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PRELIMINARY REPORT ON THE LAGUNA HOUSING PROJECT EJIDO OF EL CUIJE, NEAR TORREON, COAHUILA

MEXICO

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INTRODUCTION

For some time, the Servicios Médicos Rurales, of the Secretaría de Salubridad y Asistencia, has been interested in improving housing conditions among the rural peoples of the Laguna, the great desert stretch along the Coahuila-Durango border which, with irrigation, has been converted into a famous cotton-wheat-alfalfa producing zone. Not only is the area rich agriculturally, but it likewise is the scene par excellence of Mexico's great social and economic experiment in agrarian reform. Three urban centers dominate the area: Torreón, a modern, enterprising city in the state of Coanuila; Lerdo, still essentially a nineteenth century community; and Gómez Palacio, a transitional settlement. Both Lerdo and Gómez Palacio are in the state of Durango. The bulk of the Laguna population which lives outside these centers is clustered in relatively small agrarian communities known as ejidos; and this rural population is dominated by the ejidatarios—farmers who own the ejido lands communally and who, to a certain extent, till them communally.

The data on which the present report is based result from a careful and detailed field study of nearly seven months, from March through September, of 1953, of current living conditions and housing needs in the ejido of al Cuije, some 23 km. from Torreón. Concurrently, a more cursory study was made at the small, nearby village of al Duraznito, an offshoot from the ejido of La Concha. Although the Duraznito inspection was hurried and was designed chiefly to provide guidance in the remodeling of existing dwellings, it indicated clearly that living conditions and housing needs are substantially the same as in all Cuije. Brief visits to other ejidos of the Laguna likewise suggest that the Cuije housing data will hold generally for the whole zone, if not, with minor changes, for arid north Mexico in general. As a consequence, the data presented below are of far wider application than the one ejido which was studied intensively.

For the field study, the ITAA made available its staff anthropologist, who is responsible for the present report. The DCISP provided two well prepared young aides, Patricia Barreda de Inchaustegui and María Cristina Alvarez de Conde, former students at the escuela Nacional de Antropología, under whose auspices both had obtained considerable field experience. Unfortunately, owing to ill health, both were obliged to withdraw when the Laguna survey barely was underway, and it is with deep regret that Mrs. Inchaustegui's death, in late October, is reported. María del Pilar Ordaz, a young non-professional visiting nurse (visitadora), of the Torreón station of Servicios Médicos Rurales, was assigned by the latter to the housing project and collaborated throughout the season. Her competent assistance and her devotion to the task are acknowledged with appreciation.

Our group did not attempt to live in the ejido, but had quarters in Torreón and drove daily to El Cuije. During the first week or ten days, we visited casually and attempted to become acquainted with the people and the village. During this orientation period, particular attention was given aspects of culture which would be covered by our survey. Following the preliminary study, and with the assistance of Mrs. Inchaustegui and Mrs. Conde, a questionnaire on housing was formulated, to serve as guide in the interviews.

so that the resulting data might be comparable. Except for a very few instances, we talked with the head of the family and his wife, so that both are represented in our data. Miss Ordaz filled out the questionnaire, while I drew sketches, roughly to scale, of the premises, buildings, rooms, and furniture arrangement and, at the same time, made a variety of observations over and above those covered by the questionnaire. In Appendix A (attached to the Spanish version of the report) will be found a somewhat fuller discussion of field procedure and a sample of the questionnaire used in all Cuije.

During the entire field season, data were recorded concerning all aspects of local culture which came to our notice. Thus, although the study was focused on housing, our extensive files contain assorted information with respect to water supply, agriculture, animal husbandry, household budgets, nutrition, clothing, division of labor, folk medicine, social and political organization, and so on. These data are not complete, nor do they represent systematic study of any theme other than housing and intimately related topics. But with a few months of supplementary field work, material for a relatively complete ethnographic report on El Cuije could be recorded. It is hoped that, some time in the future, such a study may be possible. By and large, ethnographers who work in Mexico unabashedly select for study communities which retain a maximum of their indigenous culture. It seems difficult for the anthropologist to overcome his preoccupation with survivals and reconstruction of native culture, even though communities with relatively pristing indigenous culture now are to be found only in isolated parts of the country. His insistence in concentrating on such minority groups makes his published reports of limited utility to official Mexican or other agencies which seek to effect broadside technological, health, or other reforms. Far more useful to such programs would be studies of the culture found in mestizo communities in selected zones of the country. For the Laguna area, which is exclusively mestizo, El Cuije should serve admirably as a representative example.

Our study does not attempt to cover the entire population of all Cuije, but morely the 57 families of ejidatarios (356 persons), which comprise approximately half the present community. The other half is composed of families of libres (literally, free persons), who are non-ejidatarios. There is, however, intimate relationship between these two major segments; they are, in fact, blood relatives. The only difference is that the libres have not inherited rights to the ejido. Inasmuch as the agrarian code makes provision for only one heir, and inasmuch as the birth rate in the Laguna normally is high, in the course of the relatively few years since the establishment of the agrarian reform, a large population, without ejido rights, has come into being.

A year before our visit, El Cuije was twice as populous as at present. Torn by internal dissention, the settlement split in half, with 52 families of ejidatarios and a number of libres moving to a nearby site, where they set up an independent village. The latter, familiarly called El Ranchito, officially is yelept Veinte de Noviembre; its present status is that of a sector of El Cuije, not of a full ejido. Mancor and jealousy characterize the relationships between Cuije and this recent offshoot.

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Each family departing for all Ranchito, took infinite pains to remove all usable building materials, such as roof beams, window frames, and doors. As a consequence, all Cuije looks at present as though it had been ravaged and pillaged. On all sides are ruins of adobe walls, from which roof beams have been yanked. "Streets," irregular at best, are littered with rubble and rubbish, and the over-all scene is one of desolation.

MAJOR PROBLEMS

In order to provide some background, a number of major problems which beset the Laguna are discussed briefly below.

The libres

The ejidos face a grave problem with respect to their libre relatives. When the agrarian reform was set up in the Laguna, in 1936, each family was allotted approximately 4 hectareas of land; that is to say, 50 heads of families would be assigned an ejido whose arable lands totaled 200 hectareas. As mentioned above, the agrarian code provides for ejido rights of inheritance by a single individual, so that today, nearly twenty years later, there still would be 50 heads of families with ejido rights in the same hypothetical community. The code apparently assumed a perfectly static population and failed to take into account the fecundity of the local population. Let us assume that an original ejidatario had 6 sons; upon his death, only one of the 6 can inherit ejido rights; the others become libres. Now, about 20 years after the agrarian reform, the libre families equal in number, if they do not exceed, the families of ejidatarios.

No particular provision has been made for these libres. They receive the usual indifferent schooling, which, as a rule, does not go beyond the third grade. They are given no other training which would fit them for trades. As a consequence, they become unskilled agricultural workers, living in the ejidos, but without sharing the profits of the latter. Some libres find work with the private land owners; some work as day laborers for the ejido. But inasmuch as agriculture in the Laguna is highly mechanized, there simply is not sufficient manual labor to support the local population. The ejidatario has genuinely grave economic problems, but relatively speaking the libre invariably is in far worse condition economically.

Economic problems

Since 1936, when the agrarian reform was established in the Laguna, the ejidos of that zone have had good agricultural years and bad ones. Late in the 1940's, many ejidos were prosperous and, at the end of each year, when accounts were reckoned, a substantial profit was distributed among the ejidatarios. Some informants in Cuije received as much as \$10,000 pesos;

one is reputed to have attained a peak figure of \$14,000 pesos.

Owing principally to drought, the past four years have been disastrous agriculturally. En Guije is considered one of the most prosperous ejidos of the Laguna. Until the present year (1952) it has been able annually to liquidate its indebtoiness to the ejilo bank; but in September of this year, Guije informants predicted confidently that, for the first time in its history, the ejido would have a definit.

Moreover, to our certain knowledge, individual indebtedness is heavy, even though on the books of the ejide bank one community still is solvent. One woman, whose house is bare even of a chair, happily informed us that she owed \$6,000 pesos; neighbors are reputed to owe even more. During the past four years, when there have been no profits to be distributed, clothing has been bought largely on credit. We talked personally with one merchant in Torreón who calculates that his customers in Chije ove him roughly \$90,000 pesos; those of El Ranchita, the recent offshoot of Cuije, about the same amount. Another important creditor is said to live in Matamoros, but we have not had opportunity to speak with nim. There is even additional private indebtedness, for informants remark casually that they have watches, radios, and other luxury items in pawn. All 57 families inherviewed in Cuije declared that they had no funds in reserve, although a number have a modest stock of domestic animals which could be sold to raise money in case of emergency. But by large, libres and ejidatarios alike limp along, living from one day to another as best they can on the wage allowed by the bank. With respect to savings, one ejidatario expressed the situation succirctly, saying, "We are entirely clean."

Under the circumstances, any major enterprise, such as a housing program, which requires considerable cash outlay, is ill-advised at the moment. Nevertheless, should the Laguna have a few good agricultural years in sequence, it is quite possible that personal and communal indebtedness can be liquidated. Thereupon, the ejidatario should be in a position to divert a fair proportion of his annual profits to improved housing.

In view of the current economic situation in the Laguna, there is little likelihood that plans for model house are needed very ungently. The basic study concerning housing needs has been made; and the present summary has been prepared so that, in the future, when the need arises, the data will already be assembled and readily available.

In fact, following a good agricultural year, with prospects of another such year, it might be wise to build and furnish a model home, in keeping with local needs and local taste. It so happens that Cuije authorities had hoped to build such a house the end of this year, from community funds, raffling it among the 57 ejidatarios. It may be noted that division of property by lot is well established among the ejidos and would be quite acceptable to them.

It might be even better if the model house could be built on the outskirts of Torreón, so that ejidatarios from various cutlying communities would pass it on their way to and from town. It is not impossible that such a move, properly timed to coincide with personal and communal solvency, might provide the spark necessary for major reform.

It is recommended most particularly that a detailed list of all costs be provided each visitor to any model house which might be constructed. This catalog would include costs of materials and of labor, entered separately, so that the ejidatario might see how much he would save by contributing labor to his own house. Likewise, it should indicate the cost of each item of furniture, together with the name of the store from which it is obtainable at the indicated price. It is not unlikely that, under such circumstances, local merchants might be willing to donate most of the furniture for the model house. In any event, each prospective builder should be able to study itemized costs in the light of the funds he himself may have available.

Attitudes of the ejidatario

It seems to us that the attitude of the people of El Cuije is al least as much of an obstacle to housing betterment as is the unhappy economic crisis through which the Laguna area is passing at present. The people are uniformly charmed at the prospect of new houses. But they take a relatively detached view of the situation, invariably asking, "When are 'they' going to build our new settlement?" Not once has anyone asked, "When are we going to build our new settlement?"

This attitude is not difficult to understand. The ejidos are children of the federal government: they owe their possession of the land to the intervention of that government. Through major loans, via the ejido bank, the government underwrites agricultural production and other community expenses. It advances money for seed, machinery, wages, and even pays the ejido's electric light bill. At the end of the year comes a settlement of accounts; theoretically, at least, the advance is liquidated, and the residue belongs to the ejido, to be divided among its members. In short, the federal government has from the start played a strong paternal role in the Laguna, and it is only natural that the ejidos expect official financial support in any major enterprise. When the prospect of building new houses on government credit dwindled, the people of Cuije simply reconciled themselves to making shift without housing reform.

It has been mentioned above that the rural population falls into the two categories of ejidatario and libre; that these are related by blood ties; but that they form two quite distinct economic strata. The ejidatario basks in the privilege of obtaining, through the community, bank credit, whereas the libre has no such facilities. Moreover, the ejidatario shares in the profits from the communal lands, following a good agricultural year; the libre works as a field laborer and has no such rights to division of spoils. Actually, he does the heaviest farm work and reaps the least therefrom.

The attitude of the ejidatario with respect to his libre relative is complacent and condescending. Quite often, one hears, "The poor libres! They have no right to a bank loan, so if they obtain new houses, they will have to build them personally." This explains adequately why, as a matter of prestige, the ejidatario is not interested in contributing free labor to any project, even to his own house, because he would lose face and place himself on a footing with his less favored libre relatives. Unless the community leaders can be convinced of the advisability of contributing manual labor—and there seems relatively little prospect of this in El Cuije—it stands to reason that the remaining ejidatarios are going to show mighty little interest in such a suggestion.

Prestige and self esteem are of extraordinary importance to the people of El Cuije. A few would like new houses because they realize their present quarters are inadecuate. But if it can be said that the community at large really is interested, it is so that the settlement may present a good face to the world, 1/2 and most particularly to the discenters who abandoned

I/ Precisely this same attitude holds for El Duragnito, where the recently built but lamentably inadequate houses have been lime-washed the colors of the spectrum and dazzle passing motorists. The leader of El Duragnito explained that he had selected dashing colors so that those who drove by would realize that the settlement was enterprising. The good front presumably disguises the fact that the houses have earth floors, poor lighting and ventilation, and no sanitary facilities; and that, moreover, the rooms teem with flies.

Cuije for El Ranchito. In other words, humiliating rivals is a far stronger incentive than are the present, notably poor living quarters.

The external appearance of the present settlement is a source of mortification to the people of Cuije; they realize that the remi-ruins left by those who moved to El Ranchito are unaesthetic. Many express a particular desire to have the town site well laid out, with straight screets. In fact, there was such a hue and cry about planification that, against our better judgment, we finally drafted a plan for the layout of the new settlement, and the DCISP engineers surveyed the streets. The one point on which real enthusiasm was shown was the possibility of planting trees along the streets in advance of building; we shall be interested to see if, come spring, the community makes good its threat of planting.

Actually, the appearance of El Cuije could be immeasurably improved without cash outlay--certainly without the necessity of an expensive building program. By using communal labor and some of the agricultural machinery owned by the ejido, it should be a relatively simple matter to clear the debris of the half-razed buildings and tidy the existing thoroughfares. In fact, the adobe and other rubbish could be used to good advantage to fill a large depression on the west outskirts of the settlement.

Of course, such an undertaking would not solve the problem of houses with inadequate lighting, ventilation, and absence of sanitary facilities; but, at least, it would give the people a somewhat tidier and more attractive milieu in which to live until finances warranted building new houses. Moreover, families willing to devote a bit of labor to their own houses, could mud-plaster the walls and, for a very few cents, whitewash them. Such a move would reduce materially the hazard of ticks, which in this area carry Rocky Mountain spotted fever. Most Cuije houses have earth floors. Those who could invest a few hundred pesos could install cement floors, at least in the kitchen. In short, with a minimum of expenditure and a bit of elbow grease, the present houses could be put in relatively presentable condition for the time being. Unfortunately, the community proved entirely unresponsive to such suggestions, taking the stand that sooner or later they will have a new settlement, hence there is no point expending time or effort in improving the present one.

One of the basic difficulties certainly is educational and stems from lack of understanding that housing and health are intimately related. Everyone in Cuije expressed interest in having running water at hand, as a matter of convenience, but there is no interest whatsoever in sanitary facilities as such. When the question of outhouses was under discussion, a leading citizen and official of the ejido remarked, "After all, we are country people and know little of such matters. Why don't we just eliminate all such features from our plans?"

Perhaps even more basic is the fact that the people really eager for the housing reform are not the ejidatarios, but the staff of Servicios Médicos Rurales. The housing program comes from above and from without, not from the people themselves. The latter are quite agreeable to the suggestion of new houses, provided they involve no sacrifice and no inconvenience. Under the circumstances, local participation is bound to be apathetic, even though the model house be well and carefully planned, to fit local needs and local tastes.

As a matter of fact, we should not be too critical of local attitudes with respect to the contribution of labor. In the first place, it has been pointed out that the ejidatario would lose face should he work gratis on the construction of his own house. In the second place, ejidatario and libre alike live from day to day, making out as best they can on the wage 2/ permitted by the bank advance on crops. If an ejidatario works

^{2/} Which is on an average \$5.00 pesos a day for unskilled labor; \$\psi^7.00 for one who drives a tractor. Families are large and food prices are high, even by Mexico City standards.

two days a week gratis, he has that much less in the way of cash income, and as it is, the latter permits him to live barely on a survival level. 3/

3/ However, the normal working day terminates in early afternoon. Every day laborer in all Cuije generally has a few hours free in the afternoon.

In the third place, local dist is notably deficient, particularly on the score of proteins and vicamins. Undoubtedly, everyone would be delighted to consume more meat, casese, eggs, and from, but the current wage simply does not permit such a move. It apple be naive for us to expect boundless energy from such an undernourished population.

THE PHYSICAL BACKGROUND

The Laguna is an enormous expanse of desert country, formerly the bed of a lake, as the name indicates. Vegetation is scarty; great dust storms are frequent, especially in spring. The temperature range is formula midable, from \$8.7° C. to 40.2° C. \(\frac{L}{2}\) The main stream is the Rio Nazas, sizable

plue

4/ In the decade from 1941 to 1950, according to meteorological records from Lerdo, Dgo. The data are on file in the Instituto de Meteorología, in Tacubaya, D. F.

and formerly perennial, but now with water only under exceptional conditions. A number of the ejidos depend for irrigation on water from the El Falmito dam; but most, including El Cuije, rely exclusively on water pumped from deep wells.

El Cuije is situated on the northwest bank of the now-dry Nazas, a few meters above the level of the old streambed. The dusty, relatively level town site is dotted with mesquite trees, which apparently have been spared in the course of clearing; within the memory of informants, the now-inhabited site was a thorny thicket.

At present, the settlement has one main thoroughdare, which runs eastwest along the northern margin of the village and divides the latter from the cultivated fields to the north. It is the terminal of an unimproved dirt road which connects all Cuije with the main, paved highway, a few kilometers to the northeast. Other thoroughfares are no more than irregular paths between houses. The plaza is a large, open, untended plot of ground, about which are clustered a building used upon rare occasions as a chapel, the communal store and maize mill, several small, private stores, the jail, the billiard hall, and a number of dwellings. The general impression of desolution resulting from the exodus of half the population has been remarked previously (p.3).

Except for half a dozen small dwellings of brick, built in hacienda days, before the agrarian reform, houses are of adobes; some are mudplastered and whitewashed; many are in ill repair. Roofing it uniformly of one shed; wooden beams support a layer of light cames, infraquently of thin boards, on top of which are spread mud and/or mortar. This gives sufficient protection in a country where rains are scarce. Floors generally are of earth, although there are a few instances of brick and of cement. Windows are scarce and small. One house boasts glass in the windows; the others have wooden shutters. Tighting is poor by any standards; cross ventilation, infrequent.

Sanitary facilities are close to nil. About half the ejidatarios have water piped to the yard and a private faucet near the house. One has a special room, equipped with a cold shower; this is the only instance of running water within the house. The edge of the dry river bed and an open ditch north of the village function as public toilets. There is nothing as advanced as an outhouse in the entire community, except at the school (p.29). Waste water is tossed into the yard or into the "street" to settle the dust. Garbage is fed the domestic animals or is dumped on trash mounds on the edge of the village, along the river shore.

Kitchen arrangements are far from felicitous. Most kitchens are of adobe brick, unplastered, with earth floors. Animals (chickens, pigs, dogs, cats) have the run of the house, but tend to congregate in the kitchen. Water for drinking and cooking is stored in pottery jars which quite often sit directly on the earth floor. Some women give the maize dough its final grinding, with the milling stone directly on the floor of the house, and many wash dishes in a bucket or basin which sits on the floor. As a rule, cooking is done on a raised adobe platform, often equipped with a hood, and thus resembling afireplace with high hearth. About half the families use coal oil stoves in preparing part of the food. The kitchen, as well as the other rooms of the dwelling ordinarily have combined functions, which will be discussed in some detail later.

SUGGESTIONS FOR IMPROVED HOUSING

The foregoing gives some ides of present housing in the Laguna and in El Cuije specifically. The discussion to follow concerns possibilities and recommendations for improvement. Although the dria apply concretely to the ejido of El Cuije, assuredly they are of wider application.

Orientation

Orientation of the present settlement of El Cuije is determined by the main thoroughfare, which runs roughly east-west. Accordingly, most houses are aligned with the cardinal points, although the people seem

generally to agree that southeastern exposure would be preferable. Winds are sometimes strong and often quite variable; in winter the north wind is cold; in summer it brings blasting heat; throughout the year, and especially in spring, it bears clouds of suffocating dust. Moreover, during the warm months, the heat of the west sun is excessive. On the whole, houses need solid protection to the north and west, and the preference indicated by the ejido seems pretty well to agree with the orientation we should have suggested on the basis of the official meteorological data.

The site of the proposed new village overlaps in part with the present one, hence the stipulated orientation involved drastic change. It was not practical to change the axis as a whole of the main road which enters Cuije from the highway, since on the eastern outskirts of town it crosses a bridge and, moreover, passes the corralón, which is a cluster of corrals (for machinery and animals) and communal storerooms. Clearly this unit should be left on the main line of communication. Our solution was to let the road stand unchanged, to a point past the bridge and corralón. Thereupon, we swung it sharply north, and again southwest. The new loop to the north traverses the as yet unbuilt part of the new site; part of the southwest stretch cuts across the old settlement, passing diagonally through the present plaza.

This arrangement allows room for the construction of some 30 dwellings before any of the present buildings need be demolished; it makes possible the surfacing of the new, main thoroughfare 5/ without razing

^{5/} Ejido authorities hoped to have the road surfaced at state expense and applied in Saltillo for such aid. We have not learned the outcome of the application.

houses; and the planting of trees at once, almost the full length of the proposed artery.

In addition, the suggested layout provides for a plaza, with ample space for various public buildings. In time, the community presumably will need a municipal office and perhaps a one-room jail; a building to accommodate the communal store, and one for the communal mill. Possibly it might be well to provide a few stalls for the occasional sale of meat and other commodities, although we do not foresee that all Cuije will become a market center in the near future. In time, the community may be interested in some sort of public structure where moving pictures can be shown; and possibly even in a chapel. The present report does not attempt to consider such public buildings, but concentrates on problems connected with the private dwelling. Inasmuch as the ejido has no funds whatsoever available, this seems not the time to plan major public works. But the suggested layout provides ample space for such buildings.

Gratifyingly enough, the ejido was patently pleased with the proposed plan and from one day to the next accepted it officially. As reported above, DCISP engineers already have surveyed the site and blocked in streets and lots. <u>5a/</u>

Since the above was written, and about 4 months since the survey was made, comes word from Torreón that the Cuije officials have "changed their minds;" that they now prefer an old layout, prepared 6 months earlier by the engineers and rejected at the time by the ejido in no uncertain terms. The objection to the now-surveyed layout is that the main thoroughfare passes the school at an angle instead of parallel to it and that corresponding changes will have to be made in the school grounds. This situation was pointed out specifically to informants when the proposed plan was submitted for consideration.

Size of lots

After lengthy consideration and several reversals of opinion, the community finally decided on lots 20 x 30 m., with 4 lots to the block. We had suggested somewhat larger plots, even though they would add to the cost of installing public utilities. However, the new village site not only covers the present one, but extends somewhat beyond it, into the cultivated fields to the north. The people felt, quite prudently, that they should not reduce the available farm land more than was really essential. It is some consolation that the 20 x 30 m. lot is larger than are the premises of most of the Cuije families at present.

Architectural style

We feel strongly that any housing program in the Laguna should not affect ultramodern design but should conform to local architectural tradition. The basic unit of the latter is a simple, rectangular room of adobe brick, often combined with an open, roofed corridor (portal). This type of structure is relatively inexpensive to build; can be constructed by unskilled labor; is admirably suited to local climatic conditions; and, to us, at least, is aesthetically pleasing. Last, but not least, the native-type house tends to disintegrate more gracefully than does one of a more pretentious style, and this consideration should not be overlooked in a zone where householders tend to be notably casual about repairs.

From the start, we have seen the Laguna housing problem chiefly in terms of adapting and modifying as effectively as possible the already-existing type of house. Such a solution promises to be most practical.

Not the least of its advantages is that people are most likely to feel at home in a dwelling which preserves many of the fundamentals of the house to which they have been accustomed all their lives.

Informants indicated interest in two elements which, although part and parcel of Mexican architecture, seldom are found in small rural settlements. Of the 57 families, 51 indicated the desired relationship between house and lot thus:

House built on walled lot House built flush with street

36 . <u>15</u>

51

Implicit in the first choice is a front patio with a garden—that is, the ejidatario envisages a strip of garden between the main street entrance and the house proper.

We assume that there will be two more patios. Immediately to the rear of the house will be a service yard, with laundry and outhouse and with space for granery and hemispherical adobe oven. A third patio, or corral, separated by a wall, will be at the extreme rear of the lot, to provide accommodations for domestic animals. This back corral will have an additional entrance from the side street, so that animals need not approach the dwelling, even if they are taken daily to posture. An ample storeroom will be situated either in the service patio or in the corral.

With respect to the house proper, it may be noted that 48 ejidatarios unanimously agreed that "security measures" were essential. Presumably, therefore, we should think in terms of barred windows as well as of walled lots.

Walls

It already has been stated that we feel construction should be of adobe brick which, among its other virtues, provides good insulation in an area of temperature extremes. Although the natural earth color is pleasant and melts attractively into the landscape, the exterior walls presumably should be plastered, in the interests of durability and reduction of tick hazard. Walls so finished could, of course, preserve the natural earth color, but as a matter of prestige the ejidetario will prefer to have them lime-washed in brilliant tones. For obvious reasons, interior walls should be plastered.

At present, adobe structures are built casually, without special foundations. Stone is not available at all Cuije but can be hauled from a point near all Coyote, some kilometers removed. To reduce buckling and settling, the engineers assuredly will recommend stone foundations.

Greater permanency likewise will be attained by having door and window frames edged with fired brick, which also should cap the terminal row of the adobes which form the house walls. Theoretically, eight families have available a certain amount of burned brick, the owners' estimates running from 15 square meters to approximately 3,000 bricks. Almost without exception, these are incorporated in the present dwelling and considerable breakage doubtless will take place in the course of removal.

Roof

Because of the scarcity of wood and its consequent cost, roofing is going to be an expensive item. Asbestos and other commercial sheet forms are unsightly as well as expensive and the former, at least, necessitates heavy supporting timbers. After careful consideration, we feel that the inexpensive roofing used at present in the traditional house probably is about as satisfactory as would be anything else. It does not, to be sure, give really adequate protection in heavy rains, but those are practically negligible in the Laguna.

Each room of the traditional house has a single shed, independent of other rooms. Construction is simple. Walls are built to the desired height. Timbers—formerly unworked and round in section, but now squared,: 2"x6" 6/ are laid at intervals, from wall to wall, across the short dimension of the room. On top of that comes a transverse layer of closely

^{6/} Timber is sold by feet and inches, not by meter.

spaced light canes or, in the more pretentious homes, of thin boards. Over this, two layers of mud or of mud and mortar are applied. For 49 of the 57 families, we have expression of preference concerning roof "lining"; 39 requested boards instead of canes, some stating that cane now was scarce, others that they were tired of the sight of it; only 7 preferred cane. For the exterior roof coating, 46 expressed an opinion: 26 asked for mud and mortar; 19 for mortar alone; 1 for mud and cement (sic).

Actually, if a roof of this type could be built double, with a layer of dead air between, excellent insulation should result. However, such construction would double the timber required and, by the same token, double the cost. At the moment, at least, the ejidatarios have no funds to squander thus.

Wood is so precious that all sound beams will be removed from the old houses and installed in the new, and we have made an inventory of such

usable material. Because the beams are in place, accurate measurement is next to impossible, but it would seem that the majority (282 beams, divided among 24 families) are 2" x 6" x 12". Beams of 14' are less numerous (194, among 19 families).

We understand that the ejido plans to pool available timber, reimbursing individual families from public funds. Thus if one family happens to have 37 12-foot beams, we need not feel that all of these must be used in its new house; as beams become public property, they may be distributed among various dwellings. Obviously, however, to spare nonessential expense, we must plan to make full use of the shorter, as well as of the longer beams. If the storeroom of the new house is proportionately long and narrow, with inside width not to exceed 3 m., (p.39) the community's stock of 12-foot beams presumably could be used to good advantage.

Floor

With extremely few exceptions, present houses have floors of hard-packed earth; there are rare instances of brick and of cement, so infrequent as to be negligible. Obviously, a hard-surfaced floor would contribute greatly to improved hygienic conditions.

Preference of 50 of the 57 ejidatarios of El Cuije was expressed thus:

Cement	39
Brick	2
Brick, with layer of cement	ĩ
Cement tile, first choice; cement,	-
second	7
Cement tile, first choice; cement,	•
second; brick, third	1
	

Cement seems clearly indicated. Brick has the obvious disadvantage of being porous; moreover, the local product seems not to wear well on floors. In spite of the above listing, virtually every ejidatario would prefer cement tile, which comes in handsome colors and elaborate designs, and which is used extensively in Torreón; conscious of the additional cost, they restrained themselves in expressing preference. Pigment can, of course, be added to cement, so that the unattractive dun color is eliminated; the relatively modest additional cost might be justified in view of the pleasure a colored floor would give the occupants of the new house.

At the wall-floor juncture, there should be a generous cement "base-board," so that the floor may be washed without damage to the adobe wall.

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Doors, windows

The advisability of edging door and window frames with burned brick has been noted above 'p. 13), and it likewise has been mentioned (p. 13) that timber is scarce and expensive. Moreover, local Cuije carpentry is inexpert. The consequence is that doors and window shutters generally are poorly constructed, of makeshift lumber. Nevertheless, the ejidatario treasures them and often we were shown decrepit relics which the owner confidently planned to transfer to any new domicile which might be built. We have a relatively complete inventory, with rough measurements, family by family, of doors and window shutters; it seems likely that the engineers and the ejido authorities will have to pass jointly on these, for a new building could be ruined by the indiscriminate use of hand-me-downs. Of course, there is no uniformity of size or proportion. In the long run, utilization of the old material might prove almost as costly as the manufacture of new, on large scale and to uniform size, for there is such a thing as false economy.

In particular, it seems likely that most of the window frames and shutters should not be carried over. In the first place, we feel that windows, especially those to the southeast, should be considerably larger than those now used. In the second place, we recommend that all windows, or at the very least, those to the north, be equipped with glass, and present frames do not permit such installation. In the third place, it is quite likely that iron window frames may not be much more expensive than wooden ones, in this particular zone; and certainly they would be more permanent.

Ventilation and lighting

These aspects have been touched in the previous section but here will be considered in greater detail.

Because of dust storms, all doors and windows should be so constructed that they can be closed rapidly and tightly. Although prevailing winds are from the north, eddies achieve turns of 180 degrees, quite without warning.

In view of the oppressive summer heat, good ventilation is essential. During hot weather, Cuije families sleep, cook, and otherwise live out of doors, but this is no reason why a model house should not be planned for maximum comfort throughout the year. All rooms should have cross ventilation, which can be closed during cold weather. Informants were unanimously interested in the use of high, bull's eye windows as a ventilating device, yet they were unwilling to consider rooms sufficiently tall to accommodate such windows. We should recommend floor to ceiling height of 4 m., but local preference runs thus:

Commence of the Commence of th

2.6-2.8 m.	2.
3 m.	35
3 m. "or slightly more"	2
3.25 m.	7
3.5	ર્દ
4 0	3.

Informants were not asked in terms of meders, but each indicated the desired height with reference to his our rest dwelling, and we made the corresponding measurement.

During the hot season, the west sun is particularly trying and protection from it is welcome. Large windows should be concentrated on the southeast, to receive the sun during winter; smaller windows to the other points of the compass would provide ventilation.

We are uncertain what measures should be taken to control files and, during certain months, mosquinoes. The obvious solution would be screens. But it is doubtful that doors would be kept closed. Window screens could be stationary, but with doors open they would be of no use. Moreover, screens require considerable upkeep. This problem has been discussed tentatively with the DCISP engineers in Torreon; they are opposed to screening and recommend clearing the settlement of the rubbish that attracts the flies. This sounds admirable, but we fear it may be about as difficult to persuade people to change their well-established garbage-disposal habits as it will be to have them utilize screening effectively.

Lighting requirements are in no wise the same as ours. In an area where most of the year is oppressively hot and where the sun is bright at all seasons, a house without interior glare undoubtedly is restful. Furthermore, little close work is carried on indoors and extremely little at night. Although, technically, the population is largely literate, it assuredly is not academic; to devote an evening to reading would be startlingly contrary to local culture patterns. From our observations, we conclude that the woman does most of the close work, in the form of sewing and mending; she generally works on those chores in the afternoon, seated in the open corridor of the house or in the yard.

Artificial lighting presents unique problems. The ejido pays the light bill of the community as a whole and prohibits the use of electric plates 7/ and of more than two light bulbs 7/ per ejidatario. Sockets are

^{7/} In part, as an economy measure; in part, because the drain of the electric plates was so heavy that the maize mill could not function. At present, only the school teacher has permission to use an electric

plate. Because of his official duties, the judge is allowed an additional light bulb in his house. Some families have a decorative globe on the household altar, used upon rare occasions; these seem not to be counted in the official allotment.

not limited; some families have 3 sockets and move the two bulbs from one to another, according to specific lighting needs. Most have a different solution. The socket is at the end of several meters of loose electric cord, and the light is dragged from one room to another, as needed. Not infrequently, the globe is placed in the doorway between two rooms, or in a perforation cut in the wall, so that adjacent rooms receive light. Some ejidatarios have only one bulb, having ceded the right of the other to a libre relative.

Householders were asked where they would prefer their two allotted bulbs. About the full range of possibilities is represented in the 57 replies, the most frequent of which are:

l, kitchen; l, bedroom (which, locally, generally	
functions also as a living room)	21
1, kitchen; 1, living www.bedroom	5
1, kitchen; 1, between two bedrooms	4
1, kitchen; 1, open corridor	_5_
	35

Other combinations are less numerous, with 3 or fewer requests for each one.

Unless present restrictions are lifted, evidently we must think in terms of a model house with a maximum of two light globes. Our feeling is that with one in the kitchen and one in the living room-bedroom, some sort of provision for extension to the corridor can be made.

Size of house

Size of house depends in part upon the number of occupants and upon their relationship to one another. 8/ For this reason, we took a careful

^{8/} At the start of the survey, we were informed by the head of Servicios Médicos Rurales, that a prime objective was to "reduce promiscuity."

census of the families of ejidatarios. The number of persons per family ranges from 1 to 19, with the average slightly over 6, and the mode, 5.

Number of persons	Number of families
l	2
2	4
3	4
4	6
5	9
6	8
7	8
8	6
9	3
10	4
13	1
15	1
19	1

Composition of the family is widely variable, ranging from two instances of a lone person 9/ to an ejidatario with a wide assortment of relatives. The basic unit is the biological family, in many instances

augmented by offspring, together with the latters' spouses and children. Patrilocal residence is common. Daughters who produce illegitimate children, without establishing a permanent or semi-permanent union, remain in the paternal home.

At present, living quarters are cramped. If roofed shelters, open corridors, and kitchens are not counted as formal rooms, there is an average of 3.56 persons per room; if rocfed shelters and open corridors are counted as half, the average is 2.97 persons per room.

There are still other major considerations in determining the size of the model home. The Cuije housing project has been planned—both by Servicios Médicos Rurales and the community—as a communal enterprise, with expenses borne by the ejido and with all indebtedness distributed equally among the 57 ejidatarios. Therefore, it is essential that precisely the same house, representing precisely the same investment, fall to the lot of each ejidatario.

To build a model house gauged to the needs of the largest families, or even the average-size families, would penalize those whose requirements

One of whom is a woman. In all Cuije, 6 ejidatarios are women. One succeeded her husband, when the latter abandoned the family; 4 are widows, having inherited from their husbands; one is the adopted daughter of an ejidatario and upon his death fell heir to his agrarian rights.

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are on smaller scale. Accordingly, it would seem that the ejido project must focus on the minimum unit—that is, the house needed by the smallest families of the community. However, thus minimum come must be so planned that to it the larger families may add mones at their own expense. These additional rooms may total 3 or even n, but the core must be designed so that with or without supplementary mooms, the house is an integrated, well-planned structure.

Function of rooms obviously is basic in calculating housing requirements. The present Laguna house seldom affords the luxury of a room which has a single function, and we have made a careful survey of the uses to which each room is put. For example, among 45 families, 10/ the kitchen is

10/ Of the 17 ejidatarios. The apparent numerical expess in this and the succeeding paragraph is owing to overlap in functions and to the fact that a single family may have what amounts to two kitchens, one for hot weather and one for cold. Moreover, a family often has more than one room, used as living and/or bedroom; here again, the room in which the family foregathers and where guests are received (our definition of living room) may not be the same in summer and winter.

likewise the dining room. The kitchen may serve also as living room (13 cases); as bedroom (10); granary and/or storeroom (6); poultry house (1); and butcher shop (1). It would seem logical and in keeping with current practice for the model home to have a combined kitchen and dining room.

Similarly, it is customary for the living room to have multiple functions. Combination with the kitchen has just been mentioned. More frequently, the living room is also the bedroom (62 cases) 10/; dining room (34); and granary/or storage room (23). Here again, we are on sound footing if we plan a house, one room of which combines the functions of living room and bedroom.

It would seem, in view of the foregoing considerations, that the minimum requirements are: a combined kitchen and dining room; a combined living room and bedroom; an open corridor; sanitary facilities; and provision for domestic animals and storage. The latter problems will be treated subsequently, in separate sections. This modest house would be adequate for the 6 families which consist of 1 or 2 persons, and for 3 of the 4 families which are comprised of 4 persons. In other words, it would suffice for 9 of the 57 families of Cuije ejidatarios. The larger families would add to the minimum core, at their own expense, according to their individual needs and financial possibilities.

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Size of rooms

Actual dimensions of rooms will be worked out later, in collaboration with the engineers, but here we may suggest some minimum requirements.

The kitchen-dining room should be confficiently large to accommodate a number of built-in features and to permit the family to be seated comfortably at a table. It must be borne in mind that, thanks to its open hearth (p.23), the kitchen will be the one cozy spot in the house, during the brief but sharp cold spell of winter; as such, it is bound to function part of the time as a central gathering place for the family. Under the circumstances, we suggest 4 x 5 m. as minimal dimensions, and we should prefer a room somewhat larger. Special aspects of kitchen planning are discussed in the succeeding section.

The combined living room and bedroom must be sufficiently large to accommodate the standard assertment of furniture. As with us, economic position may be gauged roughly by household equipment. One informant states flatly that the first thing the ejidatario buys is a bed, and in all Cuije there is no family without at least one. His second step, funds permitting, is a wardrobe. For supplementary storage of clothing, he has small trunks (petaquillas) and cheap metal suitcases (belices), the latter in brilliant colors. These two items seem not to have definite position in the economic scale, as do the larger, more expensive items. The third major purchase is a glass-front china closet (vitrina), which occupies a prominent position in the living room-bedroom. Distinguished by name and function from the kitchen cupboard, the dish closet is a mark of prestige and affluence. The 29 families so-equipped acquired their purchases in the prosperous times of some years ago.

Sewing machines and radios also fall within the luxury range, with the radio the more popular; 24 families have both; 2 have sewing machines but no radio; and 14 have radios but no sewing machines. Most of the latter are treadle machines; the radios, however, are small table models and require no particular space allotment. Often they sit on a wall bracket, near a light connection.

Distribution of living room-bedroom furniture among the ejidatarios of El Cuije may be summarized thus:

	Total items	Families Jacking such items	nverage per family	Maximum per family
<u>11</u> /				
Beds	142.5	0	2.5	7
Wardrobes	61	10	1.1	3
Trunks	65	14	1.2	7
Suitcases	52	19	1.1	7
Dish closets	36	22	•6	3
Sewing machines <u>lla/</u>	26	31	•5	1
Radios (table model) 11b/	40	19	•8	2

11/ Almost invariably, a double bed. In the calculations, the infrequent occurrences of single or three-quarter beds have been counted as half.

<u>lla/</u> Most of the 26 sewing machines are appient; 17 are treadle type; 5, hand-crank table models; 4, unspecified.

11b/ Of the 39 radios, 30 are in active use; 7 are out of order; 2 are pawned.

By day, the bed serves as a sofa and, in addition, most households have a number of straight chairs; often, people sit directly on the ground, or on sacks spread on the ground. Wardrobes seem sufficiently plentiful so that we need not go to the expense of equipping the model house with closets, which are cumbersome and space-consuming, when construction is of adobe.

On the basis of furniture holdings, it would appear that the living room-bedroom must be planned to accommodate at the very least the following: two double beds; a wardrobe; a dish closet; a trunk; a treadle sewing machine; and several straight chairs. It will be difficult to fit this repertoire in a floor space less than 4 % 5 m., and even with these dimensions the room will be uncomfortably crowded.

The open corridor, or breezeway, has fewer rigid requirements with respect to size. If it is commodious and well located, it will function as an all-purpose room during the warm months. Size will depend in large measure on the proportions and arrangement of the other two rooms.

Kitchen planning

Present kitchens are lamentably cramped, dark, and poorly ventilated; they have adobe walls and earth floors which are impossible to keep clean; and they have no provision for work surfaces or for storage. It should not be difficult to plan a kitchen immeasurably better than the current one, but several factors must be considered, so that maximum convenience may result from the means at our disposal.

In the statements below, we have date from all Cuije ejidatarios. However, some live in the same house and give information jointly with respect to kitchen arrangements. For the latter themes, the number of households totals 52 instead of 57.

General considerations. We should think of the kitchen as a well-lighted room, with cross ventilation, and sufficiently large for cooking and eating in comfort. Fly control is even more important than in other rooms, and we might consider the advisability of stationary screens on the vindows, with a strong spring on the screen door.

For hygienic reasons, it is important that the kitchen have smooth, easily-cleaned walls; areas adjacent to the hearth and work counters should be faced with cement or cement tile, to permit easy washing. For the same reason, the floor should be of cement, with a cement "baseboard," at least 10 cm. high and preferably more, at the wall-floor junction. As a matter of convenience, counters and hearth should be recessed some 5 cm. at floor level, to provide toe space.

Fuel and cooking facilities. Fuel is notably scarce and families collect twigs and other rubbish; an occasional fallen tree represents a major stroke of good luck, and the communal tractor is loaned, to drag it to home base. Some dry dung to be used as fuel. 12/ The fire generally

12/ Somewhere along the line, the ejidatario has obtained the idea that it is shameful to use dung. A few informants were apologetic; a few, defensive; others flatly denied the practice, although the kitchen might be piled high with such fuel and it might be clearly visible, spread to dry, on the outdoor oven.

is built on a raised platform equipped with a hood; the effect is quite similar to a fireplace, raised well above floor level.

Among our 52 families, 34 have coal oil stoves. Of the latter, 4 are out of order; 6 families claim to have no money for fuel or otherwise to be unable to obtain it. 13/ Accordingly, 24 families, or something less

13/ Distribution is largely through the communal store, which often runs out of kerosene and other staples.

than half the total number, make effective use of the kerosene stove; none uses it exclusively.

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Only 6 families regularly prepare <u>nixtamal</u> (that is, steep dry maize with lime) with water heated by coal oil; others use the wood fire. The stove is even less favored for baking tortillas (maize cakes), and only one family habitually uses it. For cooking beans and for heating bath water, the wood fire is overwhelmingly favored. In short, for the most basic operations, petroleum is little used; it is more popular for the preparation of dishes such as soups, stews, coffee, and so on.

Two families have wood stoves of iron, but seldom use them. Upon rare occasions, one family buys charcoal and burns it in a portable brazier; the rest of the time, reliance is exclusively upon the open fire on the hearth.

In summary, wood stoves and charcoal are so little utilized that we may disregard them. Despite paucity of fuel, it is clear that the model home should retain the tradition of the open fire on the hooded hearth. We calculate the most acceptable height for the hearth to be 65 cm. above floor level.

Nevertheless, a place in the model kitchen should be earmarked for the coal oil stove, because it seems inescapable that, with the passage of time and the increasing scarcity of scavengered fuel, the petroleum burner will attain greater popularity. In planning furniture placement, it should be remembered that, although a stove needs good lighting, the burner will not function properly in a strong draft.

Nork counters. Work platforms, or counters, with storage space beneath, seem to us to be practical, inexpensive, and of great importance. In the first place, they would contribute enormously to improved hygienic conditions if they could accommodate the pottery jars, which contain potable water; the metate or hand mill; and the dish-washing equipment. At present, in many Cuije homes, these three items repose on the earth floor of the kitchen, where domestic animals wander at will. In the second place, counters at convenient height would save the housewife backstrain and useless expenditure of energy. In the third place, it seems to us that the dismal want of order in so many Laguna kitchens results in large measure from the simple fact that there is no place to put things, except on the floor, on the table, on the hearth, or on the wall. A shelf out of the way, beneath the counter, might relieve the littered aspect of the kitchen considerably.

That the Laguna was populated in relatively recent years, by people of distinct cultural traditions, is evident when motor patterns are inspected. In 4 families, the women kneel to work the metate; 14/ to pat

14/ Strictly speaking, in Cuije, a woman almost never grinds on the metate. The ejido has an electric mill which grinds maize gratis; the corn, steeped with lime, is carried to the mill daily. But in making the tortilla, the dough receives a minor work out on the hand mill.

the tortilla into shape; and to bake it. In the other families, they stand to perform the same operations. Clearly, the standing posture is so dominant that it is the one for us to consider. Women who stand to manipulate the metate sometimes rest it on a low adobe bench built for the purpose; some put it on the hearth platform, to one side of the fire. In other words, after a fashion, they already are using a counter. However, the stone mill is not left in place, but generally is stored, when not actively in use, on the floor leaning against the wall.

The hearth, or "chimney," where the tortillas are made is the focal point of the kitchen, and we suggest that to its left be a counter dedicated to the preparation of tortillas. In sequence, moving away from the hearth, would be (1) a space for the tortilla press, which a number of families use; (2) for the metate; and (3) for a jar of potable water.

This arrangement would accord with the motor patterns of the tortilla raker. As the woman gives the dough its final grind on the metate, she can dip water from the olla, as needed, with her left hand. With her right, she can, without moving, reach the baking plate on the hearth; to place on it a newly-formed tortilla, to turn one, or to remove one already cooked. Obviously, for a left-handed woman, the counter should be to the right of the hearth.

We calculate the height of the tortilla-making counter at 50 cm. above the floor; that is, somewhat lower than the hearth, which is to be 65 cm. At first blush, the counter may seem extremely low, but it must be remembered that the metate is a tripod artifact, whose rear foot may be from 16 to 29 cm. tall, and the work height of the stone thus raised by the same distance. We have taken careful measurements, especially in El Duraznito, and find that women use the metate with its proximal grinding surface anywhere from 59 to 91.5 cm. above the floor. A counter of 50 cm., plus the height of the metate, would provide a work surface more or less of average height.

To the right of the hearth, we suggest a counter for the legless oil stove 15/, for food preparation in general, and for sish washing. To

^{15/} Some stoves are provided with legs and are of convenient height without necessity of a counter. One of this model obviously would be placed beyond the counter, considerably removed from the hearth. The wall behind it should be surfaced with cement or cement tile, to permit cleaning.

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have cooking activities centered, the oil stove would be immediately adjacent to the tortilla hearth. To its right would come an open counter, for food preparation in general and for dish washing; and on the far right, a jar with potable water. This counter would be in two levels: (1) adjacent to the hearth, for a distance of 2.4 m., it would be of 50 cm. height, to accommodate the legless oil stove; (2) the balance of the counter would repeat the hearth height of 65 cm.

Counter arrangements and corresponding dimensions are much more easily understood through drawings. Detailed sketches, to scale, of these counters have been prepared for the IDuraznito remodeling project and could be used, almost without change, for the Cuije kitchens. All counters should have their horizontal surfaces of cement or cement tile, and as noted above (p. 22), adjacent walls should be similarly faced. The upper surface of the counters might well have a slight depression, so that the round-bottomed water jar will sit securely; the tortilla counter might have a second depression, to accommodate and anchor the rear foot of the metate. As noted above, all counters, as well as the hearth, should have a basal recess to provide toe room. Counter length of course will vary with the size and proportion of the room, but the tortilla counter must have a minimum depth of 70 cm., in order to accommodate a large metate. The other platform may be narrower; 50 cm. probably is sufficient.

It already has been suggested that counters be open-faced, to provide storage space. In the tortilla counter, a vertical division could separate an area adjacent to the hearth, for storage of wood and twigs, which at present are simply tossed on the floor. The other counter might well have a cavity beneath the oil stove, in which petroleum containers could be stored. The remaining sections of both counters should be equipped with a shelf at mid-height.

Above the right-hand counter, where food generally is prepared and dishes washed, it might be helpful to have a couple of horizontal wooden bars, with hooks, affired to the wall; from them could be hung various utensils in orderly fashion.

Sanitary facilities

Water supply. As every Laguna resident knows, water is a scarce and expensive commodity in that zone. Seldom is there sufficient to irrigate the crops as desired; every drop used for domestic consumption means that much less for the fields; and all water (in El Cuije and many other ejidos) is pumped from deep wells, at very considerable expense. For these reasons, we must think in terms of frugality; for the same reasons, the model house will not have an extensive garden, nor will it be lavishly equipped with faucets.

Near the present settlement of El Cuije are 4 deep wells, whose quality of water, from the viewpoint of the consumer, is quite different.

The "best"—that is, water with "good flavor" and water in which soap lathers readily—comes from the relatively new well somewhat to the northeast, near the cemetery. On the northern fringes of the village is another well, equipped with a storage tank. From the latter, the new settlement presumably will be supplied. However, women informants consider water from the corresponding well only moderately acceptable. This point was discussed with our engineers, who felt it might be entirely feasible to pump from the well near the cemetery to the tank on the fringes of town; in this way, the new El Cuije would have the best water available, at the same time making use of an existing storage tank.

At present, about half the ejidatarios have no private or semiprivate water supply; 18 have private faucets, near the house; and 12 have semi-private ones, owned jointly by two or more families.

Everyone looks forward to having a private water supply in the form of a single faucet adjacent to his house. With respect to its location, there is surprising unanimity. Not one person is interested in having the faucet in the kitchen, or even in the laundry, providing the model house were so-equipped. Informants shrewdly comment that it is difficult to have a faucet that does not leak; and that, as a result, the house would be humid and "animals" (cockroaches) would abound. Without exception, the ejidatario wants the faucet either in the garden or in the patio—that is, in the yard, near the house. Some specifically request that it be near the kitchen, near the corral, or near the garden. This is more or less the present situation in the houses which have a private faucet. Several families attach a rubber hose to facilitate distribution in the house and yard.

Bathing facilities. Present bathing habits vary drastically, for season and for sex. Moreover, educational influences have had sufficient impact for the ejidatario to know that outsiders consider frequent bathing admirable, and in a good many cases we suspect that the informant's family bathed with far less frequency than was declared. However, that during summer men and children bathe almost daily, or even oftener, in the deposit adjacent to the well or in the irrigation ditch is pretty well demonstrated by observation.

The bathing situation is summarized in the accompanying table. Totals far exceed 57, because of differences within the same family and because of variant preferences for a single individual.

Men bathe more frequently in the house during cold weather; in summer, they generally go to the deposit adjacent to the well just northeast of town. For the home bath, they use the large, round, galvanized wash tub. During winter, a weekly bath, on Saturday, is most common. Those who bathe at home generally use warm water, heated on the kitchen hearth. During summer, many bathe daily, adjacent to the well. Saturday still is

BATHING HABITS

		Ne	n	W	omen
		Sea	son	Se	ason
The second section of the second seco	en e	Cold	Hot	Cold	Hot
<u>Place</u>	Yard of house Corral Room of house Community well Irrigation ditch Irrigation ditch or	1 1 28 12 2	0 1 6 34 3	2 2 45 0	1 38 2 1
	yard of house Community well or	0	0	0	1
	yard of house Community well or	0	0	0	1
	room of house	0	0	0	1
Container or equipment	Round, galvanized wash tub Metal drum Wooden laundry tray Shower	25 3 3 1	6 0 0 1	36 3 9	32 2 8 0
Frequency	Daily Thrice weekly Twice weekly Once weekly	1 1 7 26	17 7 9 4	1 1 10 33	8 14 14 3
Preferred days	Monday Tuesday Vednesday Thursday Friday Saturday Sunday No set day Daily	1 0 7 1 1 25 2 14 1	0 7 7 6 4 13 2 8 17	1 3 11 0 30 7 10	1 7 16 9 6 23 9 8
Temperature of water	Cold Warm Hot Variable	17 22 7 0	43 1 0 0	5 31 9 3	34 9 1 2
Manner of heating water	Bonfire in yard Kitchen hearth Petroleum stove Sun Variable	4, 23 4 0	0 6 0 0	2 34 4 0	0 7 1 1

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the preferred day, but there is a heavier sprinkling throughout the week. One man alone has installed a shower in his house; it spews unheated water in which he bathes summer and winter.

Throughout the year, women tend to bathe at home, using the round, galvanized wash tub; less frequently, the wooden tray. During winter, the Saturday bath is popular, less so, a bath twice a week. It is a standing joke that women prefer to bathe in scalding water, but their own statements indicate a preference, during winter, for "warm." Again, water is heated on the kitchen hearth. During summer, a few women bathe daily; most feel that two or three times a week is sufficient; Wednesday and Saturday are the most popular days. A surprising number of women bathe in cold water during the hot season.

What does one conclude from the foregoing? Bathing in the deposit adjacent to the well or in the irrigation ditch has manifest advantages. There is no waste water, for the stream continues to irrigate the fields; and there is no problem of drainage, as there is when the bath is taken in the house. However, it seems clear that women throughout the year and men during the cold season are going to bathe at home, and some provision must be made in the model house.

Our guess is that the men will use a shower if one is installed, together with a small tank (possibly one of the metal drums so plentiful in the zone) on the roof, whose water can be heated by solar action. We are uncertain if the woman is going to abandon the wash tub. It seems likely she will continue to prefer it; and, in any case, small children presumably will be bathed in the tub rather than under the shower. In any event, the portable laundry tub could be used quite conveniently in the shower room, which assuredly will have a cement floor and some sort of drain. During most of the week, this "bathroom" presumably will have little traffic, but if present patterns continue, it will be put to good use, especially on Saturdays and, to a lesser extent, on Wednesdays.

Laundry. Before we attempt to formulate plans for laundry facilities, it will be well to inspect current practices.

Clothing is washed in the open air, either in the patio of the house or in the nearby irrigation ditch. The latter has the obvious advantage of providing running water without hauling and of avoiding any waste of the precious water. In El Cuije, we noticed no stigma attached to washing in the irrigation canal, but the wife of an ejidatario of El Duraznito told us loftily that she could not be reconciled to washing clothes except in her own home. For 50 Cuije families, locale is as follows:

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Irrigation ditch	10	
House patio (although 10 of the houses		
have no private water supply)	30	
Sometimes ditch; sometimes house patio	9	
Woman ill; relative does laundry elsewhere	1_	
		50

Clothes are washed in a shallow (13-19 cm.) tray, with corrugated floor. Purchased in the Torreón market, the tray may be of wood or of cement; the former is cheaper and more common:

Wooden tray	31
Cement tray	13
Both types	4
Galvanized wash tub	<u>1</u>
	 48 49

A woman who washes in the irrigation ditch uses a wooden tray, because the cement one cannot be transported with case. At home, the laundry tray sits directly on the ground, if the woman kneels; or on some sort of support, if she stands. This may be a platform of adobe bricks, hence relatively impermanent; an old wooden box; or a metal drum, cut transversely about the middle. In other ejidos, we saw commercial wooden trestles to held the tray to proper height, and in Cuije, one family has a professionally-built burned-brick stand. By and large, the partial metal drum is most common, and most wemen stand to wash clothes.

Invariably, the tray seems too low for comfort. One woman washes with the floor of her shallow laundry tray only 35 cm. above ground level; this is well below knee height and, standing, she must bend double. Other heights range from 38 to 55 cm. Even the latter seems low and we feel considerable backstrain could be reduced by using a slightly higher level. Many women were asked concerning the present height of the tray. Most agreed at once that it was far too low—but would add that there was no base on which to rest it; that the husband was apathetic in helping about the house; and so on.

Most women washon Monday (26 cases) and/or Tuesday (20); a few claim to concentrate laundry work on Wednesday (11) and /or Thursday (12). During the rest of the week, laundry activities are sporadic. Most (30) wash in the afternoon, when other household tasks bave been completed.

With this brief background in mind, let us take stock. It seems evident that the model home should be equipped with laundry facilities and that they should cater to the woman who stands to wash clothes.

At first blush, it might seem advantageous to plan a combined bath (that is, shower) and laundry. Both need a water supply at hand. There

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would be relatively little conflict in time, for Wednesday and Saturday are the favored days for the bath; Monday and Tuesday, for the laundry. However, it seems likely that such a combination would not be satisfactory, simply because the woman is used to washing clothes in the open air.

A laundry tray in the yard, covered by a simple roof, probably would be most acceptable. In fact, the cement tray now used by a number of families could be set on a permanent base and should suffice, provided there were water at hand. The tray should be set at a slight incline, with the proximal end higher than the distal; we feel that the floor of the tray, at the proximal end, should be at least 70 cm. above the ground.

Toilets vs. privies. Except for some imperfectly functioning toilets at the school, El Juije is innocent even of latrines. Three families are accustomed to use a special corner of the yard or corral, more or less sheltered from public view, but without even a pit to receive the waste. By far, most families (33) simply repair to the edge of the now-dry river bed; some (9) make similar use of an open ditch (tajo viejo) north of the village; some use either indiscriminately.

To make proper use of a flush toilet and to keep it in repair requires a certain amount of experience which the ejidatario clearly does not have. We are convinced that if flush toilets are installed, most will be out of order a good part of the time; that there will be waste of water on a considerable scale; and that, actually, public health conditions may be even worse than at present. At least, under current circumstances, a strong and benevolent sun helps ameliorate the situation.

The ejidatarios themselves appear to have discussed the matter of toilets, and one man reported that they had decided upon "English toilets." He said that since they knew little of sanitary facilities, an English toilet sounded like the most permanent investment. We mentioned the matter of repairs and of possible waste of water, whereupon the spokeman, beaming, replied, "After all, we are country people and know little of such matters. Why don't we simply eliminate all such features from our plans?"

On the whole, we feel that the only possible solution is the latrine, although there is not the slightest hope that it will be kept either clean or properly covered. Concurrently, we recommend that the school be equipped with modern, flush toilets and septic tank, and that the teachers be especially charged with training the students in their proper use and care. If such education be effective, in another generation, the ejidatario may be in a position to equip his house with modern sanitary facilities.

In concluding this section, we should like to call attention to a basic situation in El Cuije, which more or less nullifies any effort

n de la filología de la compositión de La filología de la filología de la compositión de la compositión de la compositión de la compositión de la comp to improve the over-all sanitary conditions. About half the population is composed of ejidatarios and their families; half, of libres. The former presumably are to have new houses, in the course of time; but the libres cannot hope for such drastic improvement in living conditions. It does little good to have a model ejido housing project, with fine latrines, if, on the peripheries of the new settlement there is a libre population, equally numerous, and cuite innocent of sanitary facilities.

Drainage. In the course of early conversations with the engineers of the DCISP, we discovered that they were planning to install a complete drainage system in El Cuije. Such provision certainly would be all to the good, provided funds permitted; but it is likely that they will not.

We have noted previously that water is an expensive commodity in the Laguna and that extravagant domestic use cuts materially into the amount available for irrigation; that the ejidatarios themselves think in terms of a single faucet per house, to serve all domestic needs; and that, except for the school, we strongly recommend latrines rather than flush toilets.

Under the circumstances, we are not sure that the community really needs a formal, large-scale drainage system. It might be considerably less expensive and about as satisfactory for the school to have an ample septic tank and for each dwelling to have an absorption pit to receive waste water from kitchen, shower, and laundry. All present, waste water is tossed into the yard or into the "street" to settle the dust.

Garbage disposal. For the most part, garbage is fed the domestic animals. Even the water with which the milling stone is washed is carefully saved for the pigs. If one has no hogs, he bestows the water on a neighbor, and in the course of time the latter may give him, in gratitude, a small porker.

Rubbish that cannot be so disposed of generally is dumped on some low mounds on the cutskirts of the village, along the edge of the dry river bed. This includes sweepings from the corral, containing animal manure of all varieties. Occasionally, a non-ejidataric farmer (pecuaño propietario) sends a truck around and buys the manure for his fields, but the ejido makes not the slightest effort to use this considerable quantity of animal excrement for its own fields. 16/ Manura from the mules owned communally

As a matter of fact, until the present year (1953), Cuije informants claim not to have fertilized their fields in any fashion. This year, they have made a test planting of clover, for the first time.

^{16,} One ejidatario declared that there was no point in his going to the trouble of manuring his plot. Since every year the fields are distributed by lot, he simply would be fertilizing a field for the benefit of someone else.

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is being accumulated to use in the manufacture of adobe bricks, but there is not the slightest notion of making use of it as fertilizer. Ejidatarios tell us, smugly and self-righteously, that they make a practice of burning the manure and other trash tossed on the mounds. Actually corrals are not swept as often nor is accumulated trash burned as often as most informants optimistically report. But the fact remains that there is a sad waste of material that could be used to good advantage in agriculture.

The DCISP engineers recommend removing the present rubbish mounds. Since they are adjacent to cultivated plots which could receive the trash, they could be razed quite easily with a scraper. Such a move would improve the appearance of the village and reduce the fly hazard. Nevertheless, we suspect that the same mounds will grow anew or that others will replace them on the fringes of town. Without some sort of municipal provision for garbage disposal, the people have no choice but to accumulate trash in some spot not too distant from the settlement.

Quarters for livestock

For 56 of the 57 families of ejidatarios in El Cuije, we have a complete inventory of livestock. Of them, 2 have no animals whatsoever, while the others have a varied assortment, with poultry, rabbits, hogs, goats, horses, mules, donkeys, and cattle representing the full range. No family has the complete repertoire, but a few approach it.

In El Cuije, as in most rural societies in Mexico, animals play a very important cultural role, linked intimately with their economic implications. Ownership of livestock is a mark of solid economic achievement; as such, animals provide a certain prestige in the community and are a source of understandable satisfaction to the owner. More than this, they constitute a sort of insurance, for they are a backlog in case of emergency. Should a family need funds to meet a major crisis, animals always can be sold. Under the circumstances, we feel it would be a great mistake and one actually destructive of useful cultural values, if the ejidos or any other rural Mexican communities were persuaded to hold all livestock under communal ownership. Essentially, individual families would be deprived of a strong incentive to acquire animals, which at present give them a certain measure of economic security.

Accordingly, we recommend that the model home provide space, if not actually constructed quarters, for whatever livestock the ejidatario may be expected to acquire. As with the size of the model house, individual families do not have strictly parallel requirements. Inasmuch as the housing project is to be financed communally, with expenditures divided equally among ejidatarios, construction of quarters for livestock would involve unnecessary expense for the family which has no domestic animals. It seems preferable that the

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basic house be built without shelter for animals, but with space and adequate plans provided, so that those who need such additional facilities may build them at personal expense.

It is indisputable that isolation of animals from the family's living quarters should be a major objective of the housing project. Of our 57 families, 31 have the lot on which they live entirely enclosed by a fence of one sort or another, be it of adobe, wire, brush, or a combination of these. Yet only 23 have any effective way of separating animals from the house patio or, for that matter, from the house itself. Furthermore, a good many of the 23 do not avail themselves of the facilities at hand, and the livestock lives cheek by jowl with the family. Quite often, even with a corral for the animals, the latter do not wander at will within that enclosure, but are staked. Some families without fences to permit effective segregation manage to achieve a certain measure of isolation by staking animals at certain spots within the yard.

Various households have a special cormal for the livestock, but to reach it, the enimals pass through the main entrance and the corridor of the dwelling, knocking over flowerpots and otherwise harrassing the housewife. This transit is inconvenient, to put it mildly, but it also increases the tick hazard.

All these currently inconvenient and unsanitary arrangements may be eliminated in the model house by having all animals segregated in an enclosure at the rear of the lot, with direct access not only from the house patio but also from the side street; the latter entrance is entirely feasible, since there are to be but 4 lots to the block.

Local needs now may be studied in the light of present livestock holdings:

Poultry. Nine families have no fowl whatsoever; otherwise, barnyard fowl is distributed as follows:

	Total Tota	Meximum per fomily	Minimum Per family
Roosters, cocks	34	4	1
Hens	25/;	1,0	ī
Chicks	400.	27	ī
Turkey cocks	7	i	ī
Turkey hens	23	4	ī
Turkey chicks	6	3	ì
Ducks	6	4	ī
Guinea fowl	2	2	2

where the solution is $\partial e^{i\theta}$.

Chickens are overwhelmingly dominant, with turkeys very much in the minority; ducks (which happen to be of Muskovy type) and Guinea fowl are kept only as curiosities.

There are no chicken houses; as a rule, poultry sleeps in a convenient tree in the yard; against at some families lear a pole or post, with short crossbars, to familitate access. Setting hens (and turkeys) find haven in patios, corridors, kitchens, and even in bedroom. For them a shelter is prepared by standing two adobe bricks on their long sides, some distance apart; these serve as walls, on which a third adobe is rested horizontally, as roof. The opening in front may be closed by another brick or by a makeshift substitute, such as an old board.

We recommend that in the corral of the model house space be earmarked for a chicken yard to accommodate approximately 50 fowl; the walls of the enclosure should be high, for wing-clipping apparently is not practiced. Our impression is that no formal chicken house is needed for the small-scale poultry raising practiced in Cuije and that proper upkeep would be unlikely; perhaps roosting poles could be installed under a simple roof. As a matter of fact, we suspect that even with a well-defined poultry yard, Sowl will be let loose to wander and scavenger, especially in the kitchen. The more birds scavenger, the less formal feeding they require. As a consequence, the ejidatario considers it an economy to have fowl underfoot.

Rabbits. There is a total of 89 rabbits in El Cuije, divided among 8 families; two have a considerable number (24, 39 animals respectively); the others, 6 or less. Some families provide no special shelter; one has a wire pen; one, a low stone enclosure. Several have excavated in the yard a cylindrical shaft perhaps a meter deep; the rabbits remain in it most of the time, burrowing happily on all sides. Presumably the housing project should include plans for accommodating rabbits, for the families which are interested. But, frankly, under present circumstances, there is no reason to encourage rabbit raising unduly.

It has been remarked above that Guinea foul and Muscovy ducks are kept by a few as curiosities; rubbits in El Guije offer an even more notable example of non-economic animal husbandry. Of the 8 families, one declares to have eaten a rabbit upon a single occasion; otherwise, none has even tasted the meat, although all have heard that it is delicious and nutritious.

Some informants say comfortably that they plan to wait until the animals abound. The latter goal already has been attained in the household boasting 39 rabbits, which are underfoot all over the premises, including the kitchen and even the outdoor oven. Yet the owners cannot bear to kill them.

Actually, no great economic loss is represented, for the rabbits live chiefly on alfalfa, and gleanings after the communal cuttings are available to all families free of charge. Nevertheless, rabbits present a neat object

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lesson. If we were trying to improve local diet, which is notably deficient in high-quality protein, rabbits might suggest themselves as an ideal solution. But it is evident that to raise rabbits is one thing; to utilize them, another.

Hogs. Our inventory distinguishes between sizable hogs and suckling pigs. Twenty families have no hogs of any description; 31 have no moderate-sized ones; 29, no small ones. Otherwise, the distribution is thus:

	<u>Total</u> <u>animals</u>	Marimum per farily	Minimum ps: family
Hogs	39	3	ı
Hogs Sucklings	55	6	1

In view of the present situation, it would seem that quarters for 3 or 4 hogs would be ample.

Goats and sheep. There are no sheep in Cuije but there is a total of 51 goats, divided among 11 families. Knowr as carne chica, goat meat is about the only kind available in the ejido, but it is brought from elsewhere, and nowadays nobody in Cuije habitually slaughters for sale. Goats are unevenly distributed, for one family has 19, 6 being the herd next most numerous. Nevertheless, even in the case of the family with 19, goats simply represent a form of capital investment and are little exploited. We found no one in the ejido who claimed to drink goat milk; "we leave the milk for the progeny (cria)."

Goats receive little in the way of special shelter, and a roof in the corner of the corral, and therefore enclosed on two sides, seems to be quite adequate.

Riding and pack animals. Horses, mules, and donkeys are regarded as an emincutly safe investment and one which can be liquidated when the need arises. In keeping with the generally uneconomic aspect of animal husbandry in the ejido, we may note that one woman has owned a mule for 13 years; she loans it free of charge to the ejido, which feeds it and works it as if it were a communally-owned animal. Another owner has farmed out her mule free of charge to the ejido for the past several years. With these two exceptions, animals are stabled at home base.

Of our 56 families, 16 have no riding or pack animals. For the others, the situation may be summarized thus:

	<u>Total</u> animals	Maximum per family	Minimum p∋r femily
Horses (and mares)	34	2	1
Mules	4	1	1
Donkeys	20	2	1

Horses are most popular, the 34 being divided among 28 families; the 4 privately-owned mules belong each to a different family; and the 20 donkeys are distributed among 18 families. There is some overlap, but no household has a total of more than 3 riding and pack animals stabled at home.

Cattle. Cattle are far less common than are riding and pack animals. Forty-one families have no cattle of any description; among the others, animals are distributed thus:

	<u>Total</u> <u>animals</u>	Maximum per family	Minimum per family
Bulls	4	2	1
Cows	12	2	1
Calves	(11	1	1

Again there is overlap; only 2 families have more than 2 head of cattle, one having 3, another, 4. The latter case is, incidentally, the same thrifty $\underline{17}$ / family which far exceeds the others in its stock of goats.

17/ Although this family has no cash savings, it is well equipped on the score of domestic animals: 40 fowl; 2 hogs; 19 goats; 1 horse; 1 donkey; 2 bulls; 1 cow; 1 calf. Few families in El Cuije can approach these holdings.

Cattle are not well fed and milk production is notably low. Milk finds a ready market among those who have to cows. At most, cattle are housed in a simple roofed shelter.

Summary. The situation with respect to domestic animals in all Cuije has been outlined in some detail. The conclusion is that there is little uniformity and that needs vary widely from family to family. One household may have a goodly number of fowl and not much else; another may have one donkey, 2 head of cattle, and one hen. Clearly, the matter of shelter for animals cannot be solved broadside, but must be worked out individually.

We have tried to indicate what seem to be maximum requirements in view of present holdings. Accommodations for 50 fowl seem sufficient. Rabbits range from 2 to 39 per family and provision for them must be decided on an individual family basis. It is doubtful if any ejidatario will need shelter for more than 3 or 4 hogs and most will not need that much. Goats range from one to 19, which means we cannot generalize concerning requirements. With riding and pack animals, maximum needs seem to be space for 3

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such beasts; 4 head of cattle likewise would seem to be maximum.

Obviously, it would be poor economy to equip a model home with quarters for animals, and we recommend that plans be made available to individual families so that each may build accommodations in accordance with its needs.

Granary and oven

The standard granary of the ejido is an out-of-door structure known as a sencal. It consists of heavy uprights, usually tree trunks, which support an elevated floor of boards or canes, and sometimes a roof. A wall of cane or boards surrounds the floor, and into the bin thus formed, unshelled maize is dumped. In view of the crop failure the past few years, there is little need at present for a special granary and, indeed, few houses have one. Because the wood and cane come in handy as fuel, some families regularly tear down the granary once the maize is consumed; others use it as a deposit for pasture when there is no maize. It is impossible to guess during how many months of the year the granary ordinarily is used; 7 families declare that, when the harvest is good, it is needed "almost all year." Other estimates run from one to "8 or 9 months." Clearly the need for a granary varies greatly from year to year, and even from season to season, for there are two crops annually.

Three ejidatarios request a special adobe room with cement floor to function as granary; 6 more indicate they would like such a room, to serve as granary combined with tool, wood, or forage storage. But by far the majority (39 of the 50 families for which we have data) think in terms of the traditional granary, described above. A few indicate that they would prefer boards rather than cane to be used in its construction, but otherwise they request no change. Since need is neither uniform nor constant and since many families make shift without a special granary, we suspect we had best cling to the traditional type, leaving each ejidatario to construct his own.

Evidently we should leave a space, about 3 x 3 m. in the service patic for maize storage. Of our informants, 26 state flatly that this is the preferred location; others agree by implication (for example, "near the house," "near the kitchen," "near the bedroom"). One man wants his granary in full sun. Only 8 prefer that maize be stored in the corral, most feeling that in that location there might be danger from animals and, as well, from thieves.

Cotton is big business and the harvest is handled by the community; the individual ejidatario needs no storage space for it. The bulk of the wheat crop also is sold by the community without passing through private hands, although after each harvest a certain amount generally is distributed among the ejidatarios. The grain is stored in large metal drums, usually placed in one of the rooms of the house. Probably the drums could

be accommodated in the general utility storeroom described below, provided the family can bear to be separated from its modest hoard of wheat. A good many, to avoid theft, recommend storage in the bedroom.

In the yard of most households is a hemispherical oven of adobe brick, used chiefly for baking the wheat bread eaten in Holy Week. Commonly, during the balance of the year, the structure is allowed to disintegrate, to be repaired the following spring. Not infrequently, women or girls build and/or repair the oven; one ingeniously has constructed the oven in her kitchen, beneath the hearth, with the ventilating hole in the floor of the latter. By and large, the oven does not seem sufficiently permanent or its use sufficiently constant to warrant inclusion as an element of the model house.

Storage

The problem of storage requirements is one of the most difficult to see in proper perspective, for informants have widely variant ideas, not to mention widely variant needs. Maize production seems not to warrant a permanent granary, and we plan to rely on the traditional type, which each family builds, sometimes annually, according to its current needs (p. 36). As a consequence, remaining storage problems are focused on fodder; wood and other fuel; and tools. Below, these three categories are discussed one by one; in a concluding section, we attempt to draw conclusions concerning storage facilities adequate for all three.

Fodder. A large variety of plant stuff is used as forage, but with most of it we need not concern ourselves. Cornstalks are bulky and may last from a few weeks to most of the year, dependent upon the harvest and the livestock owned by a given family. Most ejidatarios prefer not to store cornstalks on the premises because of fire hazard. Since such fodder is plentiful it is not subject to theft, and a good many leave their supply along the ditch north of town; others, along the edge of the dry river bed. A few would like to provide space in the house corral, but most vote against such an arrangement, and we feel their outlook practical.

Nor do we have to worry about green grass used as fodder, for this is cut daily or, at most, every other day. In short, there never is a major surplus to be stored.

Alfalfa is a different matter. The large plantings are communal and, after a cutting, individuals are allowed to glean what they need for personal use. Generally they gather the alfalfa in one of the outsize canvas bags, ordinarily used for harvesting cotton. Some collect every few days, every week, or every fortnight, as opportunity permits;

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others, every month or every two months. Alfalfa is stored on the premises and, despite the several variable factors, we must try to allow adequate space for it.

Mesquite pods also are collected in season, as forage, and are stored in metal drums; a 200-liter drum probably would accommodate the season's maximum haul for any family.

Wood and other fuel. A good many families collect wood daily; some gather sufficient to last 2 or 3 days, or more. When possible, a dead trunk is dragged to home base and left adjacent to the house, providing fuel for weeks, or even months. When the supply is on small scale, the wood and brush simply are dumped on the kitchen floor; otherwise, they are strewn in the yard or, in the case of large trunks, in the "street" in front of the house.

During several months of the year, cotton stalks and roots are used extensively as fuel, although this practice is condemned bitterly by agricultural experts, who recommend wholesale burning at the end of the season, in order to cut the life cycle of cotton pests. Cotton waste requires considerable storage space, informants calculating from 4 to 54 cubic meters (sic). Because of agricultural considerations, it is highly desirable that the ejidatario restrain from using this fuel, and we feel we should not provide storage space for it in any model house.

Fuel oil presents little in the way of storage problems. Most families buy in small quantities, when needed, and seldom have a surplus of more than 5 to 10 liters on hand. This modest amount is kept in the kitchen. However, one man buys his fuel oil in 50-liter lots; another stores his in a 200-liter drum. A third admires the 200-liter reserve and would buy thus, if funds permitted.

Tools. The ejidatario does not have a great many tools to store. All large agricultural machinery is community property and is housed in the corralón (p.10). Almost every able-bodied man has a shovel, a hoe, and an alfanje; about half the families boast an axe or hatchet. None of these presents the slightest difficulty with respect to storage; all, in fact, could hang on a wall, without requiring more space. Other odd tools, such as machetes and cuchillas (both cutlass-type tools), sickles, picks, forks, and crowbars are not very plentiful and present little bulk.

In fact, the only space-consuming tools are the occasional cultivators, plows, and a few other implements (cuchilla plana, chuso), which present about the same bulk as does the plow. If these items are pooled, a total of 16 families have at least one bulky implement to store; and if we add wheelbarrows, the total grows by 4. In other words, nearly half the families have one or more items of considerable size to be considered in

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planning storage facilities. And practically all boast one or more metal drums, used for diverse purposes.

At present, storage is a pretty hit or miss matter. The larger items just listed stand unprotected in the yard or, at most, under a simple roofed shelter. A few families (4) have a room used chiefly for storage; some keep tools in the bedrocm (8) 18/, in the kitchen (5),

18/ Sometimes beneath the bed; sometimes stood behind the head of the bed, so that they will be beyond the reach of small children.

or in the corridor (1). But most have them strewn haphazardly over the entire premises, including both house and yard.

Conclusions. It is evident that we must allow considerable flexibility in storage space, and final conclusions depend pretty much on what is worked out with the engineers, when storage needs and accommodations for domestic animals are considered jointly.

Some informants make no specific recommendations with respect to storage. Others indicate their needs in no uncertain terms, but often their space calculations are not of much assistance. Some have no animals and have no need for alfalfa. But those who do store alfalfa estimate their needs anywhere from 1 to 144 cubic meters.

Some (24) think in terms of a single storeroom which will suffice for everything; others (16) want two separate rooms. Some (5) suggest that forage and tools be kept in a single room, with a second room for fuel. Others (3) suggest one room for fodder, another for fuel and tools; still others (2) recommend one room for fodder and fuel, with a second for tools. Six informants think in terms of separate rooms for fodder and for fuel, without mentioning disposition of tools. And others (7) would have a single room for fodder and tools, without special provision for fuel. There are further suggestions, less frequent, which just about exhaust the full range of possibilities.

Our tentative solution would be a single storeroom, approximately 3 x 5 m., with doors in the center of both short walls. This would allow about a meter down the center for passage, with a meter the full length of each long wall, for storage. One side would have ample space for fodder, while the opposite side could be devoted to tools. A family which had little fodder or no bulky tools probably could accommodate the fuel supply in the storehouse. But in addition, we should expect to have some sort of roofed shelter adjacent, for general utility and for any storage overflow. In this, wood and even tools would have adequate protection.

We feel that the suggested room, plus the roofed shelter, should be sufficient for the needs of all but a very few of the families. No matter how much storage space is provided, there is no guarantee that it will be used as planned. Nevertheless, our impression is that the disorder which characterizes the premises of many households results largely from the fact that storage facilities are inadequate and haphazard. It may be hoped that the storage space provided may, in time, result in considerable improvement in tidiness.

SUMMARY

In the present report, housing conditions in the ejido of El Cuije have been inspected, and various recommendations have been discussed. A conscious effort has been made to have the suggested model house sufficiently similar to the traditional one, so that people may feel at home in it. The expressed desires of the ejidatarios themselves have been considered carefully; special attention has been given the problem of having the new house as livable and hygienic as possible; and the need for drastic economy has been kept constantly in view. We feel that the recommendations are practical and that the resulting house, designed expressly to fit local environment and local culture, should bring major improvement in living conditions. Above all, and not of least importance, we feel that it will be entirely acceptable to the ejidatario.

Briefly, our recommendations are summarized below; headings agree with the entries in the index.

Orientation. Southeastern exposure preferable.

Size of lots. 20 x 30 m., with 4 lots to a block.

Architectural style. Traditional rather than modern; barred windows, by request of ejidatarios. House to be situated on walled lot. Narrow front patio planted to garden. In rear of house, service patio; beyond, well separated by wall, corral for animals.

Walls. Of adobe brick on stone foundations; walls plastered and lime-washed. Terminal course of burned brick, for the sake of durability.

Roof. Of traditional construction; beams, transverse planks, with everlay of mud and mortar. Beams of present houses to be utilized in new ones, in so far as practical.

Floor. Of cement, with wide cement baseboard to permit washing without damage to walls.

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Doors, windows. Doorways and window openings edged with burned brick. Doors preferably new.

Large windows to south and east; small ones elsewhere. New frames, possibly of metal, with glass. Because of wind and dust storms, doors and windows must close tightly.

Ventilation and lighting. Cross ventilation essential, but with provision for closing during cold weather. Ceiling height ca. 3 m., by request of ejidatarios. Fly and mosquito control to be discussed further with DCISP engineers.

Lighting demands moderate. Most of close work done by women, by day, in open corridor. Community permits maximum of 2 electric light bulbs per ejidatario. One to be in kitchen-dining room; other, in living room-bedroom, with some sort of extension provided for corridor.

Size of house. Minimum unit: kitchen-dining room combined; living room-bedroom; open corridor or breezeway. In addition, sanitary facilities; provision for domestic animals and general storage. Rooms of house to be so arranged that further bedroom may be added, according to needs of individual families.

Size of rooms. Kitchen-dining room and living room-bedroom each 4 x 5 m., as absolute minimum; preferably both somewhat larger. Open corridor has less exacting requirements.

Kitchen planning. Kitchen commodious, well-lighted, with cross ventilation and fly control. Smooth walls; areas adjagent to hearth and work counters faced with cement or cement tile. Counters and hearth recessed at floor level, to provide toe space.

Traditional hearth with hood indispensable; space to be allowed for oil stove. Work counters either side of hearth, with storage facilities below. See main text for details.

Sanitary facilities. Available water limited. One faucet per house, situated in yard, near kitchen, laundry, shower. Distribution. by hose.

Bathing facilities: shower, with cement floor; small metal tank on roof, to be heated by solar action.

Laundry: cement tray on stand in yard, near water supply; covered by simple roof. Height of tray floor at proximal end, 70 cm.

Privy: preferable to flush toilet. Recommendation that school toilets be modernized, so that children learn use of such facilities.

Drainage: to be discussed with engineers. Simple absorption pit near laundry, shower, kitchen, may be adequate, thus eliminating expense of municipal drainage system.

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Garbage disposal: another point to be discussed with the engineers. Rubbish mounds on edge of village presumably to be razed, but satisfactory substitute must be provided, or dumps will grow anew.

Quarters for <u>livestock</u>. Corral separated by wall from service patio to permit segregation of animals from living quarters; furthermore, corral to have entrance from side street.

Livestock holdings vary widely. Accommodations for following probably represent maximum needs: 50 fowl; 3-4 hogs; 3 riding and/or pack animals; 4 head of cattle. Rabbits, goats too variable to permit generalization. Recommendation: that plans be prepared and made available to individual householders, so the latter may build quarters to meet needs, at own expense.

Granary and oven. Most ejidatarios prefer traditional granary, a temporary structure, often dismantled for use as fuel. Recommendation: that a 3 x 3 m. space be left in service patio for granary, each ejidatario to build his own, according to individual needs.

Oven in yard likewise to be left to responsibility of individual house-holder.

Storage. Needs not uniform. Recommendation: a single, general-utility storeroom, 3 x 5 m., with doors in centur of both short walls, to allow gallery storage a meter deep on either side of central passage. Further recommendation: a roofed shelter adjacent to storeroom.

In collaboration with DCISP engineers, we hope shortly to prepare concrete plans to fit the general outline presented herein. Thus, although agricultural adversity may make necessary the postponement of the housing program for some years, plans and specifications will be in readiness for the time the ejidatario of the Laguna is in a position to invest in a new house.

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