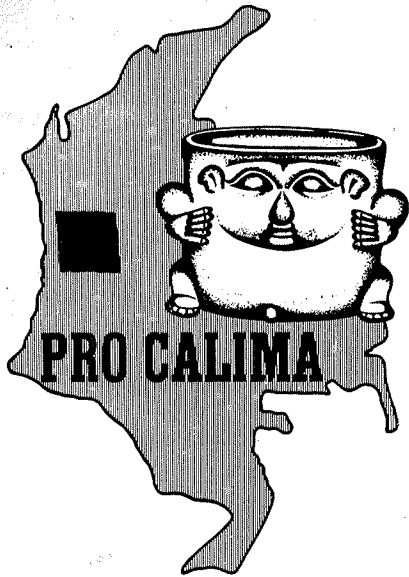




PRO CALIMA

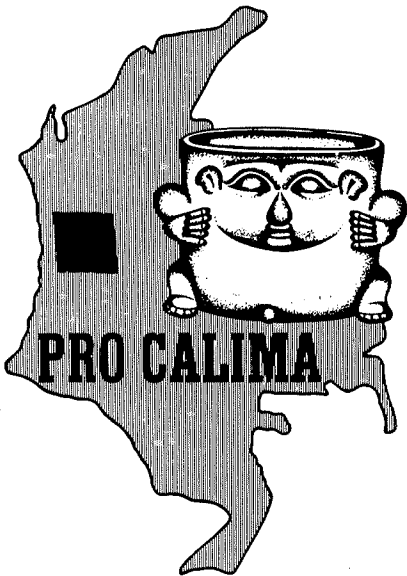
Archäologisch-ethnologisches Projekt im
westlichen Kolumbien/Südamerika

Periodische Publikation
der Vereinigung
Pro Calima

Oktober 1980

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Projekt im westlichen
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Periodische Publikation
der Vereinigung Pro Calima

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1. Introduction to the Calima project

Because of its geographical position, the upper Calima Valley is an area of great archaeological importance (Fig. 1). The Rio Calima drains from the western cordillera to the Pacific, and has at all times been a natural route of communication between the coast and the Andes. Archaeological evidence indicates that the Valley was one of the routes by which village farming, early pottery styles, and the knowledge of metallurgy spread to interior Colombia from the more developed regions of the Pacific coast. From the upper reaches of the Calima there are easy passes through the mountains into the Valley of the Rio Cauca, one of the principal lines of communication in the interior. Peoples and goods moved up and down these river systems, and there are archaeological trade pieces to show that the Calima tribes were in contact with many other areas of Colombia. A detailed study of the Calima Valley is not merely of local importance; it will also have significant implications for the archaeology of southern Colombia as a whole.

As a result of *guaquería* (clandestine excavation of ancient tombs), a mass of undocumented archaeological material has made its way into museums and private collections, and looting has now reached crisis proportions (Fig. 2).

A second, and equally serious threat, comes from the natural and inevitable processes of development. The construction of the Calima reservoir has already destroyed the sites in the valley bottom, and the area is attracting more and more colonists who are bringing land into cultivation and cutting down the forest which has protected many sites since their abandonment in the 16th century (Fig. 3).

On the positive side, this land clearance has exposed large tracts of the ancient landscape in largely un-

Fig. 1. Northwestern South America, showing the position of the Calima Valley. Triangles indicate Sonso-period sites investigated in 1962-4, and the stippled area marks the distribution of the closely related Quimbaya pottery of the Cauca valley. The number of Sonso sites has doubled as a result of the 1979 reconnaissance.

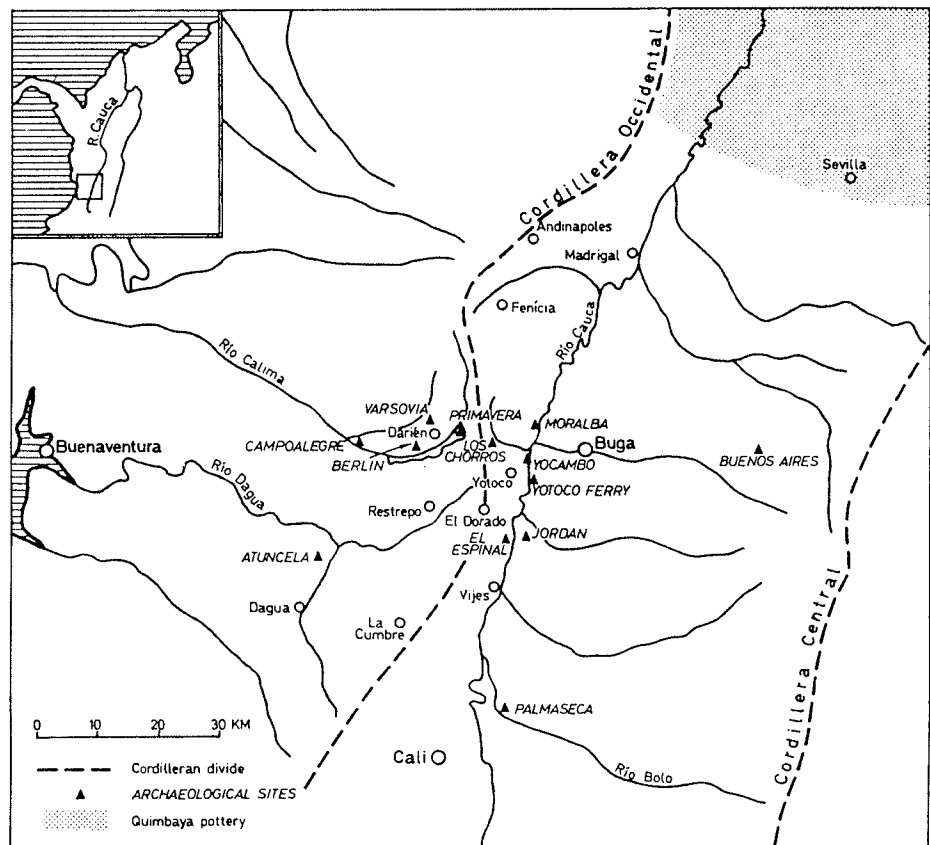




Fig. 2. Guaquero excavating a Calima tomb, photographed in the 1960s, when looting had already become a serious problem.

spoiled condition. Our reconnaissance survey in 1979 confirmed that the Calima Valley is rich in prehistoric remains: fields and trackways, house-platforms, rubbish tips, cemeteries and engraved rocks. Since much of the area is now pasture, some of these features show clearly on air photographs. What the region offers – for a little longer – is an unusually good opportunity to study a *total landscape* and a *total cultural pattern* from pre-European times to the present.

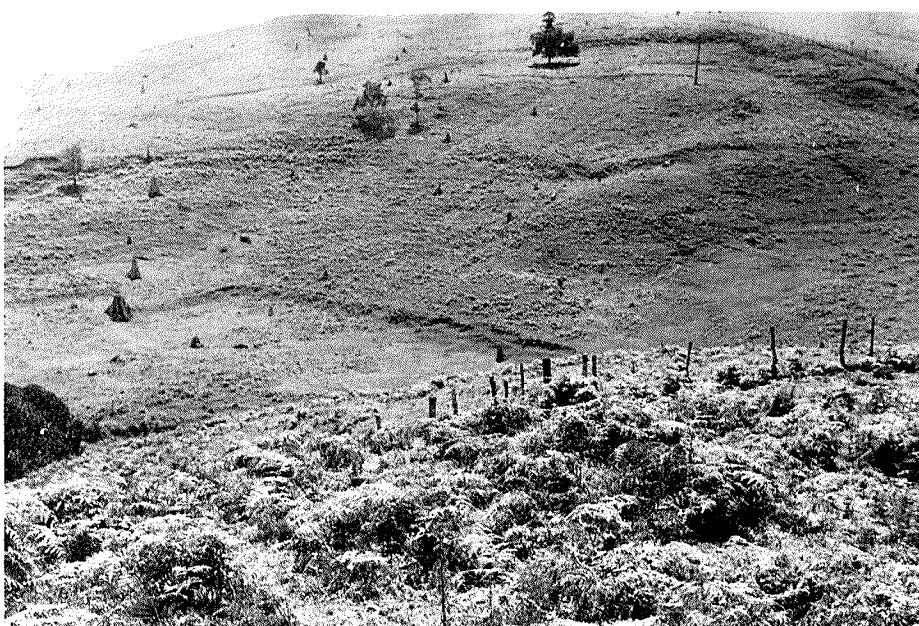


Fig. 3. The results of modern forest clearance in the Calima valley, to create cattle pasture. The stumps of the recently felled trees are still in place, but the ancient landscape is now unprotected. A rectangular depression marks the site of a prehistoric house, and the straight, diagonal lines on the slope behind it are field boundaries.

The Fundación Pro Calima was created in Switzerland in 1974, with the following objectives:

- a) to carry out a large-scale programme of archaeological rescue, with the emphasis on land use and settlement pattern studies rather than on excavation for still more museum objects;
- b) to provide an opportunity for Colombian and European scholars to work together on a common problem, and to provide field training for Colombian university students;
- c) in doing so, to make a practical contribution to the development of scientific archaeology in Co-

lombia and, through studies of ancient land use, to provide information which will be of value to the agencies engaged in planning the long term development of the Calima Valley.

2. The archaeological background

A rough outline of Calima prehistory has begun to emerge, though the details are still obscure. Three successive periods can be recognized, each with its own distinctive style of pottery and metalwork (Fig. 4).

a) Early Calima

This unsatisfactory and provisional name has been given to the time during which the finest gold pieces were made, as well as elaborately modelled vessels in the shape of human figures, animals and even houses (Fig. 5/6).

So far, this material is known only from tombs. By comparison with dated sites elsewhere in Colombia, the Early Calima period should fall somewhere between 300 B.C. and A.D. 1000. It is hoped that charcoal from a tomb excavated by Colombian members of the Fundación will provide the first radiocarbon date for this period.

b) The Yotoco Period (A.D. 1000-1200)

The Yotoco style was first defined in 1964 following excavations at

SONSO AD 1200-1550
YOTOCO AD 1000-1200
EARLY CALIMA ? 300 BC-AD 1000

Fig. 4. The archaeological periods and cultures of the Calima Valley.



Fig. 5. Breast ornament of hammered and repoussé sheet gold; width 30.5 cm. These items, typical of Early Calima goldwork, are decorated with a human face in high relief, wearing its own nose ornament and ear discs. This example, in the collection of the Gold Museum in Bogotá, was found by *guaqueros* in a tomb near Restrepo.
Photo: Museo del Oro, Bogotá.

Moralba and other sites in the Cauca Valley, but exemplars have since been discovered in Calima. The finest Yotoco pottery is painted with complex curvilinear designs over a red, orange or white background (Fig. 7).

c) The Sonso Period (A.D. 1200 to the Conquest)

This is the only period of Calima history for which we have reasonably good information. Since 1962, test excavations have been carried out at village sites and cemeteries in the Cauca Valley, throughout the cordillera, and in Calima. As a result of these excavations, and the activity of *guaqueros*, we can illustrate a wide range of objects in stone, wood, clay and gold (Fig. 8-12).



Fig. 6. Group of vessels of the Early Calima period. Characteristic of the Early style is a preference for modelled shapes and finely incised ornament.

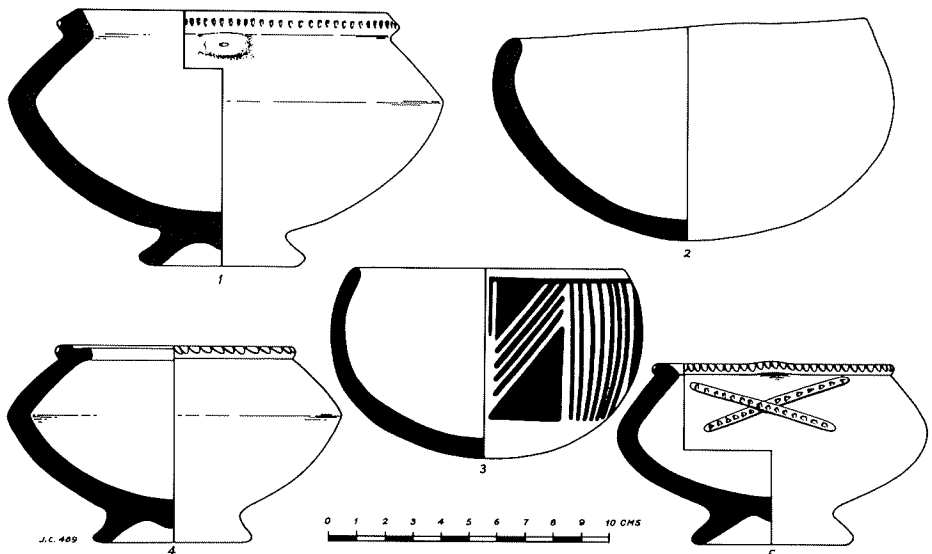


Fig. 7. A bowl of the Yotoco period, with the characteristic black painted designs over a red background.
Museo Nacional, Bogotá.

Fig. 8. Tree-trunk coffin, found by a farmer (with 2 wooden stools, a wooden lance and a group of Sonso vessels) in a waterlogged grave at the Hacienda Varsovia, in Calima. The coffin (now in the National Museum, Bogotá) gave a radiocarbon date of A. D. 1235.



Fig. 9. Five pots in the Sonso style, found in a tomb with the wooden coffin illustrated in fig. 8. Number 3 shows the typical painted decoration, in black over a red background, and the characteristic designs based on straight lines and solid blocks of colour.



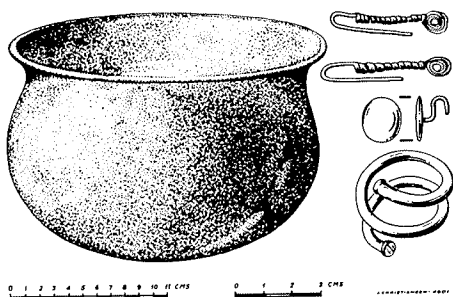


Fig. 10. This group of objects demonstrates the importance of recording all available material from Calima. The pot, and the four gold ornaments, were excavated by a guaquero in the 1960s at Morceba, and photographed within a few days of discovery. The items came from a Sonso tomb with a tree trunk coffin similar to fig. 8, and a wood sample from the coffin was dated A. D. 1335. This was one of the first radiocarbon dates to be obtained for the Sonso period, and the first for a tomb with Sonso gold.

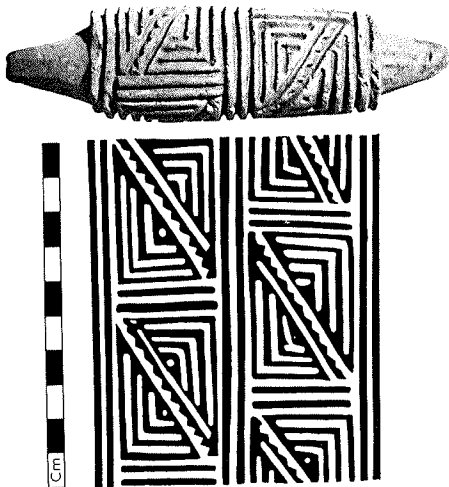


Fig. 11. Cylindrical roller stamp made of baked clay, found in a Sonso grave in Calima. Some modern Indian groups in Colombia still use wooden objects of the identical shape for body-painting. The paint is applied to the raised part of the cylinder, which is then rolled out to produce a continuous strip pattern.

3. Results of the 1979 season

In the summer of 1979 the Foundation set up an infrastructure in Colombia, obtained a firm contract for the next four years, and carried out a one-month reconnaissance in the Calima Valley. This survey, intended primarily as a feasibility study, forms the basis of our long-term planning and has allowed us to select those sites and areas to be investigated in 1980-84.

In addition, the 1979 season was rewarding in its own right, and some of the results are published here for the first time.

a) In order to sort out the distribution of the various pottery styles, spot checks were made at intervals along the roads from Yumbo (on the flanks of the Cauca Valley), through the mountains into Calima and to the Dagua Valley. Sherds were collected from cultivated fields and road banks at 30 localities. The Early Calima style

La Florencia

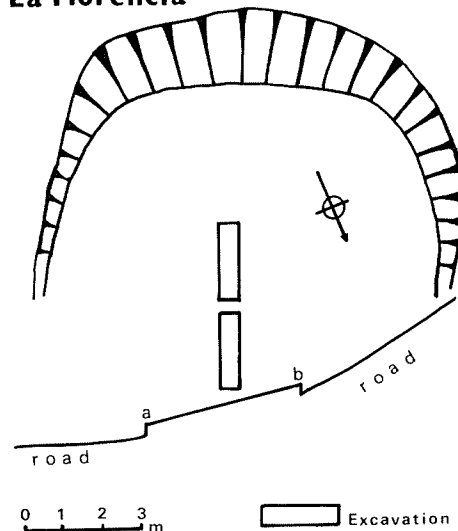


Fig. 14. House-platform of the Yotoco period at La Florencia, Calima, tested in 1979. Yotoco sherds were first observed in a stratum of dark fill exposed in the road bank on the downhill side of the platform at a-b (fig. 15).

Fig. 13. Leonor Herrera, Colombian Institute of Anthropology, investigating the burial chamber of a tomb with 3 'Pavas urns'. The grave was found accidentally, while cutting a drain in the patio of a house in the town of Pavas, and we were able to make a plan of the tomb and a record of its contents before it was destroyed.

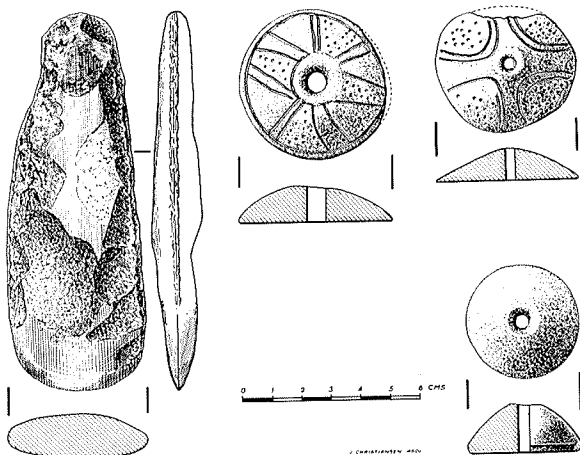
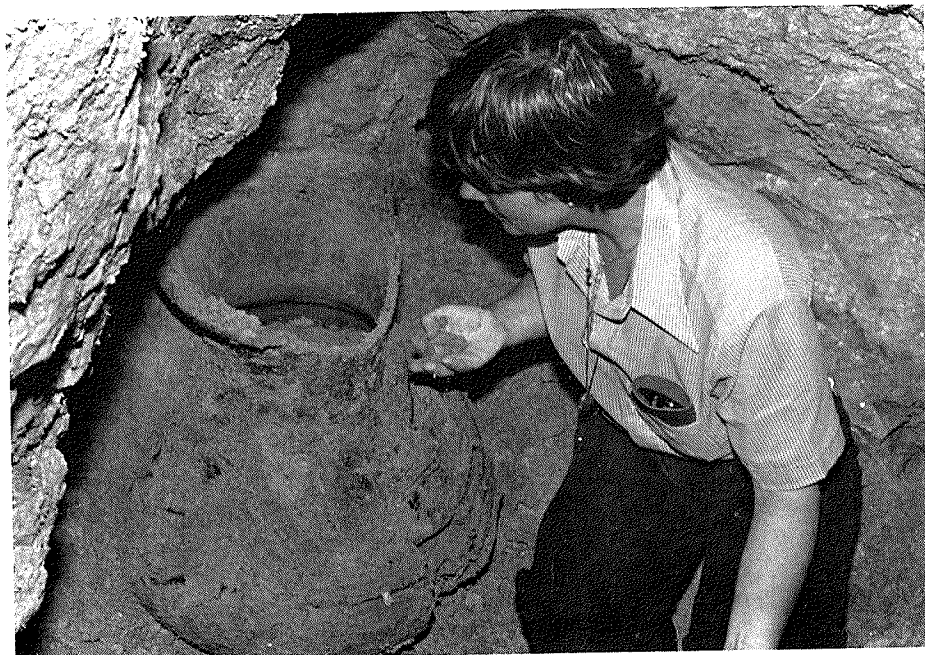


Fig. 12. The contents of a Sonso tomb excavated at La Primavera, Calima, in 1962. Sonso graves rarely contain rich offerings. This one yielded only a stone axe and three spindle whorls of baked clay.



was found only in the municipios of Restrepo and Darien, but the Yotoco and Sonso styles were widespread throughout the whole area. Burial in large pots – the so-called 'Pavas urns' – is confined to parts of the cordillera (Fig. 13).

b) Of these sites, four were tested by excavation: these included a houseplatform with Yotoco pottery at Florencia (Fig. 14/15) and a rubbish dump of the Sonso period at La Merced (Fig. 16).

c) In addition, Yotoco tombs were excavated at La Iberia in the Calima Valley, and a Sonso tomb at la Campiña in the nearby Dagua Valley (Fig. 17/18).

d) Four new engraved rocks were discovered to add to the 60 recorded in 1962 (Fig. 19).

e) An important part of the Foundation's work is a compilation of all Calima objects existing in museums and private collections. More than 700 items were drawn or photographed in 1979, many

of them at farmhouses and in dealers' shops, where they are not normally available to scholars. Among the more interesting objects found during this search were a maize cob and a piece of woven cloth (both from burials with 'Pavas urns'), two stone spear points, three pieces of sculpture in unbaked clay and 20 crudely carved stone statues of a previously unknown kind (Fig. 20–25).



Fig. 15. The start of the excavation at La Florencia: cleaning up the road cut (a-b in fig. 14) to expose the dark stratum containing Yotoco sherds.



Fig. 16. A very rich scatter of broken pottens marks the site of a Sonso period rubbish dump discovered in 1979 at La Merced in the cordillera east of Calima. Test excavation at this site provided a collection of ordinary domestic pottery to supplement material from tombs.



Fig. 18. The burial chamber of the tomb at La Campiña (fig. 17). Photograph taken at the moment of discovery, showing the pots arranged round the walls. The earth fallen from the roof (centre) conceals other vessels. Photo: Victor Englebert.

Fig. 17. Section and plan of a Sonso shaft tomb excavated in 1979 at La Campiña. Inside the burial chamber (fig. 18) were 13 pots and 2 nose-ornaments of gold alloy. When the shaft of the tomb was half-filled, the funeral party threw in the contents of the deceased's kitchen, and there is a layer of broken grinding stones and fire-blackened hearth stones.

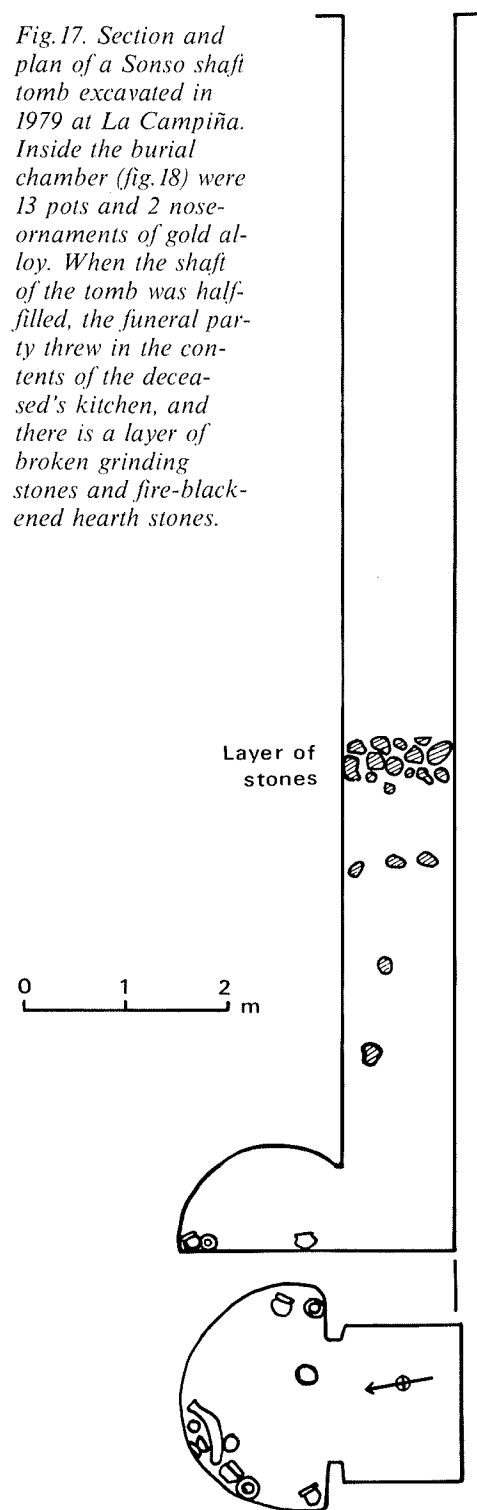




Fig. 19. Cleaning dead leaves and humus to expose the rock-engravings at El Reposo, Restrepo. The top of this huge rock was covered with fine geometrical patterns.

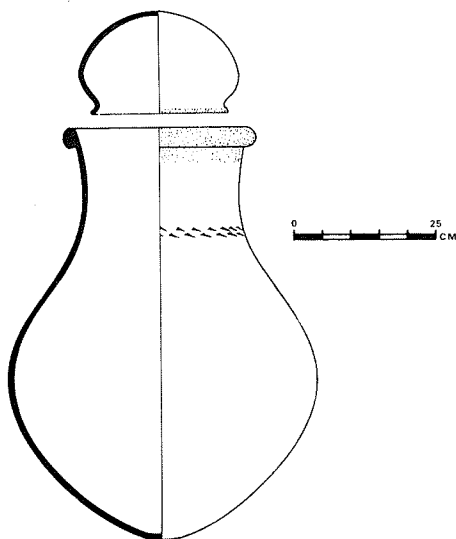
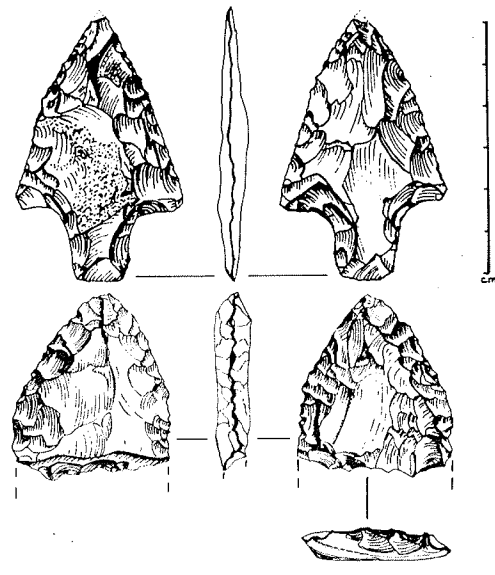


Fig. 20. Pavas urn. Drawn as discovered, with an inverted bowl serving as a lid. Stippled areas have red paint, and the urn has two rows of triangular impressions. Contents included human bone and the textile illustrated in fig. 21. From a private collection.

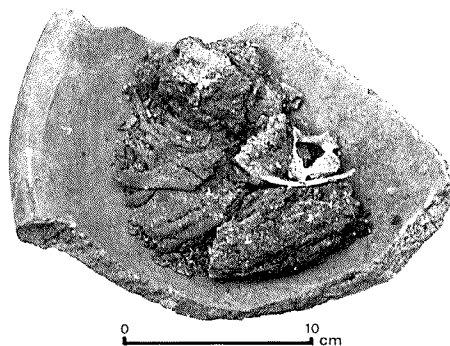


Fig. 21. Fragment of cloth from the urn illustrated in fig. 20.



Fig. 23. Human figures made of unfired clay, from the collections of the Restrepo museum (left) and the Cali museum (right). The age of these sculptures is unknown. Reports suggest that these figures are not uncommon, but, because of their fragile condition, they are rarely preserved.



0 10 20 cms

Fig. 25. Natural boulder carved into the shape of a human figure. Like most of the other examples, this one was found in a tomb.

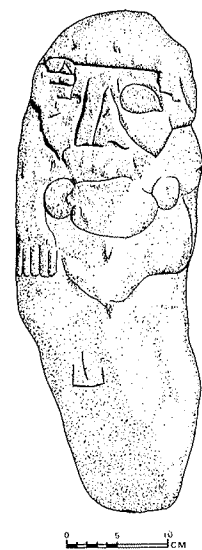


Fig. 24. One of the surprises of the 1979 reconnaissance was the discovery of crude stone sculptures of a hitherto unrecorded style. They were found, in ones and twos, in farmyards, museum stores and in private collections. This example was photographed in the yard of a repair shop in the town of Restrepo. This view shows a human face (right) and, on the left, a second figure with a roughly-carved face and rudimentary arms.



◀ Fig. 22. Two spear points of chipped stone, discovered in 1979 and 1980. The lower one was broken in antiquity, and then resharpened. The upper specimen was found in the shaft of a Sonso-period tomb.

4. Research objectives, 1980 – 84

To gain maximum benefit from the collaboration between scientists in different fields, research will proceed simultaneously on a number of related problems.

a) Dating

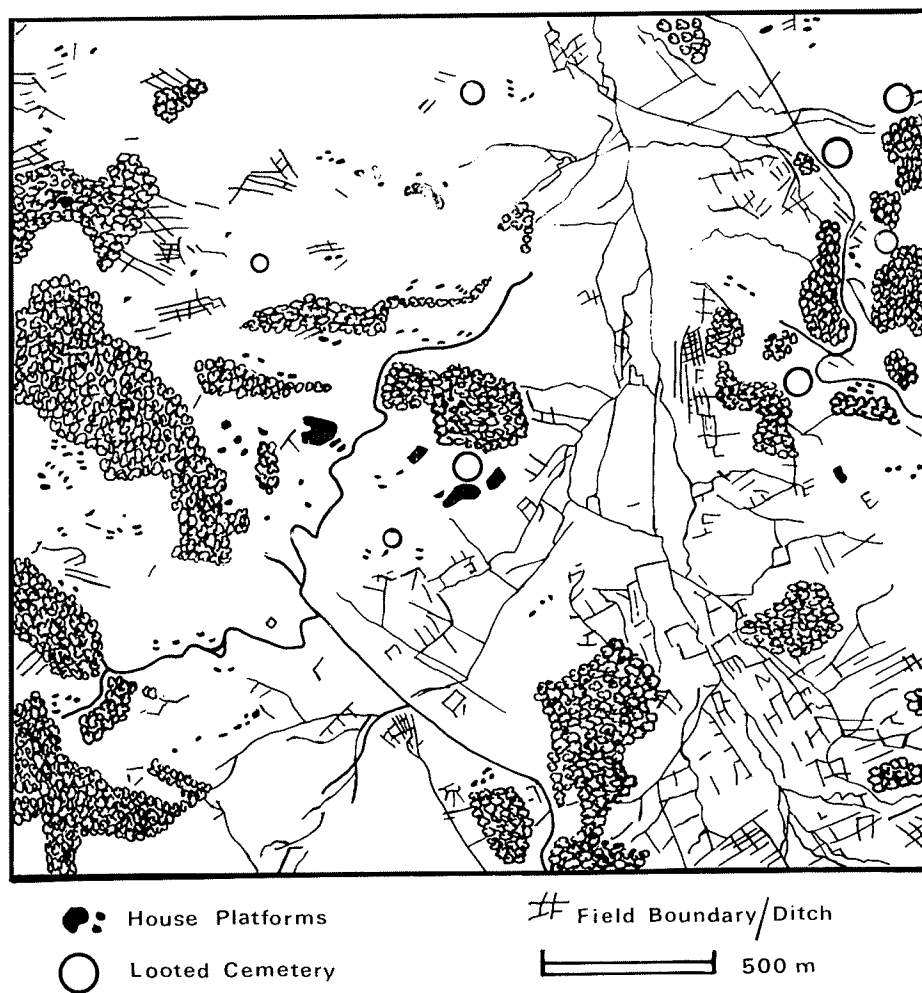
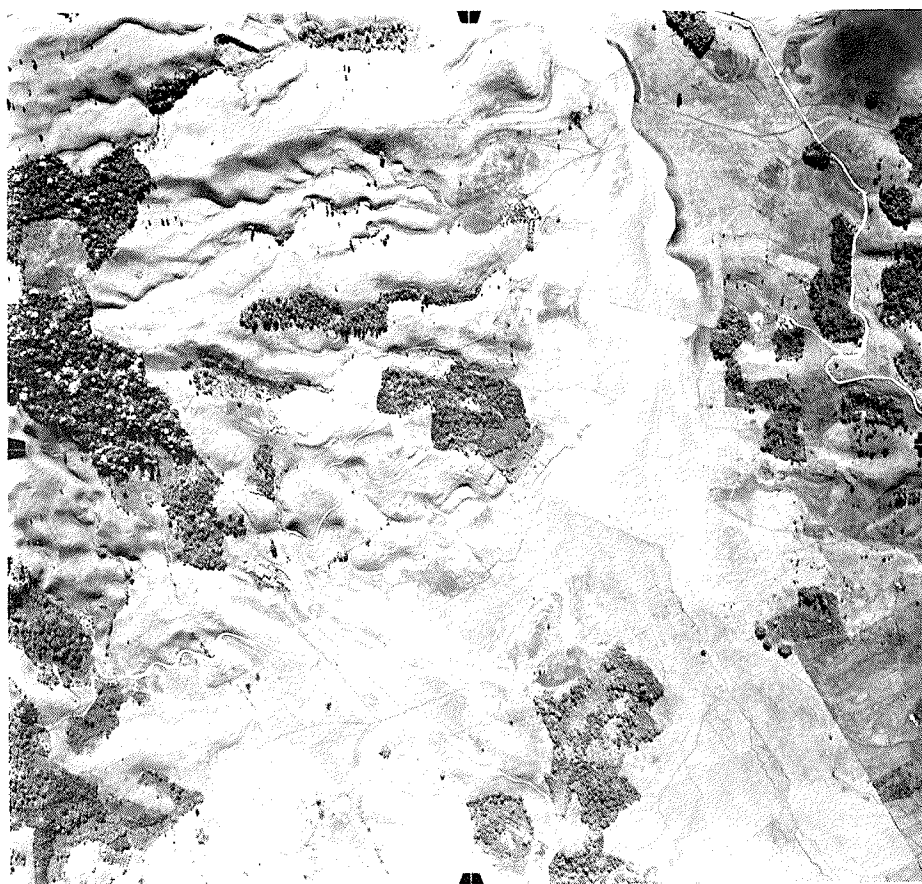
During the Valley's long history of occupation there have been changes – in pottery styles and gold jewellery, in burial customs, technology, and also in the number of people and the social organization of the Valley's inhabitants. To study these changing patterns, and to write the history of Calima, the first essential is to place things in their right order, to obtain dates for indi-

Fig. 26.

Above: Air photograph of part of the Calima Valley, taken in 1961 before the construction of the dam. The valley bottom is now beneath the waters of Lake Calima, but early photographs show a wealth of archaeological detail which is no longer visible.

Below: The first stage of the survey: archaeological information is transferred from the air photograph to transparent tracing film.

The tracing shows more than 130 house platforms on the hill slopes (compared with 11 present day farms), and also 8 looted cemeteries, as well as a palimpsest of agricultural features. On the valley floor, ditches for irrigation or drainage connect the streams and tributaries flowing into the Rio Calima. Some of these ditches may be recent: others are clearly ancient, for they are linked to extinct and silted stream channels. On the slopes close to the platforms, prehistoric field boundaries show up wherever the forest has been cleared for pasture.



vidual sites, objects and art styles. This problem will be solved by the excavation of house sites and tombs (with special emphasis on the collection of charcoal for radiocarbon dating), combined with a detailed study of archaeological materials from collections in Colombia and elsewhere.

b) *House-Platform and Settlement Survey*

Most archaeological activity, illegal or legitimate, has concentrated on the excavation of tombs. In consequence, we still know very little about everyday domestic life in Calima before the European conquest. All over the foothills are *patios de indios*, platforms that were artificially levelled to serve as the foundations of prehistoric houses. Since there are thousands of these platforms in Calima, it is not practicable to test them all, and a statistical sampling programme will have to be employed.

As a first stage, an air photo mosaic of the entire valley will be prepared and all visible sites marked on a base map (Fig. 26). Sample areas will next be surveyed on the ground, to check the accuracy of the photographic map. Then, a percentage of the total number of house-platforms will be chosen for test excavation, mainly with the aim of acquiring pottery and charcoal for dating purposes. Finally, the most promising of these platforms will be completely excavated in order to reveal building plans and to give information about domestic arrangements at different periods in the Valley's history.

Besides filling out our picture of rural life, the survey will provide data on changes in the size and distribution of the population through time, will show what factors influenced the location of ancient settlements and will give an idea of tribal organization in pre-Spanish times.

c) *Ecology and land-use*

These studies are designed to show how man made use of his environment, and to examine changing patterns of land-use in Calima.

The Calima Valley today is underexploited. Much of the land clea-

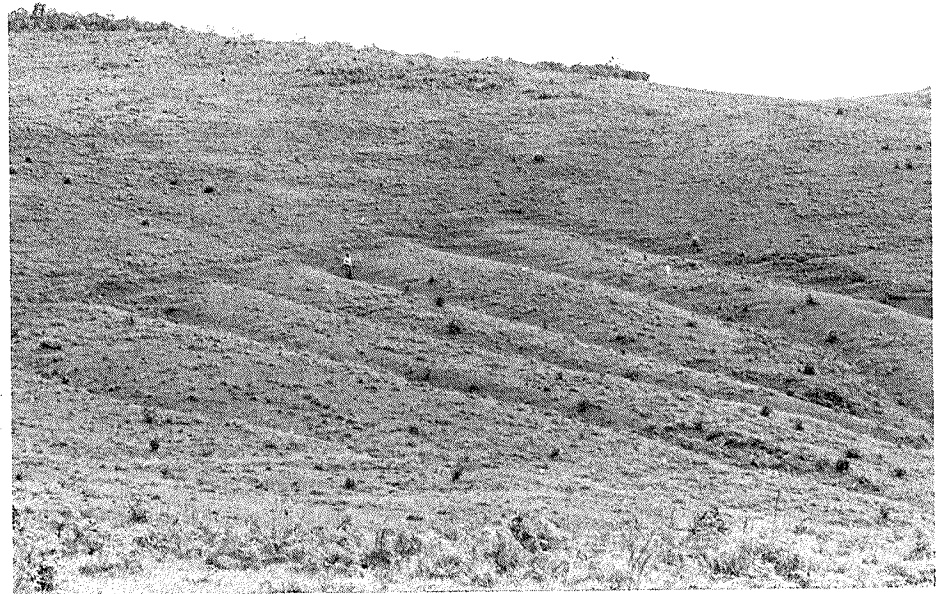


Fig. 27. A group of artificial ridges, or 'raised fields', near Restrepo. The figure gives some idea of the size. These fields are big enough to show clearly on the air photographs of the region.

red from the forest during the last decades has been turned over to cattle pasture, even though it is suitable for crop cultivation. Our archaeological survey shows that in pre-Spanish times the Valley supported many more people than it does today, and that this population was sustained by intensive farming of plants like maize and sweet manioc. Some of the techniques which we have already recorded in Calima (e.g. the use of artificial ridges or raised fields) are not employed in the area today (Fig. 27). The exact date of these fields is unknown, as are the farming practices associated with them.

The modern situation must form the basis for reconstructing the past, and the Project will make use of information already collected by the regional development corporation (the C.V.C.) on the soils of the Valley and their potential for agriculture, on the natural vegetation, hydrology and geology of Calima, and on present day land use.

Our own archaeological investigations will focus on the animal bones and plant remains from excavations, and on the study of ancient soils and prehistoric land surfaces buried beneath archaeological structures.

The fields will be mapped and tested by excavation in order to establish their date, and, by means of soil and pollen analyses, to show what crops were grown.

d) *Continued Survey*

The work of recording existing collections will go on, and our survey area will be increased until we have established the geographical frontiers of the Calima cultures. Our east-west transect through the cordillera will be extended, via the Dagua Valley, down the Pacific slope and into the coastal lowlands, with the aim of comparing and correlating the sequence of archaeological developments in the Andes and the coastal zones. The discovery of sea shells in Calima graves, far inland, and of jewellery made of platinum from the rivers of the Pacific lowlands, are signs that trade links have always existed between the two regions.

5. Programme for 1980

The 1980 field season runs from July to the end of September, with a mixed European and Colombian staff. Four Colombian students, each from a different university, joined the Project in August and September.

On the basis of the 1979 reconnaissance, the area between the town of Restrepo and the Calima reservoir was chosen for detailed study. Air photographs, and our own survey, confirm that sites of all kinds and all periods are present in this area. Several sites, including an unusual crop mark discovered in 1979 (Fig. 28), were chosen for excavation.

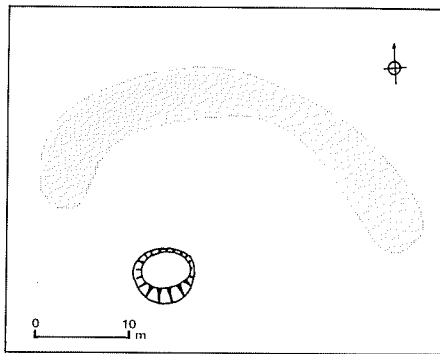


Fig. 28. This enigmatic site was found during the reconnaissance expedition in 1979, and has still to be excavated. It consists of a crescent-shaped 'crop-mark' (an area where the grass is a darker green than in the surrounding meadow) and a low flat-topped mound or tumulus. The nature and purpose of these structures are unknown.

The programme was approved by the Colombian Anthropological Institute, and our sponsors in Switzerland and Britain guaranteed the necessary funds for the 1980 season. To these people, and to the many individuals and organizations who have helped us during the past years, the Foundation offers its most grateful thanks.

Dr. Warwick Bray

Zusammenfassung

Das Calima-Tal war zu allen Zeiten eine natürliche Verkehrsader zwischen der Küste und den Anden. Es ist deshalb nicht verwunderlich, dass es eine archäologisch bedeutende Region darstellt. Die zahlreichen interessanten Funde in Museen und Privatsammlungen stammen grösstenteils aus Raubgrabungen, weshalb sie kaum Aussagen über kulturelle Zusammenhänge erlauben. Um wissenschaftliche Forschungen durchzuführen, wurde 1974 die Vereinigung «Pro Calima» gegründet. Sie wird durch Firmen und private Spender in der Schweiz und in England unterstützt. Sie arbeitet eng mit den kolumbianischen Stellen und Instituten zusammen.

Aufgrund der unterschiedlichen Keramik und der Metallobjekte lassen sich drei Perioden unterscheiden. Die frühe Calimazeit (300 v. Chr. bis 1000 n. Chr.) zeichnete sich aus durch schöne Goldobjekte und Gefässe in Menschen-, Tier- und Hausform. Die Yotoko-Periode (1000 bis 1200 n. Chr.) ist charakterisiert durch Keramik, die mit komplizierten Bogenmustern verziert ist. Die Sonso-Periode (1200 bis zur Eroberung) ist durch Stein-, Holz-, Ton- und Goldobjekte gut belegt.

1979 führte die «Pro Calima» eine einmonatige Rekognoszierung durch. Sie ermöglichte es, eine Infrastruktur in Kolumbien aufzubauen. Die kolumbianischen Behörden erteilten eine Grabungsbewilligung für Feldtappen in den Jahren 1980–1984. Verschiedene kleine Untersuchungen und Begehungen führten zu ersten Ergebnissen über die Verbreitung über die Keramik-Stile. Der frühe Calima-Stil wurde nur in Restrepo und in Darien gefunden, während Yotoko- und Sonso-Stil weit verbreitet sind. Neue Felsgravierungen wurden entdeckt. In Museen und Privat-Sammlungen wurden mehr als 700 Objekte gezeichnet oder fotografiert, um einen Überblick über das Material zu bekommen. Die vorläufigen Ergebnisse zeigen, dass das Calima-Tal in vor-spanischen Zeiten dichter besiedelt war als heute.

Die Feldarbeit im Jahre 1980 wird durch eine Gruppe von Europäern und Kolumbianern, wobei auch kolumbianische Studenten einbezogen

werden, von Juli bis September durchgeführt. Sie gilt dem Gebiet zwischen Restrepo und dem Calima-Stausee.

Résumé

La vallée de Calima a toujours été une artère naturelle reliant la Côte aux Andes. Il n'est donc pas étonnant que la région revête un intérêt archéologique particulier. Les nombreuses trouvailles faites tant dans les musées que dans les collections privées, proviennent la plupart de pillages de fouilles, n'offrant dès lors peu de renseignements sur les enchaînements culturels. L'Association Pro Calima a donc été fondée en 1974, afin d'effectuer des recherches scientifiques. Elle est alimentée par des dons et par des entreprises privées de Suisse et d'Angleterre. Elle coopère étroitement avec les instances et instituts colombiens.

En se fondant sur les diverses céramiques et les objets métalliques, trois périodes se distinguent: l'ancien temps de Calima (300 avant J.C.–1000 après J.C.) est caractérisé par ses objets en or et par ses récipients en forme d'homme, d'animal ou de maison. La période de Yotoko (1000–1200 après J.C.) est typique par ses céramiques ornées de dessins en arc. La période de Sonso (1200 après J.C. jusqu'à la conquête) est bien fournie en objets en pierre, en bois, en grès et en or.

En 1979, Pro Calima s'est rendue en reconnaissance durant un mois, ce qui lui a permis de reconstruire une infrastructure en Colombie. Les autorités colombiennes ont délivré un permis de fouille pour les étapes des années 1980–1984. Divers petits examens et inspections ont conduit aux premiers résultats sur la propagation des styles de la céramique. L'ancien style de Calima n'a été découvert qu'à Restrepo et à Darien, tandis que les styles Yotoko et Sonso sont largement répandus. De nouvelles gravures dans le rocher ont été découvertes. Plus de 700 objets de musées et de collections privées ont été dessinés ou photographiés, afin d'obtenir un aperçu du matériel. Les résultats provisoires démontrent que la population de la

vallée de Calima était plus dense qu'aujourd'hui.

Les travaux à ciel ouvert de l'année 1980 sont effectuée de juillet à septembre, dans la région située entre Restrepo et le bassin d'accumulation de Calima, par un groupe composé d'Européens et de Colombiens. Des étudiants colombiens en font également partie.

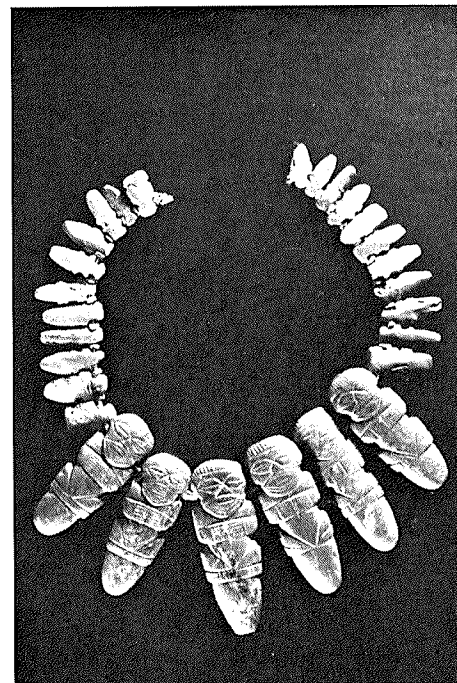
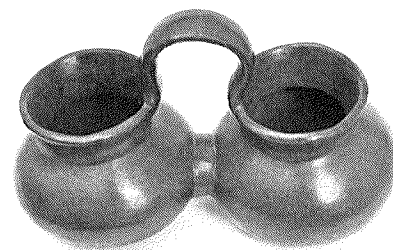
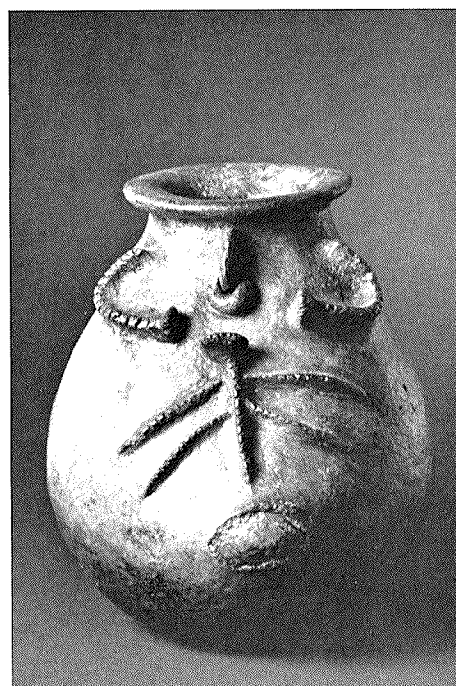
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 Schweizerischer Bankverein,
 Jubiläumsstiftung
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Vorstandsmitglieder Pro Calima

Frau Dr. phil. Annemarie Foote
 Herr PD Dr. med. Niklaus Gyr
 Herr Dr. phil. Ernst Müller
 Frau Eva Tschopp
 Herr PD Dr. med. Hans Tschopp
 Herr Dr. med. Rupert Spillmann
 Herr Dr. jur. Charles Studer-Schild

Funde aus dem Calima-Gebiet, die sich jetzt in Privatsammlungen befinden



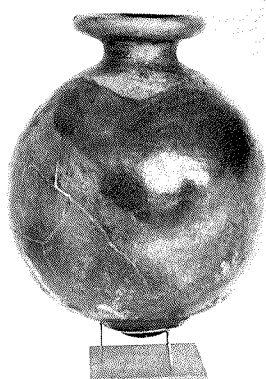


Fig. 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

