

CHAPTER X.

NATURAL CALAMITIES.

FLOODS.

In the last District Gazetteer of Gaya, published in 1906, L.S.S. O'Malley observed in the chapter on Natural Calamities that "in common with other Bihar districts, Gaya is liable to suffer from scarcity, when the rainfall is deficient or untimely, and from floods, when it is excessive. The effects of anything but a very serious failure of the monsoon are, however, counteracted by a wonderful system of irrigation, and, though there has been scarcity in some tracts, the present generation has not known the protracted agony of a widespread famine. The people are also practically immune from the disaster of great inundations. The rivers, being for the most part hill-torrents, rise rapidly in flood after heavy rainfall, but their beds are so wide and the drainage slope so rapid that, even when they burst down in flood, they rarely overflow their banks, and, as they fall almost as fast as they rise, inundations are of short duration and cause but little damage.

"Local floods are occasionally caused, by the rivers breaching their banks owing to abnormally heavy rain in the hills, and also when a river leaves its old course and appropriates the channel of a *pain* or artificial irrigation canal. More serious floods are fortunately rare. Writing in 1877, Sir William Hunter said that there had been only one considerable flood within the memory of that generation—and this had occurred 37 years previously—but the water remained stationary for one day only, and the flood subsided in 9 or 10 hours. In more recent times the district has been equally free from inundation, and the only floods which call for notice are those which took place in 1896, 1901 and 1905."

Some of the recent floods and periods of scarcity, however, go to show that some of O'Malley's observations about 50 years back do not hold quite good. The heavy floods in the district of Gaya in 1946 and 1948 and the comparatively widespread scarcity from 1949 to 1953 show that the district of Gaya is not immune from the serious failure of the monsoon and from the disaster of great inundations.

It would be pertinent here to quote the resolution passed by the Flood Advisory Committee of the district in a meeting held at Gaya on the 26th March, 1949 :—"The Committee is of opinion that the fundamental reason for recurrence of floods was the deterioration of the irrigational system in the district. The ground was slopy and the rivers ran more or less in a parallel line to the north. The earth was incapable of absorbing water. The existing irrigational arrangements which have been of the nature of a chess board, strewn over the whole district and were intended to impede untrammelled flow of water, have gone

into dis-repair. It was, therefore, necessary that a five-year plan for the systematic repair of irrigation works in the district be chalked out and implemented after a list of all old works situated in nearby villages had been compiled, and for taming a number of rivers, susceptible of causing floods, and of cutting new channels from them."

Several schemes have been taken up in the district which are more of the nature of diversion work for proper irrigation. Schemes are also being prepared for reservoir at the foot of the Chotanagpur Hills, which when completed will go a long way in lessening the damage due to floods.

The last District Gazetteer of Gaya gives description of floods that took place in 1896, 1901 and 1905. Since major floods had occurred in 1946 and 1948, it is worthwhile quoting in extenso from the last District Gazetteer the descriptions of floods of these three years, 1896, 1901 and 1905. Regarding the flood of 1896 it was mentioned thus:—

" The most disastrous flood which has occurred within the memory of the present inhabitants of Gaya is that which visited the eastern portion of the Nawada subdivision on the 16th September, 1896. For two days there had been exceptionally heavy rain, which filled up all the water courses and reservoirs, and at mid-day the river Sakri, which takes its rise in the hills to the south-east, came down in flood, sweeping cattle, houses and trees before it, and covering the country for miles round with a sheet of water some two to twelve feet deep. There was but little loss of life, as the inundation was of short duration, and the people were forewarned of its approach; and only 34 persons were drowned in the Gobindpur outpost, and 15 in the Kauwakol outpost, where the Natah and Baghail streams rose in flood. The damage to property was, however, very great, over 2,000 houses being completely demolished or seriously damaged, and large numbers were left homeless. The village of Gobindpur suffered especially severely, as out of 540 houses only 40 were left standing, and the houseless people had to take shelter in three masonry houses which escaped and in the office of the police outpost. The latter had been removed from another site 20 years previously, in order that it might be beyond the reach of floods, but the site to which it had been transferred proved equally unsafe, as the office was the only portion of the buildings which remained uninjured. Many of the roads were breached, and long stretches, especially on the Nawada-Pakribarawan Road, were swept away. The damage done to cultivation was scarcely less serious. The mouths of several *pains* were silted up, many *ahars* and other reservoirs were damaged or destroyed, and large areas were filled with sand, the crops being destroyed and the land rendered unculturable. The damage caused in this way was especially great in Dariyapur. In South Dariyapur only 12 out of 125 houses were left standing; and in the northern portion of the village some 50 houses were demolished, and the seventy houses which were left standing were all more or less damaged. Of the total cultivated

area of 1,600 *bighas*, about 700 *bighas* were filled up with sand, and in place of a *pain*, which used to be only 18 cubits broad, the Sakri threw off three wide branches extending over an area of one-sixth of a mile. In all nearly 100 villages were affected, and the total loss of property was very great."

The flood of 1901 was due to a simultaneous rise of both the Son and the Ganges. It was mentioned :

" On the 1st September the level of the Son at the Koelwar bridge was only 9 feet, but by the morning of the 3rd *idem* it had reached the height of 17.6 feet; and the river continuing to rise throughout the night and all through the next day, the gauge showed the unprecedented flood-level of 22 feet by 2 A.M. on the 5th September. At the same time owing to a high Himalayan flood, the Ganges was rising abnormally high, and on the morning of the 5th September the flood-level of that river also was higher than any previously recorded, the gauge at Digha reading 35.10 feet in the early morning and 35.60 at mid-day. The Son being thus unable to discharge the volume of its waters into the Ganges, forced its way over its western bank and poured over the low-lying lands towards Arwal.

"The flood rapidly subsided, and to this must be attributed the small amount of damage done. No loss of life occurred, and the number of cattle drowned was inconsiderable. House property, however, suffered seriously and some 520 houses were wrecked in the Arwal thana. The damage to the crops was inappreciable, and the only serious loss was that of the houses and of the grain stored in them, which deprived their owners of their means of livelihood. In the event, it was found only necessary to relieve some of the poorer classes whose houses and stocks of grain had been swept away, and for this purpose a grant of Rs. 1,000 was given by Government and Rs. 600 was raised by public subscription."

There was exceptionally heavy rainfall throughout Gaya district on the 14th, 15th and 16th September of 1905. Rainfall was particularly very heavy in the southern portion of the Aurangabad subdivision and at Jahanabad, the fall ranging from 11 inches at the latter place to 16½ inches at Nabinagar, led to the flood of 1905. About this flood O'Malley mentions :

" Owing to this excessive precipitation, the rivers Punpun, Dardha and Jamuna rose to a great height and soon began to overflow their banks and flood the country. The drainage slope being from south to north, the water was held up by the two main embankments running east and west, viz., the Mughalsarai-Gaya Railway line and the Arwal-Jahanabad Road. The water rose to a considerable height on the southern side of these embankments on the 16th September, and the waterway provided proving insufficient, they both gave way. The railway line was breached in several places near Jakhim; and though the

bridges on the Arwal-Jahanabad road fortunately stood, long lengths of the road were swept away. The Grand Trunk Road was also breached in two places, and many minor roads suffered severely. At Jahanabad the Court compound was under water to the depth of about a foot, and this too at a distance of over 200 yards from the ordinary bed of the river. The flood was of short duration: indeed in one place it was seen to rise 3 feet and again go down 2 feet within 10 hours on the 16th. It had entirely subsided in the Aurangabad subdivision by the morning of the 17th, though it went down somewhat more slowly in the Jahanabad subdivision.

"As in the flood of 1901, little serious damage was caused by the inundation. The people had time to escape to the high lands near their homes, and 7 persons only were killed by being buried under falling houses. Many *ahars* were breached, but the crops were on the whole benefited owing to the fertilizing silt deposited by the receding water. But few cattle were drowned, and the only loss sustained by the people was the destruction of their houses, which were washed down in large numbers."

There was another flood in the month of August in 1917 but the ravages were not widespread.

Since the inundation of 1917 the district was more or less free from flood till 1946. On the 17th September in 1946 the river Phalgu breached its bank and at about mid-night a part of the town of Gaya was submerged under 2 feet to 3 feet of water. Not only the low-lying areas near about the river but important sections of the town at a higher level were also affected. Flood water had entered into the rooms of the Collectorate buildings. The Record Room and the Treasury could be saved with great efforts. A number of houses in *mahallas* Andar Gaya, Kerani Ghat, Manpur, Buniadganj and houses standing on either side of the river had collapsed or were damaged. A number of the main thoroughfares, specially the roads to Khijir Sarai and to Bodh Gaya, running parallel to the river Phalgu were breached at many places. Water receded in the evening of the 18th September and left behind a thick layer of mud all over the town. Unfortunately at this time the famous *pitripaksha mela* was on and thousands of pilgrims from different parts of India had come. Several pilgrims lost their lives owing to the sudden floods. Adequate relief measures were taken and loans or outright grants were made to rehabilitate the affected families.

The 1946 floods had also affected the rural areas. Three thanas of Aurangabad subdivision, namely, RafiGUNj, Obra and Goh were badly affected. The people of RafiGUNj police-station including the population of RafiGUNj township were much affected. There was free distribution of grains and fodder followed by loans of different types.

The flood of 1946 was followed by a heavy flood in 1948 due to excessive rainfall. There was an unprecedented rainfall from the 1st to the 4th of August, practically, throughout the district and all the

rivers and streams swelled. There was a total rainfall of $11\frac{1}{2}$ inches during these few days in Gaya town. The rivers began to rise from the 4th of August and on the 5th of August spill water affected the different parts of the district, and in some parts the flood had assumed a menacing shape. Luckily by the evening of the 5th August the floods subsided.

Gaya town was affected like 1946 flood. There were several breaches in the roads both in the town and also in some of the roads connecting the different thanas. There was a dangerous accumulation of water in *mohalla* Bairagi and a railway culvert had to be widened and a canal cut across a field to let out the water. The small town of Tekari was partially under water.

Aurangabad subdivision was particularly affected and was under the grip of flood from the 5th to the 7th of August. The floods in Aurangabad subdivision were caused by the rivers Poonpoo and Batane. Several roads in the subdivision were particularly affected. The Obra-Daudnagar Road from 11 mile-stone to $12\frac{1}{2}$ mile-stone was heavily damaged, and there was a complete suspension of vehicular traffic for three days. The Grand Trunk Road near the Poonpoo bridge had been breached. One cause-way near Madanpur was under 6 feet of water. The eastern portion of Aurangabad town was partially submerged. The villages round Pamargunj Railway station were flooded. Rafiganj suffered badly as in the year 1946 and was practically cut off from Aurangabad for several days. Standing crops of a large area were damaged.

Nawada subdivision was also very badly affected due to the high flood in the rivers Bhuri, Sote, Dhangain and Panchanan. Hasua town was under water. At one stage there was several feet of water flowing over Nawada-Gaya Road. The Station Road at Nawada was breached owing to heavy inundation. Crops of a large area were damaged.

In the Jahanabad subdivision the rivers Morhar, Lilajan (Phalgu) rose first and then rivers Durdha and Jamunaeye. In this subdivision the floods had abated in the mid-night of the 5th August but the rivers again rose in the night of the 6th August.

Jahanabad town had a full taste of the effects of floods. The flood water had rushed in the Court compound and the doors of the Record Room were barricaded by the construction of cement wall to save the papers. The sub-jail was also badly affected and had to be saved by barricading the main site and closing the drains nearby. It is admitted that the standing crops of about 10 thousand *bighas* were damaged.

The number of villages affected in the district were as follows :—

Sadar subdivision	...	...	99
Jahanabad subdivision	...	...	319
Nawada subdivision	...	...	97
Aurangabad subdivision	...	...	351

The total number of houses damaged in the district were calculated as follows :—

Sadar subdivision	...	...	579
Jahanabad subdivision	...	...	820
Nawada subdivision	...	...	2,552
Aurangabad subdivision	...	...	1,318

The number of persons rendered homeless was 204.

The floods of 1948 not only damaged the *bhadai* crops and the seedlings but left a deposit of sand in various areas. The cultivators had to remove the sand before they could plough.

Regarding the relief measures it may be mentioned that certain precautionary steps that had been taken were extremely helpful. Relief Committees had been organised from before. A number of boats and rice, gram, maize and salt had been deployed from before. There was also an arrangement for the supply of kerosene oil and matches.

Relief measures taken included free distribution of foodgrains, kerosene oil, salt and matches. Besides immediate relief measures to the affected population, they were also rehabilitated by the grant of following sums :—

Name of subdivision.		House building.			Flood relief.		
		Rs. a. p.			Rs. a. p.		
Sadar	...	7,725	0	0	1,488	3	3
Aurangabad	...	28,870	0	0	36,000	0	0
Jahanabad	...	10,000	0	0	6,000	0	0
Nawada	...	21,500	0	0	12,375	0	0

EARTHQUAKE.

Earthquake is not a common phenomenon in Gaya district. There is no record of any earthquake either major or minor before the great Bihar Earthquake of 1934. Along with other parts of Bihar the district of Gaya also felt the effects of a very serious earthquake at about 2-30 P.M. on the 15th January, 1934. This earthquake was widespread in different parts of India. The shock lasted for about 2 to 2½ minutes. Some people, however, felt the quake lasting for about five minutes. It was accompanied by a loud rumbling noise.

Gaya, however, suffered comparatively less than the neighbouring districts of Patna and Monghyr. As a result of the earthquake roads were fissured and houses were damaged. There was a casualty of 34 deaths and injuries of various nature to 83 persons in the district. The number of deaths in Sadar subdivision was 9 and in Aurangabad Nawada and Jahanabad the number of deaths were 3, 13, and 9, respectively. A large number of houses cracked and some had to be demolished. The Collector's house and the central jail of Gaya were

damaged and 400 prisoners had to be transferred in order to avoid congestions and over-crowding due to the dilapidated condition of as many as eight wards of the central jail. A large number of *kutch* houses in Gaya town collapsed. The *mahallas* particularly affected were Gawal Bigha, Uper Dih, Panch Mahalla and New Godown. The ancient Bodh Gaya temple and Vishnupad temple, however, were not damaged badly. Some small antique images in the *Bodh Gaya* temple had been dislodged from their setting. The *Kailashi* top of the Bodh Gaya temple had been dislodged. It is remarkable how the very badly congested area of Ander Gaya in Gaya town escaped with light damages. Most of the houses in this area are ancient and any major damages to these houses would have entailed heavy casualty.

At Jahanabad a number of houses including some official quarters and the old dak bungalow and the Edward Memorial Hall were badly damaged.

At Nawada almost all the *pucca* buildings of the town developed cracks and a number of *kutch* houses had fallen down. Similar were the effects of the earthquake in Aurangabad subdivision.

The number of cattle killed was 58. The number of buildings destroyed in the district was 4,673. The number of houses destroyed in the town of Gaya within the municipal area was 710. It has been calculated that the number of houses damaged in the district came to 20,164.

Adequate relief measures were quickly taken. For immediate relief foodgrains, cloth and blankets were distributed and many tents and sheds were provided to offer a temporary shelter to the affected people. The hospitals coped with the situation and were instrumental in keeping down the incidence of casualty at a low level. House building grants and other monetary aids were provided.

FAMINES.

As O'Malley observed, the district of Gaya was comparatively immune from floods and he also considered the district practically safe from famines. There were, however, periods of anxiety and scarcity in the years 1866 and 1874. According to O'Malley, in 1866 there was great suffering in the outlying parts to the south and south-west, but the more fertile portions of the district were not seriously affected in spite of the failure of the rains, and during the period of the greatest distress the average daily number of persons receiving relief was only 1,167. As compared to this in the famine of 1874 the largest number of persons on relief works was 2,756 and the average number gratuitously relieved for $7\frac{1}{2}$ months was only 977.

O'Malley's appreciation of the conditions of Gaya district has been belied to a very great extent in the recent years, viz., 1948, and 1950-52. As, however, the conditions have altered and the district has suffered rather severely from periods of scarcity it is better to quote in

extenso from the old District Gazetteer regarding the famines of 1866, 1873-74, 1888-89 and 1896-97. These paragraphs are :—

✓ “ The district suffered severely during the famine of 1866, but no standard exists by which to gauge the actual pressure. The Collector reported that the price of common cleaned rice rose to Rs. 6-10-8 a maund, but prices in this district are an uncertain index to the pressure of want. Market rates apply only to a small fraction of the population and in a time of scarcity when people are unwilling to sell, they indicate far greater hardship than really exists. The distress was most severe in the vicinity of Gaya town, and to the south-west and south of the district within the Aurangabad and headquarters subdivisions, the distressed tract extending over an area of 1,300 square miles. The rice crop, in the greater part of this area, may be said to have failed completely in 1864; and from that time prices rose considerably and general distress began to be felt. The *rabi* or spring crops of 1865 were also much below the average, as the area under those crops was much contracted owing to want of sufficient moisture in the ground and the difficulty experienced in obtaining seed, while the outturn was still further diminished by heavy hailstorms in the spring of 1865. From these causes the distress became so acute that in May and June the poorer classes were reduced to living upon the seeds of the *mahua* tree, berries, grass and herbs. This extreme destitution abated on the setting in of the rains, prices fell, and as field labour was obtainable, special relief measures were not deemed necessary. The condition of the people, however, did not improve and the general distress reached its climax in October, 1865, when only 7 seers of rice could be purchased for the rupee. The Collector commenced a daily distribution of grain, subscriptions were raised to defray the cost of maintaining the starving people and a daily average of about 1,000 persons were fed at Gaya town from the 12th October to the 17th December. In the latter month, when the rice harvest afforded means of employment, and the market again fell, relief was suspended. But there was a renewal of the distress in March, 1866. Severe hailstorms and a heavy rainfall in February, with the premature arrival of the hot winds, caused much injury to the spring crops. The stocks in the hands of dealers became exhausted, and the local supplies were mainly dependent on importations from Patna, the land-owners, who are large holders of grain under the *bhaoli* system, withholding their stocks from the market, in the expectation of still greater scarcity. Still no special measures were adopted till June, when relief centres were opened at Gaya town, and at Sherghati, Nawada and Aurangabad; subsequently in August and September, additional centres were established at Konch and Fatehpur.

“ The sufferings of the starving people were still further aggravated by cholera, which made its appearance in the town of Gaya, about the middle of July, and thence spread over the interior of the district; the severe character of the outbreak is sufficiently illustrated by the fact

that out of 927 pauper recipients of relief admitted to the Gaya hospital between June and November, 1866, 447 died within an average period of two days after admission. During the period of the greatest distress, the average daily number of persons receiving relief ranged from 1,167 in the beginning of July to 934 in the first week of September. The mortality reported by the police, who probably underrated the actual loss of life, established the fact of 3,387 persons having died, or more than double the number of those relieved. This lamentable disproportion can only be attributed to the fact that the relief depots were practically inaccessible owing to their distance from the mass of the starving population.

" The course of events in Gaya during 1873 strikingly demonstrated the principle that the seasonable distribution of the rainfall is of more importance, within certain limits, than its actual quantity. The fall was below the average only in the headquarters and Aurangabad subdivisions, and in each of these tracts the deficiency was not more than 4 inches. Judging of the harvests from the quantity of rain which fell in 1873, it is difficult to believe that there could have been an extensive failure of the crops in Gaya in that year. Only 3 inches of rain fell in the first six months of the year, and even June, which is ordinarily classed as a portion of the monsoon period, was almost rainless; but in July there was an excessive precipitation amounting to double that of average years and varying from 20 inches in the west to 27 inches in the east of the district. In August the fall was slightly under the normal, but still it was sufficient to maintain the inundations caused in the preceding month. The autumn crops were seriously injured and many reservoirs, on which the winter rice depends in dry years, were burst. The September rains, which are perhaps the most important for these crops, were, however, markedly deficient, the consequence being a failure of varying degrees of intensity in different portions of the district. It is difficult to gather from the official reports and narratives a distinct idea of the outturn of the autumn crops but it was probably not less than half of an average crop. The reports on the winter rice crop which, in the end of 1873, were very gloomy, assumed, as the harvest progressed, a much more hopeful tone, and in February, 1874, when it had been gathered on the threshing floors, the outturn all over the district was estimated to have been the three-eighths of an average crop, the yield in parts of Aurangabad and Nawada subdivisions being even characterized as particularly fine. Towards March the district was providentially favoured with an abundant fall of rain which, combined with the judicious utilization of the canal water in the west of the district, secured to it an average spring food-crop and a good outturn of opium. The price of rice did not rise above 10 seers to the rupee, from June to August 12 seers were obtainable and it was much cheaper later on.

" Private trade was active throughout the year, and one of the chief causes of the distress in 1866, viz., the impassable condition of

the Patna and Gaya Road, no longer existed to hinder the transport of grain. Government grain, however, was stored throughout the district, relief works were instituted and a comparatively small number of the poorest classes were charitably relieved. But these measures were simply precautionary. In charitable relief 220 tons of rice were distributed, 2,433 tons sold for cash, 85 tons advanced on loan, and 117 tons paid in wages. In all Rs. 11,522 were distributed in charitable relief, Rs. 40,648 paid as wages and Rs. 40,503 advanced on recoverable loans. The daily average number of persons charitably relieved in the whole district rose from 480 in the beginning of May to 2,120 in the beginning of August, and fell in the beginning of October to 542. There were 454 labourers employed on relief works in February; 1,334 in April; 2,756 in June, and 377 in August.

" The irregularity of the monsoon of 1888 marked by a late commencement and early cessation, together with excessive rainfall in August, resulted in the partial destruction of the autumn rice crop and in the diminution through drought of the yield of the winter harvest. The total rainfall was plentiful, amounting to 55.78 inches, but it was very unevenly distributed, being enormously excessive in August, when over $7\frac{1}{2}$ inches fell in one day, and far below the requirements of September and October. Eventually, the outturn of both the *bhadoi* and *rabi* crops was under 40 per cent and that of the *aghani* crop only 50 per cent of a normal crop. Scarcity ensued, but, there was not much distress, except in a tract near Sherghati. Some relief works were started, but the expenditure only amounted to Rs. 4,300, the largest average daily attendance being 4,500 in June.

" The history of the famine of 1896-97 showed clearly how great is the protection secured to Gaya by the system of *pains* and *ahars* in a year of unequally distributed rainfall. The rains of 1896-97 began late, not commencing till late in June, when there was a heavy fall amounting to $8\frac{1}{2}$ inches. There was another downpour of $10\frac{1}{2}$ inches early in July, and then a long drought succeeded, which was followed by nearly 11 inches of rain in August. Another long break next ensued till the middle of September, when the rainfall was nearly 4 inches. After this there was no more rain, and by the end of October the deficiency was $7\frac{1}{2}$ inches or 17.8 per cent. The season was thus characterized by heavy falls alternating with long periods of drought which would have resulted in scarcity elsewhere, as the *bhadoi* would have withered, the seed-beds of rice dried up, and the rice-fields remained unplanted. In Gaya, however, the evil effects of these vagaries of the rainfall were counteracted by the system of irrigation by which the water is conserved in reservoirs and thence distributed over the fields, for, as each burst of rain occurred, the water was carefully stored and used as required. In the event, the outturn of *aghani*, which is the most important crop in the district, was 50 per cent and that of *bhadoi* 75 per cent of a normal crop, while the *rabi* crop was nearly up to the average. Prices here as

elsewhere ruled very high, rising to 8.4 seers to the rupee at the end of October, 1896, but considerable stocks were held by the cultivators. Exportation was stopped, and the reserve stores of grain which the people keep were everywhere held up, partly for consumption and partly for sale when prices rose still higher. Work was plentiful in the fields, and as this is always paid chiefly in grain, the labourer did not feel the high prices any more than the agriculturists who lived on their own stocks; while there was plenty of additional employment on the Mughalsarai-Gaya and South Bihar Railway lines, which were then under construction. Grave apprehensions were entertained at one time for some tracts, viz., the northern part of the Jahanabad subdivision, the portion of the Sherghati thana south of the Grand Trunk Road, and a tract in the north-east of the Aurangabad subdivision between Aurangabad and Goh. In these tracts the people were not so well off as elsewhere, because the rainfall was more scanty; and the system of reservoirs being incomplete, there had been a more or less complete failure of the *aghani* crop. Eventually, however, even these tracts did not suffer, the *rabi* crop being far better than had been expected; and, as in 1873-74 the stocks of the people enabled them to maintain themselves until the *rabi* was reaped, and again till the *bhadoi* harvest came in. The district, in fact, passed scatheless through the famine, no relief being required except what was given in kitchens and poor-houses along the Grand Trunk Road to pilgrims and travellers, and, late in 1897, to beggars and paupers in the town of Gaya. The only expenditure incurred by Government was in the shape of advances to landlords and tenants, Rs. 1,06,000 being given out under the Land Improvement Loans Act, and Rs. 23,600 under the Agriculturists' Loans Act. The expenditure on gratuitous relief was met out of charitable funds, Rs. 9,900 being spent in the distribution of grain and money, while the maintenance of kitchens cost Rs. 7,700. In this way about 50,000 persons were relieved, but, as already stated, only 1,000 of these were natives of the district."

The above quotation will show the great confidence of O'Malley in the degree of protection afforded to the district of Gaya by the system of *pains* and *ahars* to meet an emergency of unequally distributed rainfall. Recent years, however, indicate that even with the system of *pains* and *ahars*, the district has suffered badly from scarcity for an unequal distribution of rain.

✓ Scarcity was apprehended next in a limited area in the west and south of the Aurangabad subdivision in 1902, although, on the whole the district had been "entirely free from famine or scarcity of any kind" as observed by O'Malley. This apprehension was, however, due to bad harvest in the two preceding years. O'Malley observes: "This tract is unfertile, the soil is poor, and there is practically no irrigation, so that the crops are scanty at the best of times. There had been bad harvests in the two preceding years, the last rice crop had been almost a

complete failure owing to a failure of the rains, and the outlook for the *rabi* crop was very poor. The ordinary cold-weather rains however fortunately fell, and this crop turned out a fair one; the population is scanty and inured to bad harvests and hard living; and labour being available in the neighbouring areas of greater prosperity, as well as on works specially opened by the District Board in the tract affected, the people were enabled to hold out, and there was but little real distress."

The last paragraph of the chapter on Natural Calamities in the old District Gazetteer of O'Malley is reproduced below :—

" When the district has been affected so slightly by one of the greater famines on record and has suffered so little from similar visitations in previous years, an immunity from general famine can reasonably be claimed for it. The reasons for this immunity are not far to seek. The district is cultivated almost entirely by artificial cultivation, canal irrigation renders one-fifth of the area independent of the vicissitudes of the seasons, and, though the rainfall is light, the system which obtains elsewhere is devised so as to utilize all the water available, whether that brought down by the hill-streams or the surface drainage of the country. The cultivators themselves are protected from the distress consequent on scarcity and the rising price of food by the reserve stocks of grain which they keep, in accordance with immemorial custom, both for their own consumption and to afford seed for the ensuing harvest. The effect of high prices is moreover discounted in the case of landless labourers by the fact that they are paid in kind, while the lowest and most destitute of them, the *kamiyas*, are entitled to be fed by their masters in virtue of their position as bond-servants. The district is covered with a network of roads, and the railway has now penetrated in all directions, with the result that even the more remote parts are within easy reach of the markets. The development of communications has had the effect of levelling prices over larger and larger areas, and at the same time there has been a great advance in the material prosperity of the people. On the other hand, isolated tracts, where the soil is unfertile and where there is practically no system of irrigation, are always exposed to the danger of scarcity; and according to the official returns for 1905-06, it is estimated that 2,061 square miles, with a population of 7,72,000 is liable to famine and that 49,000 persons are likely to require relief in the event of serious famine."

Coming to the more recent years we find from the annual Land Revenue Administration Reports that the district suffered from scarcity in 1918-19, 1920-21, 1935-36, 1937-38, 1938-39 and 1940-41. There was no severe distress anywhere nor was the scarcity spread all over the district. From 1940-41 till 1949-50 the district did not experience any scarcity although there had been a certain amount of distress due to the floods in 1946 and 1948. The flood of 1948 was of a particularly severe type. Details of this flood have been given previously.

The year 1950-51 was, however, a period of economic scarcity. As reports about serious scarcity in different parts of the district were received quite early, a District Relief Committee with its branches all over the district was formed. A list of the scarcity areas was drawn up. The main cause of the scarcity, which began in 1950-51 and continued till 1952-53, was the unseasonable distribution of rainfall. There was a singular failure of the *hathia* which affected both the *aghani* as well as the *rabi* crops.

In 1951-52 the areas that were declared to be more distressed were Dumaria thana of the Sadar subdivision and Kutumba thana of Aurangabad subdivision. In the Jahanabad subdivision five thanas, namely, Jahanabad, Ghosi, Kurtha, Arwal and Makdumpore were declared to have been badly affected by scarcity. In Nawada subdivision the thanas of Kawakole and Rajauli were badly distressed.

Conditions, however, did not improve much in the following year of 1952-53. Different thanas of the Sadar subdivision which had not been affected in 1951-52, received the brunt of scarcity. The villages of the thanas Paraiya, Wazirganj, Atri, Khizir Sarai, Tekari, Belagunj, Gurwa and Mufassil were partly affected and the thanas of Barachatti, Imamganj, Dumaria and Bodh Gaya were entirely distressed. In Aurangabad subdivision Nabinagar area was very badly affected. The other thanas of Aurangabad subdivision namely, Goh, Rafiganj, Kutumba, Aurangabad, Baroon and Obra were partly affected. In Nawada subdivision the villages under the thanas of Nawada, Warsaliganj, Gobindpore and Rajauli were partly affected. The area under thana Pakri-barawan was very badly distressed. In Jahanabad subdivision, Jahanabad, Ghosi, Arwal, Makdumpore and Kurtha thanas were partly affected.

Gratuitous relief both in cash and in kind was liberally distributed. Persons affected by fire were also given relief. The State Government issued detailed instructions in the Revenue Department Resolution no. 2703-R., dated the 7th April, 1951, to take up relief measures. The amount spent on relief during 1951-52 was as follows :—

Subdivision.		Gratuitous relief.			Fire relief.			Flood relief.		
		Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Sadar	..	17,431	0	0	10,498	0	0	..		
Nawada	..	11,555	0	0	3,655	0	0	..		
Jahanabad	..	10,868	3	3	3,655	4	9	610	6	0*
Aurangabad	..	14,316	6	9	4,077	0	0	..		

*Actually there was no flood in Jahanabad subdivision. This amount was distributed among those sufferers whose houses were damaged due to heavy rains in the year 1951-52.

The statement below shows the amount allotted to the respective subdivisions for 1952-53 and there were very little savings :—

Subdivision.			Amount allotted for—	
			Gratuitous relief.	Fire relief.
			Rs.	Rs.
Sadar	..	..	36,000	11,000
Aurangabad	..	..	22,000	4,000
Jahanabad	..	..	22,000	2,000
Nawada	..	..	22,000	7,000

Besides this a sum of Rs. 39,606-4-0 was also received from the Government in the Revenue Department out of the donations received from private individuals for relief works in the scarcity affected areas of Bihar. This sum was to be spent for distribution of food in the worst affected parts of the district. Out of this a total sum of Rs. 27,281-11-0 had been spent. Agriculturists' loans and land improvement loans were liberally distributed to help the small cultivators and the middle class families in the distressed areas. Repeated failure of crops had affected their purchasing capacity and most of them consumed their small stock of seed grains. Agriculturists' loans were very much in demand by this class of people. The Sub-Deputy Magistrates who were designated as the Charge Superintendents and had been earlier associated with the preparation of lists of affected people, were detailed out to each police-station for the distribution of the loans. *Taccavi* loans were distributed at each thana headquarters and other convenient places in the interior of the thana just before the agricultural operations were started. The statement below will indicate the subdivisionwise expenditure incurred under the head Agricultural Loans and Land Improvement Loans in the years 1951-52 and 1952-53 :—

Subdivision.	Agricultural loans.		Land Improvement loans.	
	1951-52	1952-53	1951-52	1952-53
	Rs.	Rs.	Rs.	Rs.
Sadar	3,34,000	7,40,325	15,750	5,920
Jahanabad	1,70,000	4,99,655	6,220	12,125
Aurangabad	3,31,000	7,32,200	1,450	7,625
Nawada	3,90,000	6,19,020	14,600	1,000
Through Additional Subdivisional Officer.	76,850	18,850	88,045	1,14,480
Total	13,01,850	26,10,050	1,26,065	1,41,150

Another major problem was to find employment for the landless labourers in scarcity areas. With a view to give relief in this direction, repair work of *ahars* and *pains*, desilting of tanks, construction of wells,

repair of roads and construction of village roads were taken up. The figures below give the number of irrigation projects taken up in the district and amount spent :—

1951-52.			1952-53.		
Subdivision.	Number of schemes.	Amount spent.	Number of schemes.	Amount spent.	
		Rs. a. p.		Rs.	a. p.
Sadar	.. 8	1,58,673 14 6	61	2,15,486	3 0
Jahanabad	.. 1		22	88,274	1 0
Aurangabad	.. 10		32	51,817	0 0
Nawada	.. 17		21	74,108	0 0
		Total	..	4,29,595	4 0

The fund was allotted by Government in the Revenue Department.

The Local Self-Government Department had also allotted fund for the construction and repair of village roads in the scarcity area. The statement below shows the number of such roads taken up and amount spent :—

Year.	Number of roads taken up.		Amount spent.
			Rs.
1951-52	..	7	1,25,567
1952-53	..	11	1,11,706

The River Investigation Division and the Agriculture Department took up some major and medium irrigation schemes in the district and they also provided some employment to the landless labourers.

A particular feature of the distress of 1950—52 was scarcity of drinking water. To meet this problem Government had allotted funds for the construction of wells in scarcity areas wherever there was such need and particularly for the use of Harijans. A sum of Rs. 47,443-8-0 was spent for the construction of 65 *pucca* wells distributed as follows :—Sadar 10, Jahanabad 21, Aurangabad 22 and Nawada 12.

An additional sum of Rs. 3,009 was allotted in the year 1952-53 for completion of the wells that could not be completed in 1951-52.

The Local Self-Government Department had also made provision for the sinking of tubewells. A sum of Rs. 40,000 was spent in 1951-52 for sinking 69 tubewells distributed as follows :—Sadar 24, Jahanabad 15, Aurangabad 17 and Nawada 13.

The Agriculture Department was utilized for a number of open boring in wells in 1952-53. A sum of Rs. 20,000 was allotted by the Government for this purpose. The Agriculture Department executed

open boring in 33 wells distributed as follows :—Sadar 11, Jahanabad 4, Aurangabad 10 and Nawada 8.

As vegetation had dried up, there was a certain amount of scarcity for fodder for the cattle, particularly in the areas of Sherghati, Barachatty, Paraiya, and Fatehpur thanas in Sadar subdivision, Pakribarawan in Nawada subdivision and Nabinagar in Aurangabad subdivision. Collection of hay from the reserve forests in the subdivisions of Sadar, Nawadah and Aurangabad was allowed without payment of any charges. The scarcity of fodder disappeared owing to general rainfall by the middle of July, 1952.

Proper provision for checking the outbreak of epidemics was made. The District Health Officer, Municipal Health Officers and the Gram Panchayats worked in the scarcity areas and due to their efforts there was only the epidemic of cholera in certain parts of the district and it was brought under control. At convenient places distributing centres for medicines were set up. Skimmed milk supplied by the United Nations Organisation and Red Cross Society was distributed through the agency of Milk Society Centres in all the scarcity affected areas. This humanitarian work was carried out both in 1951-52 and 1952-53.

HAILSTORMS.

Sporadic hailstorms are not uncommon in this district. On the night of the 26th November, 1948 at about 2 A.M. there was a severe hailstorm. There were three showers of hail after brief intervals. The area affected by the hailstorm was fairly big and the accumulation did not melt away for two days on account of the cloudy weather. The hailstorm was accompanied and followed by heavy showers.

The hailstorm affected the crops. A survey was made to assess the damages caused by the hailstorm in the district. The following figures were reported :—

Police-Station.	Number of villages affected.	Approximate population affected.	Paddy affected.	Rabi affected.	Landless labourers affected.
1	2	3	4	5	6
			Acres.	Acres.	
1. Kutumba ..	59	13,370	6,450	4,102	1,858
2. Nabinagar ..	118	34,371	7,211	14,849	10,219
3. Aurangabad	18	1,695	915	2,205	1,086
4. Imamgunj ..	75	37,575	11,274	2,212	17,551
5. Dumaria ..	28	1,214	1,324	870	755
Total ..	298	88,225	27,174	24,238	31,469

Rs. 25,000 was allotted to the district for gratuitous relief and Rs. 1,07,000 as agriculturist loans for the affected areas. Gram and wheat seeds were also distributed in the areas affected by the hailstorm.