



AN ACCOUNT OF OPERATIONS IN GISHE WOREDA, ETHIOPIA¹

INDEXED

by

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Gishe woreda is the most northern part of the awraja of Menz and Gishe and of Shoa Province (Fig. 1). It is almost a separate section of the planet earth, bordered as it is on the north by high mountains, on the west and south by deep canyons, and on the east by the incredibly steep 7000 ft escarpment wall of the Abyssinian highlands dropping to the Rift Valley. Actually, our surveillance trip covered only three of the four meketel woredas of Gishe woreda; the fourth, Ansokiya, is the land from the watershed divided at the crest of the escarpment down to the valley floor. This section is approachable from the main road town of Kemise and is somewhat geographically and socially detached from the rest of the woreda.

The land is mostly rolling mountain fingers which slope in near parallel lines to the southwest until it drops off abruptly about 4000 ft to the Kechene River on the south and the Wajit River on the west. The northwest meketel of Del consists of moderately populated 9000 to 10 000 ft of mountains. The woreda capital, Rabel (population approximately 1500 people) sits on the crest of a hill in the southwest corner of the highlands. The population is 99.9% Amara farmers who grow wheat, barley, beans and peas. The literacy rate is, perhaps, 2%. There is no electricity, no piped water, no postal service, no telecommunication or radio communication service, no health facility or government trained health practitioner, no agricultural or community development extension worker.

The markets are:

Senyo Gebaya about 400 people;
Hamus Gebaya about 200 people;
Rabel Gebaya about 150-200 people;
Key Amba Gebaya (Del) about 500 people.

The schools are:

Senyo Gebaya - one teacher, 50 students, up to Grade 2;
Grar Amba - one teacher, 87 students up to Grade 2;
Rabel - six teachers, 350 students, up to Grade 7 (next year up to Grade 8);
Key Amba - two teachers, 60 students, up to Grade 4 (Swedish school)



¹ Note: Difficulties of various types have been and are being encountered by smallpox teams in the various countries. Probably the most difficult geographic area however, is Ethiopia. For one who has not worked in the field in Ethiopia, it is difficult to grasp the magnitude and nature of the problems there, as they differ so greatly from those in most areas. The following account of the logistics in one area which was prepared for the use of other teams is thus of special interest. The writers were health volunteers Warren Barrashand (United States of America) and Lewis Kaplan (United Kingdom). (Note that costs are expressed in Ethiopian dollars, equivalent to US\$ 0.50).

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There is a road which could be driven by four-wheel drive vehicles and perhaps buses if two washed out cliffside areas (at Siragedel in Geramider woreda) were improved with permanent water passes, if the road were graded and given a gravel surface in a few places, and if the road was maintained thereafter.

There are two stores in Rabel which sell matches, sugar, cigarettes, pens, razor blades, etc.

The purpose of the trip

The idea behind the trip was to survey the whole of Gishe woreda for smallpox and to concentrate manpower in containment activities wherever fresh smallpox cases were found. With cooperation and luck, it was thought possible to identify all existing foci, vaccinate around them, and eliminate smallpox in Gishe in one major effort before the rainy season. Past experience in Gishe woreda dictated that absolutely nothing necessary to survival or to the smallpox work should be left to chance. It was decided to send four surveillance teams for a month long, fully self-sufficient trip to Gishe woreda. Approval was given to buy animals to carry the necessary provisions and people. Three mules, one horse and 11 donkeys were taken to Gishe. A letter from the Enderasi of Shoa province, addressed directly to the Gishe woreda governor, ordering every assistance from the government officials down to the chackashum level, was carried by the teams. It was hoped that this letter, more than our Ministry ID cards or our personal powers of persuasion, would legitimize our presence and induce support from officials. It was hoped that some influential person could be found to accompany the expedition (for whatever period of time) to demonstrate even more than a high-powered letter that smallpox eradication in Gishe woreda was a matter to be taken seriously and watched closely by the powers that be. Unfortunately, no one was available at that time.

Preparation, provisions and equipment

Due to the nature of the land, one of our major problems was the transportation of ourselves and our provisions. We decided to get one mule or horse for each team and 10 donkeys to carry the provisions. Due to circumstances beyond our control, neither the awraja nor woreda officials were present to help us with the purchasing of the animals or caring for them during the following week while we finished the rest of the preparation. Purchasing was relatively easy, but we had numerous problems immediately thereafter trying to find people to watch and feed the animals and to work out the arrangements in acceptable contract form, with witnesses, etc.

Saturday, 27 April at Mehal Meda market we bought:

three mules (\$115, \$125, \$135 - two males, one female)
two horses (\$90, \$60 - both male)
seven donkeys (\$22 average price - all male)

Saturday, 4 May market, we bought:

5 more male donkeys (\$22 average price)¹

Saddles and bridles for the mules and horses were borrowed and rented from missionaries in Menz and Robi. Wooden back braces were made for seven donkeys by a carpenter in Debre Berha at \$5 each.

¹ One horse and two donkeys were used by the team left to survey Gera Midir woreda while the rest went to Gishe.

We were told that the donkeys were capable of carrying 50 kilos or more. Since we would be covering difficult terrain and moving several times a week, we planned to keep the loads at 25-30 kilos. However, at the beginning of the trip, loads were closer to 50 kilos as we incorrectly estimated the weight of the provisions, back braces, padding and packaging. We used one large foam sponge piece covered by a large burlap sack to protect the donkey's back from the wooden braces. Still, all of the donkeys that carried braces developed injuries at their shoulders and/or hips. Some of the injuries were sufficiently serious so that several donkeys could carry no loads at all during the last days of the trip. It became clear that mules would have been much better for transporting provisions. Mules, though more expensive than donkeys, are much stronger, faster, smarter and more sure-footed than donkeys. Also, they can be rotated between pack loads and people. A healthy mule can be expected to carry up to 80 kilos over the most difficult terrain day after day.

Because of the number of animals involved, we decided to hire two locals to work as "donkey men". Their responsibilities were to help us pack the donkeys on moving days, to keep the donkeys on the trail, and to adjust their loads whenever we were travelling. In addition, they served as guards for the camp. We hired the men by contract, guaranteeing to pay each \$2 per day (an excellent wage for the countryside). Each man, in turn, had to produce someone who would sign as a guarantor in the event that there was mutiny or some other difficulty during the trip. The contract was officially witnessed by the awraja secretary to give the agreement the necessary authority.

It was specified in the agreement that they were responsible for feeding themselves, but SEP provided the donkey men with cots, a tent, plates and cups. The cots and tent were especially appreciated by the donkey men both for comfort and status. The tents also eliminated the problem of asking people to put them up in their houses each night. We paid them whenever they asked for money (usually market days) rather than daily or weekly, and only as much as they asked for. We felt there was less chance of losing them because of homesickness in mid-trip if they were not accumulating money in their pockets. They understood this as they seemed to have taken the work to acquire cash sums and asked only for small portions of their earnings during the trip. The morale of the donkey men was hardly ever a problem.

Equipment

Wooden back braces, saddles, bridles, saddle blankets, leather (rawhide leather can be found in the market - it can be used for binding cracked wood and repairing saddles, bridles, etc.), leather straps (for tying loads on donkeys not carrying back braces), packs and travelling bags (no suitcases), rope (there are innumerable uses for rope - but it should not be to tie loads on donkeys as it will soon tear through their hide), cloth tape (innumerable uses, including repairing fraying rope), plastic jerry cans (5 liter size is perfect for getting the camp's water supply), rubber strapping, strong thread, wooden crates (Haig whiskey export crates worked fairly well for packing food, candles, etc., and they fit the back braces well), cardboard (for packing breakable things in crates), metal staples, metal corner, nails (large, medium, small), wood screws and metal rings.

Tools

Hammer, screwdriver, scissors, flashlight, sewing needles, all purpose knife (including can-opener and leather punch) and metal pot holder.

Smallpox and WHO camping equipment

Megaphone, vaccine, diluent, needles, needle containers, forms (including many field receipt forms), tents (including enough space to keep supplies inside a tent when camping), cots, sleeping bags and Gaz cookers.

Supplies

Candles, matches, batteries, gas cartouches (three per week per cooker), many strong plastic bags, rubber bands, plastic tea strainer, pots, pans, plates, cups, canteens, egg containers, toilet paper and bar soap.

Personal supplies aside from normal personal supplies

Plastic bandages, Nivea cream, water purification tablets, insect spray, incense (tent smells can become overwhelming).

Logistics

Once all the teams, the donkey men, animals and provisions were assembled in one place, we spent a day fitting the braces to particular donkeys and then breaking the mules and horses to the saddles and bits, meeting to discuss plans, and to make sure that responsibilities were understood.

Our original plan was to cross direct to Gishe via the main Mehal Meda - Rabel road. This road crosses the Kechene River through steep canyons on a rocky trail. Unfortunately, the donkeys that were carrying braces were unable to handle the road because they were overloaded and there were many passages that were too narrow for them. This would not have been a problem if we had had mules since the narrow passages would be below the load on a mule. We were forced to return to the highlands and make the much longer journey around the canyons, staying in the highlands all the time.

It is a good idea to keep a large group together when travelling, otherwise the possibility of taking different roads or having problems in the rear and having to contact the front will soon arise. It is a good idea to have a local guide if the road is unknown. Travel should be kept to six hours or less per day whenever possible. When the whole camp moved, it was best to take the whole process slowly and to use the rest of the day after arrival for resting, repairing, making contacts with people and gathering information.

Every night we had the problem of obtaining food and shelter for the animals. Usually hay could be bought from the farmers who were willing to take the animals in for the night. Animals should be fed well at every opportunity, including grain from the market. This raises the point of providing ample small change for financial transactions. About \$20 worth of 10 ¢ pieces and 100 single dollar bills should be brought for a trip like this; the rest of the money could be \$10 bills.

Our group consisted of 10 people - four surveillance officers, four student vaccinators, and two donkey men. Having four teams to cover a difficult terrain gave us the ability to survey vast sections of land very quickly by being able to split off into small groups to cover different sections of land simultaneously. It was thereby possible to pin down the smallpox foci as well as to check that the rest of the area was free of smallpox. We could then concentrate manpower around the foci and thoroughly cover the surrounding population (though not necessarily succeed in vaccinating them in just a few days).

In addition to efficient work, having good company on a long, tiring trip into the psychologically exhausting Amara highlands was necessary to maintain morale. Often several teams would have poor luck during a given day, but the others would do well. Seeing the accumulated figures gave a needed boost to all. However, more than 10 people would be too many people and animals for the countryside to support at one time.

The amount of time planned to spend in the field was 30 days. Due to the bad weather encountered when entering the woreda, one week was lost in travel that should have taken a maximum of two days. Because of this, it took 35 days to cover the woreda thoroughly.

It was agreed by all the team members that general exhaustion took over after four weeks of work. It is therefore recommended that three weeks be allotted for working in a designated area, allowing one week extra for travel to and from civilization.

The teams were scheduled to meet over the weekend of 4 May at Ashen School in Gera Midir woreda, which is situated near to the canyon we intended to cross to enter Gishe woreda. Two days were spent making certain everything was in working condition. On Tuesday, 7 May, the party set out down the 4000 ft cliff delineating the border. The donkeys were carrying their heaviest loads - none of the food having been eaten yet, and we struggled down the first five hundred feet in three hours, whereas the whole descent should have taken only one and a half hours. It was finally decided to turn back to the edge of the plateau with the intention of crossing the river at its source, where we would not have to lose or gain altitude drastically. Upon regaining the top of the canyon, we set up camp and begged the people to take care of our animals for the night.

The next day was spent repairing the equipment that had been broken while trying to make the descent.

The rain at this time was our greatest problem, and we advanced slowly through hail and fog along one side of the river then back along the other. Our route led us to Senyo Gebaya in Bebe Tabor meketel, where we had recourse to a small school and a market for information about smallpox. No rumours of smallpox were forthcoming, and so the next day the teams went searching north, south, east, and west. The team which took the westerly direction was informed of smallpox in the Rabel area. No more rumours having been uncovered, the expedition moved on to Rabel, the woreda capital, and the only town of more than 100 inhabitants. The woreda governor was apprised of our presence and our reasons for visiting. His support once pledged, the school was gleaned for rumours from around the meketel of Daire which is located in the southwestern corner of the woreda. After two days spent in locating the cases, the market was vaccinated.

Since cases had been located in this meketel, the main camp was moved to Feres Beit, the meketel seat (i.e. the governor's house) and the area in which smallpox had been reported. Government cooperation was minimal in this area. The governor denied receiving the letter sent to him by the woreda governor. There were cases 15 minutes ride from his house but he refused to accompany us on all occasions. Cases were found scattered into the highlands and the lowlands of Diel, but transmission was luckily at a very low level. Many reports of smallpox were four or five months old and the epidemic had virtually run its course by the time of our arrival. Rumours of cases from Wejit Georgis turned out to be chickenpox but all the rumours to the south and southwest were, or are still, foci of smallpox.

On the plateau, vaccination figures, though not as they might have been for effective eradication, added up with teams vaccinating every day. In the lowlands there was no cooperation from anybody, even to the extent of one team losing its way for some hours.

Lowlands

On Sunday, 26 May, the party divided itself into Kola (lowlands) and Dega (highlands) teams in order to cover the remaining territory before the food ran out. The Kola consists of all the land below the main plateau or mountain levels. The land is mostly steep rocky cliffs with very little arable soil. Consequently, the population of the Kola region is small, distributed sparsely around the occasional patches of soil, and physically isolated from the vast majority of the population by difficult geographical barriers. We split the Kechehe canyons into three geographical divisions: the Gishe side of the canyon, the Lele Gedel mountain in the middle (part of Gera Midir woreda) and the Gera Midir side of the canyon.

Smallpox was found in the compounds clustered near the Mehal Meda-Rabel road on the Gishe side of the canyon and scattered compounds on the Lele Gedel mountain. Variolation is practised in both of these areas and though it is responsible for transmission, it is also systematically raising the level of immunity in a sparse and isolated population. The people in these areas were very resistant to vaccination. There was no fresh smallpox found on the Gera Midir side of the canyon. From the Gera Midir side the Kola teams split again. One team checked half the canyon wall and then returned to Ashen. The other covered the remaining half of the canyon then crossed back to Gishe and checked the Gishe side of the Wajit canyon and the lower end of the Del mountains. All these eastern areas were found to be free of smallpox. On 2 June we met again with the Dega teams at Del.

The highland operation

The highland team was again hampered by rain. Appointments had been made to vaccinate at the Thursday market and also to check the surrounding area. The woreda governor had preceded us by two days, informing the people's leaders of our presence. The market was missed because of rain, but when the grade 2 elementary school director sent all the children home to spread the news of vaccination, people came to our tents for two days in sufficient numbers to prevent us from leaving. We were able to gather no information about smallpox during those two days. The next meketel town had a Swedish school in which we sheltered gratefully in the rain. We caught up with the woreda governor upon arrival who persuaded the meketel governor to assist, so that we might vaccinate successfully in the market held there on Sunday. Those parts of Gishe bordering closely with Wollo are mostly wild and lawless. Nearly all men carry rifles. At the market, the vaccinators began work while the meketel governor who accompanied us threw into jail everyone who refused vaccination. Vaccinations were performed for about one hour before a minor revolution flared up. We left the site before there was too much violence. It is obviously highly undesirable to use anything more than verbal persuasion when vaccinating the population of these areas.

One team from the canyons arrived that evening with the rest of the animals. The other worked for a few days on the southern side of the Kechene River before returning to Ashen by the more direct route.

The reunited party in Del checked the school the next day. Del is situated on a narrow finger that stretches from the north of Asternoma mountain to Weryilu. Most of the meketel's inhabitants live in the lowlands near the edge of the cliffs, and schoolchildren come from throughout the area. No rumours were reported, but as the day was ending, the meketel governor asked for an interview and presented a petition which stated that the people in a lowland area were suffering from smallpox and needed medical assistance. By this time the expedition had been en route for 30 days and everyone was ready to go home. However, it was decided that one team should investigate the rumour taking two mules, one for packing and one for riding. It was stipulated that the meketel governor should accompany the team until they left the area of the alleged outbreak. This team took a route back to Ashen through the lowlands but ascertained that there was no smallpox or even chickenpox in the area referred to in the governor's letter. The remaining two teams were to herd the donkeys and the equipment back from the western-most point of the woreda to the eastern-most point, by way of the peak of the highest mountain in Northern Shoa. The donkeys by this time were exhausted from overwork. On some occasions it had been impossible to buy food for them after long walks when moving camp. On the very long walk back to our motor cars the donkeys suffered greatly, nearly all of them being physically damaged by the time we arrived at Ashen. One of the riding animals was given a full load, so that the worst of the donkeys could walk free.

Conclusion

The method used for eradicating smallpox in Gishe woreda reduced the practical limitations of the trip to the weather, the geography and the nature of the people, all of which were beyond our control.

The trip was planned for the month before the rains with the expectation that transmission would all but cease by the next dry season and so the weather was predictably bad.

The roads that we used to move around the woreda were always arduous and exhausting. Every river crossing meant either dropping a thousand feet and regaining the altitude on the other side of the river, or traversing back along the edge of the river until it rose to a higher level where it could be more easily crossed. People were not interested in our intentions and asked continually for medicine for gonorrhoea, malaria, and typhus among other afflictions. They showed consternation when they realized that we were not joking about smallpox. Smallpox is not usually considered as a dangerous disease even when widespread, whereas the people are greatly concerned about other diseases. If some of the requested medicines were available for dispensing to the people, they would be more cooperative with the smallpox programme.

Everything over which the members of the expedition had control, worked well, or as efficiently as could be expected. The two main deficiencies were:

- (a) not having an influential Ethiopian with us;
- (b) the choice of donkeys over mules as pack animals.

These notes are primarily to be used as an example for others, should a similar type of expedition be mounted again.

Gishe woreda must be checked as soon as the rains are over. If not checked by helicopter, a team should walk in and work in those areas where smallpox might be expected, as the outbreaks were hardly contained in some instances. In this way a concentrated attack could be kept up and smallpox could be eradicated from a woreda in three months if three trips of 30 days each were made.

