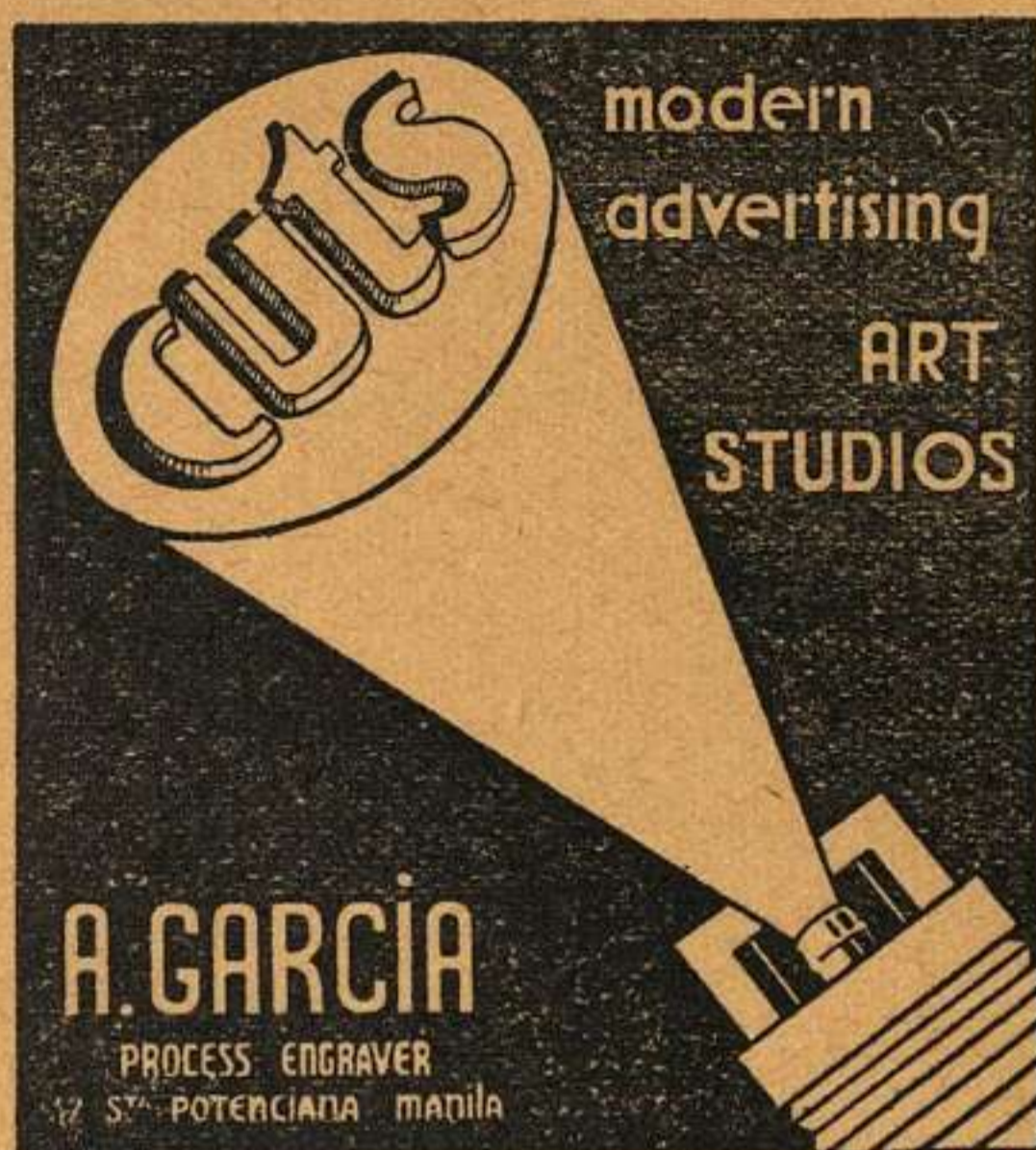
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