

The Bronze Age in Trentino and Alto Adige/SüdTirol

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ABSTRACT - The Authors present an overview about the Bronze Age in Trentino and Alto Adige/SüdTirol

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1. TRENTINO¹

1.1. *The Early Bronze Age*

The research carried out into the Early Bronze Age of the Atesina area that corresponds with modern Trentino have defined - mainly on the basis of evidence from the secondary deposit of Montesei di Serso in Val Sugana and the objects found in the tomb at Vela Valbusa di Trento - a first aspect known as the "formative phase" (PERINI, 1990: 233-234; 1992: 451-453; 1994: 66; BERMOND MONTANARI *et al.*, 1996: 58; MOTTES & NICOLIS, 1998: 73). In this phase elements of the Eneolithic are identified - in particular bell shaped - Poladian type ceramics and a metallurgical component of eastern influence that is recognisable in the Ig II type eye axe and awls.

The importance assumed by metallurgical activity between the Late Eneolithic and the Early Bronze Age is testified to by the find of a large amount of slag and foundry ovens found at Montesei di Serso in Val Sugana and in Valle dell' Adige on cones in correspondence to rock shelters (PERINI, 1989: 377-379; NOTHDURFTER, 1993: 68-70; DAL RI & TECCHIATI, 1994: 30). At Vela Valbusa di Trento above a clay foundry oven, the secondary tomb of a woman was found - covered by a pile of stones - the funerary ware of which included, along with spherical jugs of the Poladian type,

various ornamental elements, amongst which, Montgomery type buttons (or small stick type pendants), that have also been found in other sites in Trentino, in contexts referable to the Polada Culture (FASANI, 1990: 165-181; MOTTES & NICOLIS, 1998: 75-76). The Vela tomb is placed by Fasani in an "archaic moment of the Polada Culture", due to the recurrence of the small stick pendants - widespread throughout northern Italy, southern France and in the Rhine area south of Frankfurt - in complexes pertinent to a recent phase of the Bell-shaped vase culture (FASANI, 1990:176).

The evidence at the pile dwelling at Ledro of this type of pendant and a form of triangular dagger allows one to hypothesise that the site was frequented during the advanced Eneolithic or at a "formative" or "archaic" moment of the Early Bronze Age (RAGETH, 1974, tav. 91: 9, tav. 95: 9; DAL RI & TECCHIATI, 1994: 29, fig. 16:1; CARANCINI, 1996: 46, fig. 7: 1).

Between the end of the Eneolithic and the beginnings of the Early Bronze Age Perini found a few ceramic fragments in layer Fiavé 2: small jug, elbow shaped handles and a "*Furchenstich*" (PERINI, 1994:63-66), a technique widespread in the trans-Alpine area and found in Trentino in the "thin version" in layer Isera 2 dated to 4200-3800 B.C (PEDROTTI, 1997:77).

In view of the external evidence it therefore appears evident that there was interaction on the local eneolithic substratum of several cultural influences from central and east European areas which contributed

towards the local aspect of the Early Bronze Age (the “formative” or “archaic” phase of the Polada) (PERINI, 1992:451-453). The phenomenon is so evident that, by unanimous opinion, a movement of human groups can be presumed, in a measure that still has to be defined, together with a precise origin – or origins – due to the relative meagreness of documentation (DAL RI, 1991-1995:202, 204).

The classical aspect of the Polada culture, defined at the Viareggio conference (BERMOND MONTANARI *et al.*, 1996:60), as exemplified by materials from the eponymous site and in the Lavagnone 2 layer (PERINI, 1980:124-133), a sufficient articulation of types in the pile dwelling at Molina di Ledro is recognised (RAGETH, 1974) where the absence of precise associative data is moreover evidenced in several incongruities in respect to the sequence of the ceramics at Fiavé. This limit also impedes the complete definition on an associative basis, of the relationship existing between the “formative” and “classical” moment, which at Lavagnone also includes elements of the bell-shaped tradition and metallic materials produced from Fählerz type minerals (PERINI, 1980: 132; DE MARINIS *et al.*, 1996: 260). Elements referable to the classical aspect – remains of globular jugs with ring shaped handles below the rim, elbow shaped and with ends that have two small protrusions or a single button – have been found not only at Ledro but also at several sites on rises and in rock shelters (MARZATICO, 1987, fig. 9: 516, 13: 274; 1988, fig. 18-19). The spread of this documentation and the presence of other characteristic forms, such as, for example, that of the breast-shaped swell (RAGETH, 1974, tav. 66: 2, 4; PERINI, 1975, fig. 19: 4), indicate the full adhesion of Trentino to the Poladian aspect regarding the development of which there are clear trans-Alpine influences (Unetice, Madarovè, Gata-Wieselburg), as shown by the distribution of cone-shaped blowing nozzles, enigmatic tablets and the characteristics of several ceramics and metallic artefacts (RAGETH, 1974: 216-220; DAL RI, 1991-1995: 200, 202; RODEN, 1988: 62-82; LUNZ, 1994: 30-31; 1997: 413).

The Fiavé pile dwellings, in correspondence to areas 2 and 4 provides an explanation, on the basis of characteristic ceramics found in area 2 in association with Sigriwil and Lanquaid type axes, for a local aspect at the end of the Early Bronze Age, known as Fiavé 3 (PERINI, 1994: 255-393; MARZATICO, 1996: 247-256). Along with the forms common to other areas (we refer to neck shaped forms with engraved decorations, pans and bowls with cruciform motifs), distinctive elements are truncated cone shaped small jugs and vases with rich plastic decoration and globose jugs of the Poladian tradition, both fitted with handles with plastic button appendixes joined at the rim, a type already known in at least six other sites in Trentino and also at Arquà Petracca and at Canàr. (MARZATICO, 1996:250-

252). In this latter habitat ceramics were found that are comparable with those of the Wieselburg-Gata group, the influence of which also reached Fiavé 3 (MARZATICO, 1996, fig. 5: 4; BELLINTANI, 1992: 245-297).

The Early Bronze Age burial grounds at Romagnano, Solteri, Borgonuovo di Mezzocorona, Nogarole di Mozzolombardo, Colombo di Mori, Riparo del Santuario di Lasino and the glacier well at Poieti di Vezzano document the practice of inhumation, with the use of the crouching position below a pile of stones and the presence of burials of infants in vases, of secondary depositions as well as the cult of craniums and the lighting of probable ritual fires (PERINI, 1975: 295-315; NICOLIS, 1996: 338-342). The settlement models show notable capacity for adaptation to the variability of the territory, with sites on knolls, cones, terraces, in rock shelters and pile dwellings in wet areas (MARZATICO, 1992:429,431).

1.2. *The Middle Bronze Age*

Worthy of note is the frequent utilisation during the Middle Bronze Age of sites that had already been occupied in the preceding Early Bronze Age (MARZATICO, 1992: 429, 431), but the quality of the documentation allows the assertion of effective continual settlement only in some cases, like for example at Riparo Gaban (PEDROTTI, 1981-1982) and Fiavé (PERINI, 1994:1035-1047). Perini identified three main layers of the Middle Bronze Age at Fiavé, of which the first two (Fiavé 5-4) are in the area of excavation 2 (PERINI, 1994: 524-635). The typological sequence tells us that the transformation processes from one layer to another always takes place gradually. The affirmation on a statistically large number of innovative elements that mark a new aspect is not sudden and generally correspond to the progressive decline of the forms that were previously fashionable (PERINI, 1994: 1050-1051; FRONTINI & GIANADDA, 1997: 78). Layer Fiavé 4 constitutes the first phase of the Middle Bronze Age – known as formative – which assumes a local connotation (PERINI, 1994: 524-560). Diagnostic elements are carinated cups with axe-like handles attached to the brim and truncated cone shaped small jugs and beakers which, in some cases, also have axe-like handles (MARZATICO, 1991-1992: 38-41; PERINI, 1994: 524-560). Ceramic fragments, probably referable to this layer that signals the passing of the Poladian tradition, were found at the high altitude site at Malga Vacil near Storo and at S.Biagio and Dos de la Cros in Valle di Non (PERINI, 1992: 455; MARZATICO, 1991-1992: 40) Found in the in the same valley and datable to the beginning of the Middle Bronze Age were a sword with a full handle from Dercolo (BIANCO PERONI, 1970: 101, n.275) and an amber necklace from a marsh between Cles and Tuenno that has spacers si-

milar to, even though they are variants due to the different orientation of the perforations, the Kakovatos type that originated in central Europe (MARZATICO, 1997: 454). A series of massive diadems found at Ledro that correspond to the laminar one of Pitten in Austria can also be dated to the beginning of the Middle Bronze Age (RAGETH, 1974: 111-116).

If the layer Fiavé 4 – Middle Bronze Age – constitutes a local aspect with limited correspondence, the next layer, represented by Fiavé 5 – Middle Bronze Age II – is aligned with the expressions of the pile dwelling circle of the Benacense peri-Alpine area (MARZATICO, 1991-1992: 40; PERINI, 1992: 456). Characteristic of this phase are carinated cups with straight walls or cups with biconical walls with swells, fitted with axe-like or expanded handles, in black “buccheroid” pottery (PERINI, 1992: 456; 1994: 561-635). This layer is found in the sequences of Romagnano, Riparo Gaban, Montesei di Serso and in the terrace habitat at Dossi di Vigolo Vattaro where habitat layers bordered by paired post holes were found (MARZATICO, 1991-1992: 42).

The third and last layer of the Middle Bronze Age has as its fundamental term of reference the materials from the habitat Fiavé 6, with constructions built contemporaneously on the banks and on the lakebed on an elaborate lattice protected by the piles (PERINI, 1984: 54-142). The carinated cups, the biconical decorated with furrows and the crescent constitute the emblematic characteristics of Middle Bronze Age III (PERINI, 1994: 815-948), which are also represented in the necropolis at Stenico (PERINI, 1983: 32-40; PERINI *et al.*, 1991: 45-70) and again at Ledro, Riparo Gaban, on the Groa di Sopramonte, Doss Grum, S. Bartolomeo di Ceole, on Dosso Alto di Rovereto and, for that concerning an archaic moment, marked by handles with less developed appendixes, on Dosso di S. Michele at Mezzocorona (MARZATICO, 1991-1992: 42). The elaborate structure of the foundations of Fiavé 6 indicates strong social cohesion for which, in the absence of data regarding the relative necropolis, cannot establish whether and up to what point it was due to strong family ties or perhaps the presence of some eminent figure, if for no other reason other than experience in carpentry or in guiding the construction. The presence of deposits of status indicators, such as amber and gold necklaces, together with funnel shaped pendants (PERINI, 1987: 33, 36, 173-174), which indicate wide-ranging contacts (FRONTINI, 1997: 131), are indicators of the considerable socio-economic development of the community.

The necropolis at Stenico, where a gold spiral was found (PERINI, 1987: 36), informs us about the burial methods which reflect the customs of the cultural sphere of the Trans-Alpine burial mounds, in contrast to the ceramic forms which are clearly of the south Alpine type (PERINI, 1983: 36). It is necessary

to emphasise, faced with the existence of various dating proposals for the Middle Bronze Age (DE MARNIS, 1991-1992: 61-63), that at the present state of research the materials from Trentino, without exclusion, fall easily within the range supported by the Fiavé sequence.

1.3. *The Late and Final Bronze Age*

A new regional layer has been identified during the Late Bronze Age. on the basis of the characteristics of ceramic production (MARZATICO, 1986: 48-50; 1990: 203-205). The ceramic repertoire is exemplified in the sequence of the Romagnano rock shelter, the habitat of Montesei di Serso and by the complex at Dos Gustinacci di Fiavé, in the habitat that is close to the pile dwelling with a construction built on terraces, protected above by dry walls, using techniques already noted at other sites (MARZATICO, 1990: 203-204; PERINI, 1994: 989-1015). The new layer which does not signal a total halt from a settlement point of view (MARZATICO, 1992: 429, fig. 2, p.432), is also documented on the valley floor in the habitat at Nomi Cef, which stands on the muddy sands of the Adige, prepared by the creation of a rectangular stone platform (MARZATICO, 1986: 44-46). The distinctive element is represented by the recurrence of truncated cone shaped vases with outward bended rims, which, in the versions with sharp bends, anticipate the models of the following Luco/Laugen phase A of the XII-XI century B.C. (MARZATICO, 1986: 46; GLEIRSCHER, 1992:120). Rather frequent are crescent shaped handles, with a considerable incidence of the type decorated at the base by appendixes with vertically engraved lines, which have also been found at the foundries of Pletzen/Campivo in the upper Valle del Fersina and Acquaviva at Passo del Redebus where nine ovens in a battery were found. This type has also been found at Riccione (Forlì) (MARZATICO, 1997b: 219-2219). Although there is an evident process of regional differentiation, other types of ceramics show affinity with materials from the surrounding peri-Alpine areas, up to now handles of the straight-cylinder type have not been found (MARZATICO, 1992: 205).

The metallic artefacts of the Late Bronze Age reflect on the other hand the typologies of the central Po Valley area of koinè metallurgy (LUNZ, 1974: 29-38; CARANCINI & PERONI, 1997: 595-601).

The extraction of copper in South-eastern Trentino from the Late Bronze Age to phase A of the Luco/Laugen Culture of the Final Bronze Age (XII-XI century B.C.), saw exceptional growth, based on the intensive exploitation of mineral deposits at medium and high altitude mountain sites (ŠEBESTA, 1992; PERINI, 1989: 380-382; MARZATICO, 1997c: 572-576). Tens of foundry areas and nine ovens in a battery found at Pas-

so del Redebus in the proximity of upper Valle del Fer-sina, at 1445 m.a.s.l., provides an idea of the almost proto-industrial level achieved by mining activity, the results of which can also be perceived in the hoards at: Mezzocorona, Tragno-Crosano at Brentonico, Passo Vezzena, perhaps at Borgo S. Pietro, Strigno, Torbole and Villa Agnedo (LUNZ, 1974: 32-38; ŠEBESTA, 1992; PERINI, 1989: 381; MARZATICO, 1997c: 572). In the sphere of the metallurgical industry of the Final Bronze Age, considered to be an integral part of the central transpadana *facies*, "characteristic and exclusive types" have been documented, attributed to the "Adige group" in which there are manifestations, other than the influences from the surrounding Po Valley area groups, of the transalpine Urn Fields Culture, as indicated for example by the ribbed vase headed pins of Ha A1, the shin guards from Masetti di Pergine Valsugana and the sword with a full cup-shaped handle from the peat bog at Pudro of the X century B.C. (LUNZ, 1974: 32-40; PERONI, 1980: 67-72; MARZATICO, 1997b: 127-128, 250-251).

The spread of offers to the water gods, testified to by this latter find and by other finds that intensify with the Late Middle Bronze Age, coincides with the development of votive bonfires (Brandopferplätze), located on the summit of heights or on slopes and terraces, which were frequented for several phases up to the Iron Age (GLEIRSCHER, 1992: 124). Analogously what was observed by Pauli in the Tyrolean Valley of the Inn and in Valle del Reno, from a population viewpoint in the South Alpine region under examination at the end of the Bronze Age, seems to reflect a demographic increase, probably connected to the exploitation of mineral resources (PAULI, 1992: 743). One notices therefore a marked differentiation in respect to that which occurred to the south in the central Po Valley area, where, after the demographic expansion of the Middle and Late Bronze Ages in the terramare, there follows, from about 1200 B.C., a marked contraction of the population, in particular south of the Po (BERNABÒ BREA *et al.*, 1997: 750-753).

2. ALTO ADIGE (SOUTH TYROL)²

The decision taken by the organisers of the 33th Scientific Meeting of the IIPP to separate the study of the Bronze Age in Alto Adige and Trentino responds to the necessity of a detailed approach to the description and the interpretation of archaeological data, indicating the contemporaneous existence of a rather hazy cultural threshold, depending on the epochs, that separates the territory north and south of the narrows at Salurn/Salorno.

Trentino and Alto Adige, before the affirmation

of the Laugen/Luco culture, or even before its formative phase, saw the occurrence of two culturally contiguous territories, that differed however, by a greater or lesser degree of participation in the formal characteristics of nearby cultures situated north of the Alpine watershed or in the central Po Valley or Lago di Garda area. The data available is presented and discussed in this work in an essentially thematic manner. It was felt that in this way it would be easier to focus the critical aspects and tasks of research into the areas identified: chronological and cultural setting, settlements and settlement systems, economy and use of the territory, burial grounds and places of worship (and in a broad sense, "festivals/manifestations linked to religion"). As data regarding burial grounds in Alto Adige is particularly scarce, the information regarding the social structure is as a consequence very limited and mostly inferred from the study, which is also in truth at an initial stage, of the settlements and settlement systems/models.

2.1. Chronological and cultural setting

Radiometric dating available for the second half of the 3rd millennium B.C. has for the moment been carried out at only three sites: the first, known in literature as Piglonerkopf (OBERRAUCH 1997, 2000; RIEDEL & TECCHIATI, 2000), is situated on Mitterberg/Monte di Mezzo in the Adige Valley; the other two, Feldthurms/Velturmo, Loc. Tanzgasse³ and the "castelliere" Nössing at Vahrn/Varna (see TECCHIATI, 1998a) which is situated in the Isarco Valley. The first case is a rock shelter in which at least the most recent phase of occupation, which is the one that has been radiocarbon dated, must have been religious in character, as shown by the particular composition of the fauna, which is normally burnt and meticulously broken up, and especially by a hoard of 3 miniature copper eye axes. Radiometric dating carried out at ETH in Zurich on several of the pieces of charcoal attached to the oxidation on two of the axes (ETH 21817: 2586-2281 BC; ETH 21818: 2703-2466 BC) date the deposit to around the middle of the 3rd millennium B.C. which coincides with the appearance in the region of the bell shaped type forms.

The site at Velturmo also presents a complex situation that is eminently religious, even though it is structurally very dissimilar to that of Piglonerkopf, and dates to between the third quarter of the 3rd millennium, and is culturally contiguous to the appearance of the Bell Beaker culture. At the moment two radiometric datings are available, again carried out at the same laboratory in Zurich, regarding charcoal samples taken from two distinct cuts (one high and one low) of a stratigraphical unit that has been recently interpreted as the layer of a settlement that preceded the establish-

ment of the monumental structures: 2579-2278 BC, and 2619-2392 BC. These datings must be considered as a broad *terminus post quem* for the beginning of the Bronze Age. Following the formation of this level at Velturino, the monumental structures develop and their continuation almost up to the earliest moment of the Early Bronze Age⁴ seems to be documented by the occurrence of jugs with sack shaped bodies and distinct necks, similar to those documented, for example, in the Vela Valbusa (see FASANI, 1988) burial grounds in Trentino – by some authors attributed to the initial stages of the Early Bronze Age – and other contemporary sites in the region.

An interesting series of radiometric datings comes from the stratigraphic series at the Nössing habitation that is situated on a rise⁵. This small fortified village was excavated in three separate campaigns by the University of Padova during the second half of the sixties (for the research carried out during the sixties by the University of Padova see POLACCO *et al.*, 1967, 1968/69, 1973/74. See with earlier bibliography, TECCHIATI 1998a). The settlement must have been continuously occupied from the earliest stages of the Bronze Age up to a full but not evolved period of the Middle Bronze Age.

With the exclusion of sample 6 that was taken from a basal level in contact with the sterile layer and documents a not better definable period of occupation of the site during the full Copper Age, the datings refer to a long period of time that comprises 2205-1918 (sample 8, from a basal level of the fortified wall structure at a depth of -250 cm) and 1780-1518 (sample 3, in association with a Horkheimernadel). However, the dating of sample 7 would seem to be unreliable, at least at its lower limits. This sample was taken from a level in which the typology of the pottery cannot exceed the limits of a non-advanced period of the Middle Bronze Age. Several problems were posed by the radiometric dating carried out by the laboratory at Cambridge-Massachusetts on a sample of larch charcoal from the fortified habitation at Sotciastel in Val Badia, which I mistakenly published⁶. This calibration gave a

dating that is considerably older than that initially expected, and one that seemed useful for the definition of the chronological threshold existing between the Early Bronze and Middle Bronze Age. By using the calibration tables drawn up by Stuiver & Becker (1996) the conventional radiometric dating (3620±80 C-14 years BP, C-13 corrected), is situated within the following time span: 2043-1885 BC (65%) with 1s; 2210-1750 BC (95%) with 2s.

This time span regards a somewhat initial stage of the Early Bronze Age, at best the full Early Bronze Age. However, it is not easy to identify in the documentation at Sotciastel an horizon, pottery for example, that can be referred to the earliest aspects of the Early Bronze age with any certainty, while also for “enigmatic objects” there seems to be no compulsory reasons for their attribution to Early Bronze Age. If we wanted to establish a date for the tablets from Sotciastel based on their typology, we have to note that they are very different from that of the examples at Nössing, found at a level that radiometric dating places in the Early Bronze Age (see the dating of sample 5 in Tab.1). As recent research (see TECCHIATI, 1998c) indicates, the presence of pottery elements in the Sotciastel habitation, that in south-western Switzerland mark the late phase of the local Early Bronze Age, unless this is a macroscopic case of formal convergence, the establishment of the village towards the end of the Early Bronze Age would seem to be almost certain. This chronological digression provides a measure of the uncertainty research into the beginning of the Middle Bronze Age in Alto Adige finds itself, even if there is obviously no particular reason to believe that in the territory analysed here, the Middle Bronze Age started at a different time to that of the surrounding Alpine or Po Valley areas.

As the threshold must have also been above all cultural, the problem, which does not particularly regard the Middle Bronze Age, is more one of understanding the real historical significance of the local facies of the Bronze Age in relationship to the cultures that developed to the south and north of the Alpine water-

Sample N°	Laboratory N°	Age AMS-14C [y BP]	d 13C [0/00]	Calibrated age [BC/AD]
1: 1352	ETH 22215	3575 ± 60	-20,8 ± 1.2	BC 2040-1744 (97,1%)
2: 1091	ETH 22216	3515 ± 60	-18,6 ± 1.2	BC 1973-1683 (100%)
3: 406	ETH 22217	3385 ± 60	-20,9 ± 1.2	BC 1780-1518 (96,0%)
4: 740	ETH 22218	3485 ± 60	-21,0 ± 1.2	BC 1944-1671 (97,9%)
5: 852	ETH 22219	3560 ± 55	-20,0 ± 1.2	BC 1990-1742 (93,8%)
6: 915	ETH 22220	4065 ± 60	-22,1 ± 1.2	BC 2703-2461 (77,7%)
7: 142	ETH 22221	2990 ± 55	-21,4 ± 1.2	BC 1325-1035 (91,6%)
8: 316	ETH 22222	3700 ± 55	-21,5 ± 1.2	BC 2205-1918 (97,5%)

Tab. 1- Radiometric dating available for the Noessing habitation situated at Novacella (Com. Di Varna).

shed. It would not be easy, at the present state of our knowledge, to attribute the local facies, with any certainty, before the affirmation of the Luco Culture, to this or that Culture..

The Polada Culture seems to have been lived in a very marginal manner by the communities in Alto Adige, even though in the pottery assemblages from the Early Bronze Age, where they have been studied, there is no lack of formal elements, e.g. the holed brims or elbow shaped handles - which in the case of Alto Adige must be considered to be of Poladian descent, if for no other reason due to geographic adjacency with the manifestations of nearby Trentino - that show, even in their numbers, their in some way intrusive character. The geographic distribution of these aspects is somewhat widespread, even if only restricted to the valley floors of the main rivers, but seems to concern the middle and lower Venosta Valley in particular, with possible, less known extensions to Oltradige and lower Atesina. The Isarco Valley assimilated these influences in a dynamic manner at least up to the Brixen/Bressanone basin, while in the Pusteria Valley they seem not to have gone past the limits of St.Lorenzen/San Lorenzo-Bruneck/Brunico. It is probable that, by having a certain number of sites in which to gather data regarding the transition from the Late Copper Age to the Early Bronze Age, everything that seems in some way referable to the influence of the Polada Culture (e.g. the characteristic jugs, or also a crude production destined for foodstuff storage) could more easily be attributed to the "bell-shaped" substratum, comprising in the first place - and whether the bell-shaped beakers are present or not - the *Begleitkeramik* and that, made more mimetic by its long duration, of the "traditional" pottery production of at least Late Neolithic descent. In other works I have stated that Alto Adige forms part of the area of the so-called *Inneralpine Bronzezeitkultur* (= Inner Alpine Bronze Age Culture, from now on referred to as IBK). It would appear that the definition of this culture is somewhat in a state of crisis in the same geographic circles of those who first theorised it (see for example, RAGETH, 1986 with preceding bibliography) and at least in the subject area of this contribution, the IBK seems to be an attitude to the dynamics of inter societal exchange and cultural transfer rather than a true archaeological facies. Also recognisable is the historic role attributable to the Alpine communities of the Bronze Age, as a bridge between different worlds, north and south of the watershed, in which reciprocal interests in trade and communication do not end in the (mining -) metallurgical sphere, but may have involved other areas that are not necessarily recorded at an archaeological level (see TECCHIATI, 1999a).

How these intercultural relations could have taken place is sufficiently exemplified by the cases of Nössing for the Early Bronze Age and Sotciastel for

the Middle Bronze Age. Nössing, as noted, is a habitation located on a rise with fortifications ("Abschnittswall") of controversial⁷ chronology. It was explored in the sixties by the Institute of Archaeology of the University of Padova⁸. Study of the cultural characteristics shows how there are appreciable broad "Poladian" influences, especially with regards pottery, while the contribution from north Alpine cultures (Oberrhein/Hochrhein and Singenergruppe, the Straubing Culture and, later, the Late Arbon and Straubing Culture) appears to be greater than in other contemporary contexts in the AltoAtesina area.

At Sotciastel, in contrast with its apparent geographic marginality, the material documentation describes a community that was able to engage in relations with both the Trentino-Benacense and Po Valley, shown in the shape of the handles with axe or horn shaped appendages, and in certain metal products from the late Middle or the beginnings of the Late Bronze Age, from the Peschiera area; and the north Alpine world of the Mound Culture.

Until the beginning of the Late Bronze Age, simultaneously with the affirmation of the Gustinaci facies, Alto Adige seems to gravitate further into the circle of IBK, with weak sub-Apennine type influences that probably came, along the Adige River, from south west Veneto or from the Plavense piedmont. At the beginning of an evolved period of the Late Bronze Age the homologation of the whole region to the Luco Culture standard takes place. Just how much Late Bronze Age communities in Trentino interacted with communities in Alto Adige, thereby establishing the cultural conditions necessary for the beginnings of cultural connexions of local extraction, is testified to by a small but very interesting pottery hoard found near Stallerhof, above St. Jakob/San Giacomo in the Bozen/Bolzano basin, recently published by Lunz (2001b). Apart from the possible religious character of the site, the chronology of which may not even coincide with that of the pottery, the fictile collection seems to belong to the Gustinaci facies. Extremely suggestive is the presence of a simple eye handle with a small expanded cylindrical appendage that even if it cannot be defined as a "straight-cylinder" on the basis of sub-Apennine models, for example from Veneto, the sub-Apennine model was certainly copied - although rather badly. The case of the pseudo-straight cylinder at Stallerhof introduces, on one hand, the subject of men and goods sailing up the Adige, that was navigable almost up to the Bolzano basin, to which it would be useful to return, and on the other hand the problem represented by the occurrence of pseudo-straight cylinders at Barbian/Barbiano - Gostner⁹, Sotciastel (see TECCHIATI, 1998, tab.), Eppan/Appiano (see LUNZ, 1990). The embarrassment with which one generally looks at these occurrences is in part caused by the fact that the strati-

graphic context is never as clean as one would like, and also by the fact that typologically these straight cylinders are very different from possible starting models. Evidently the circulation of cups with handles with raised appendages have many possibilities for changes so that “at the end” the characteristic aspects appear very different from how they were at the beginning. In all probability one may think that the tenuous spread of aspects of “southern” extraction originating from Veneto along the Adige waterway reflects the spread, up to the Verona area (VAGNETTI, 1996), of exotic products that are definable, in a broad sense, as “Mycenaean”. A weak, but in my opinion unambiguous indication of this is provided by a fragment of an elephantine ivory pin found at the habitat at Appiano-Giardineria Gamberoni (see LEITNER, 1988), while also the importance assumed between the Late and Final Bronze Age by the production of ornamental objects in glass and bone goods and especially in horn would seem to be a response to new demands for distinction by local elites. This could also be true of the predilection for products from the metallurgical circle of Peschiera, Salorno-Dos de La Forca (DAL RI & RIZZI, 1987/88), Appiano-Gamberoni¹⁰, Siebeneich/Settequerce Via Steuer (see BOMBONATO *et al.*, 1997) and at earlier times at Sotciastel¹¹.

While the legacy that the Luco Culture received from the local Late Middle and initial Late Bronze Age is recognised today, not all authors recognise that the formation of the culture had reached full completion before the end of the Late Bronze Age, by not placing the origins in Ha A1. Numerous elements, that have already been highlighted by others, show, however, that the Luco Culture must have had quite a long apprenticeship, as indicated by the notable level of standardisation of the cultural material and the quality of the pottery production that signals a very clear cut caesura with the preceding artisan tradition, with reference not only to the shape of the vases but also, and above all, to the care taken in moulding and firing.

2.2. Settlements and settlement systems

Much of the documentation regarding the inhabitants from the Bronze Age refers to villages situated on the tops of hillocks, enclosed by walls or barricades, or made easily defensible by the nature of the location¹². However, the communities of that time, as previously, knew how to occupy very different geographic and ecologic environments, such as slopes or cones close to the valley floor, medium altitude orographical terraces, fluvial terraces and the banks of lakes or wetlands. The variety of settlement choices responds in part to the capacity of economic exploitation of diverse and complimentary natural resources,

probably also as the result of a certain demographic effervescence, and in part, as mentioned, due to the necessity to control the most important roads. Several authors speak of compulsory environmental causes that led to the obligatory occupation of the morphological heights (for example MARZATICO, 1992). It would appear to me that the terms of the question should be placed into a more dynamic framework, in which a fundamental role is played not only by phenomena of adaptation, but also by the expression of precise options that were economically and culturally determinant factors in the strategies adopted for the survival of each community.

In the Early Bronze Age the hillock occupation model and that of “Inselberge” seems to be prevail, but there are also cases of habitats very close to the valley floor (cf. Narturns/Naturno, situated at the confluence of the Senales stream and the River Adige¹³; see DAL RI & TECCHIATI, 1995; RIEDEL & TECCHIATI, 2000). From the current state of research it would appear that in the Middle Bronze Age limited structuring experiments took place on alluvial cones in the form of terracing, as is the case at Margreid/Magré-Tolerait (see DAL RI, 1975; DAL RI & TECCHIATI, 1991/92), while there was an affirmation of habitats on rises with fortifications. The oldest fortified structures that can be dated with any certainty, at least at the present state of research, belong to the Middle and Late Bronze Age. In the cases studied, Sotciastel and Noessing¹⁴, the erection of barricade walls did not take place with the first phase of the site’s occupation, but in general occurred at a more advanced stage in the life of the habitat, which demonstrates that the character of the need for defence must have been different depending on the epoch, and that also “superstructural” reasons, like for example the exhibition of community status, may have played a very concrete role. The villages at Sotciastel in Val Badia and Albanbühel in the Bressanone basin certainly merit a brief mention due to the emblematic character they represent.

The Middle and Late Bronze Age village at Sotciastel occupies the flat peak of a hill that dominates the ravine of Rio Gadera in Alta Val Badia. On the eastern side the habitat was defended by a wall, which was 69 metres long and up to 4 metres wide. Wooden huts were located both inside and outside the defended area. Material remains document a variety of artisan activities: metallurgy, weaving, vase making, bone and horn working. The economy was based on the cultivation of barley, various types of grain and legumes; the gathering of edible fruits that grew naturally around the area of the village (see OEGGL & SWIDRAK, 1998) and ox and goat/sheep raising (RIEDEL & TECCHIATI, 1998). Hunting made no contribution to the economy.

The Middle Bronze Age habitat at Albanbühel (DAL RI & RIZZI, 1991/2; RIEDEL & RIZZI, 1995) (al-

though it would appear that the site was already settled during the Early Bronze Age) was defended on two sides by a ravine and by the steepness of the slope. The more assailable sides that were fortified by a wall – ditch system that surrounded a protected area destined for housing. Three of these wooden buildings were in a line and had paving that was partially set into the slope, with a suspended part made of planks that covered a lower room that was perhaps used for storage or as a stable. Four other isolated buildings were situated within the defended area. The peak of the hill, which was perhaps defended by its own wall, could also hold a hut.

In the Late and Final Bronze Age, next to the habitats situated on the sides of hillocks (see for example Latsch/Laces-Annenberg, DAL RI & TECCHIATI, 1995), there were true valley floor habitats (Bressanone-Cassianum) or ones that were very close to the banks of the Adige (Pfatten/Vadena; see DAL RI, 1992; LUNZ, 1991, 1992) which poses the problem of the diversification of traditional settlement models in the advanced second half of the 2nd millennium. This is joined by the habitats on slopes (Bressanone—Via Monte Ponente, see RIZZI & TECCHIATI, 1997) that are close or very close to the valley floor, and the habitats situated on medium altitude orographic terraces (cf. Velturmo)¹⁵. With regards the location of these villages, it would not be wrong to consider the transformation of base models that were strategic-defensive, seen more in earlier phases, towards models that exploited the close proximity of the main waterways or access to the areas for the exploitation of marginal resources (high pasture lands, mineral areas etc.). It can be observed that the apparent decline of strategic and defensive models in the late phases of the Bronze Age could have coincided with the formalisation of better structured and more acceptable geopolitical systems at an intercommunity level, that may in turn lead to the assumption that the overall situation that was less competitive with regards the management of spaces and territorial resources. A very concrete example of this is provided by the Natz-Schabs/Naz-Sciaves plateau and Elvas, a vast geographic unit situated between Rienza and Isarco, immediately north of Bressanone¹⁶, where during the Late and Final Bronze Age there was an exceptional increase in the density of sites. Clearly this points towards a phenomenon of selection and concentration of the habitat, documented by the vitality of the Luco community, destined to almost disappear at the beginning of the Early Iron Age, and then later recover with renewed strength at the beginning of the Rhetic period. The structure of this vast habitat, which we can imagine as a scattered agglomerate with agricultural plots and ergological areas interrupted by dense housing, required the construction of terracing, sometimes consisting of the alignment large sized boulders in which it is easy to recognise the product of a collective effort and the rea-

lization of “town-planning”, that was neither accidental nor improvised.

The excavations carried out in the nineties at Mals/Malles in Val Venosta (fondo De Stefani, see BOMBONATO, 1997) also seem to indicate the progressive formalisation of a housing plan, with rectangular houses situated orthogonally between which there is a road grid. The phenomenon would seem to be of great geographic significance, as demonstrated for example by the research in the habitat – contemporary and culturally more than just similar to the Luco Culture – of Calcinato-Ponte S. Marco in Breda (see POGGIANI KELLER, ed., 1994). To integrate the data from the excavations at Malles it is worthwhile summarising the situation of the Eppan/Appiano habitat, Siechenhaus (Gardineria Gamberoni, see LEITNER, 1988; DAL RI, 1990) where this component of the structuring of settlement community space is easily recognisable. The village of Appiano was founded by the first people of the Luco Culture. It stretched over an area of one and a half hectares on several terraced levels. It was situated on the gentle slope at the foot Castel Guardia hill range in Oltradige. Habitat layers, quadrangular hearths, dry walls used for terracing or supports for wooden pillars and postholes that were deeply excavated into the sandy subsoil form part of a wooden hut that perhaps had a double sloping roof and clay plastered walls. A canal consisting of two long dry walls brought stream water. Its good exposure, light soil suitable for agriculture and its proximity to the important Adige waterway, are perhaps several of the reasons that led to its foundation. A multiplicity of economic and artisan activities characterised a village in the productive activities, that is agriculture and herding, play a primary role in a fully self-sufficient community. Ox and goat/sheep raising were prevalent. Domestic artisan activities included weaving and specialised craftsmen manufactured pottery of high quality and form. Stone casting moulds document the in place production of metallic artefacts. Territorial type research into the existence and significance of economic and political settlement systems in the area that is subject of the present study is quite recent.

In the past particular attention has been placed on the topography of sites, their position and their distribution in each single geographic district identified by the so called “Wallburgenforschung” of which G. Innerebner was a meritorious pioneer and promoter¹⁷. The limits of this research, that have already been highlighted by others (see SCHUBERT, 1991), would be perhaps better historicized and understood in light of the evolution of the discipline and the questions that territorial type research is asked today. On the other hand without that intense work of territorial prospecting we would not have the information necessary to recognise in the crowding together of sites in areas that are often very small, a precise “political” choice for

the purposes of defence and management control of the area.

The existence of "clustered" settlement systems, - be they vertebrate or invertebrate - seems to be completely plausible in the Bressanone basin¹⁸ and in that of Brunico-San Lorenzo (see for example LUNZ, 1977)¹⁹, both of which are, significantly, situated at the centre of important water and road crossroads (Rienza-Gaderra; Rienza Isarco), while this has yet to be better illustrated in the case of other basins (c.f. for example Meran/Merano). One case of great interest is represented by the Sterzing/Vipiteno basin (see FLECKINGER, 1995), although the settlement evidence is not as strong as in the cases already mentioned. With regards the Bolzano basin (confluence of Talvera-Isarco-Adige) the formation of a settlement system does not seem to have been completed much before the Early Luco Age, and therefore does not have those invasive characteristics, or rather topographical transversal characteristics in respect to the basin²⁰ that are one of the main characteristics of population during the Bronze Age in the area of Bressanone and Brunico-San Lorenzo. During the earliest phases of the Bronze Age the occupation of hills such as Castel Firmiano (BONFANTI, 1985) or the Guncina hills (LUNZ, 2001a; OBERRAUCH, 1967) or at a later time the already mentioned Stallerhof (LUNZ, 2001b) seems to have taken place in a manner that was unconnected to any form of collective "project" for the management and defence of the area. This possibly implies a situation of low demographic density, or, but less probable, due to reduced possibilities for the exploitation of primary resources (agriculture, herding).

The existence of the settlement system in the area known as "sacro angolo" (at the foot of Tschoeggberg-Monzocolo, between Moritzing-San Maurizio, Schwefelbad-Bagni di Zolfo and Siebeneich-Settequerce) was certain in the Iron Age, when it assumes, at least within the limits of the functional complexity manifested by the sites as a whole²¹ - a character that in a broad sense is proto-urban²². It is very probable that this system had its origins between the Late and Final Bronze Age²³. Almost all the sites show evidence of being first occupied during this age, with traces of significant exploitation work in the territory²⁴, but it would seem that the reasons for the success of the settlement in the Second Iron Age are quite contingent even if they are not very short-lived. In any case with the event of Romanization, and therefore in less than four or five hundred years, this system collapsed without leaving a trace practically up to our times. This system was configured as a series of aligned sites at the base of a mountain, which leads one to believe that originally they marked a path situated between them and the left bank of the Adige river, the importance of which grew, or manifested itself for the first time, starting from the 5th and 4th century B.C.²⁵

The description and definition of Altoatesino settlement systems which, together with the long continuity and stability of the settlement, also seems to be in Alto Adige the most important and enduring conquest of the Bronze Age, is only at the beginning. It is important to emphasise that the analysis of settlement systems is closely tied to the analysis of the dynamics of territorial management and exploitation of relative resources. From this point of view, the analysis of settlement systems responds to a need to understand the economic structures and therefore the social structures that shaped communities in the local Bronze Age.

2.3. *Economy and use of the territory*

The study of settlement systems, as described above, involves the detailed interpretation of natural evidence and territorial modelling phenomena that was carried out in order to use or exploit environmental resources. This interpretation is also at an initial stage.

Archaeozoological evidence, to which A. Riedel is particularly dedicated, has been studied at several important sites: Sonnenburg (RIEDEL, 1984), Albanbühel (RIEDEL & RIZZI, 1995; RIZZI, 1996/7), Sotciastel (RIEDEL & TECCHIATI, 1998), Nössing (RIEDEL & TECCHIATI, 1999), Vadena (RIEDEL, 2001)²⁶ and Appiano-Gamberoni (RIEDEL, 1985). Small, but suitable for the description of the situation of a site with a marked pastoral vocation, is the allotment at Naturno-Schnalserhof (RIEDEL & TECCHIATI, 2000a). The main characteristics of the cattle raising economy in the Bronze Age have been known for some time and can be roughly summarized as very poor compositions of wild animals and pigs that, butchered at a relatively young age, played a subordinate economic role, with evidence that rarely exceeds 10% of animal remains. There is a generalised prevalence in the amount of remains, of goats/sheep, abundant oxen that are normally prevalent only in terms of weight. Slaughtering was distributed quite equally in the various age classes, with evidence that shows, for the younger age classes, generalised difficulty in breeding that is characteristic of primitive zootechnics and, in the case of more mature age classes, attention to the reproduction and exploitation of secondary products of oxen (milk) and goat-sheep (milk, wool). Shepherding and herding is consolidated in the Bronze Age, with the systematic visiting of high altitude pastures. By the Early Bronze Age, hunting is an occasional activity, connected to the defence of cultivated land or reasons other than that of finding food. This behaviour, which must have been accompanied by great efforts in agriculture (c.f. the data from Sotciastel, with a prevalence of barley and the presence of monococcum, dicoccum and legumes that included *lens culinaris*), constitutes one of the main aspects or effects of settlement

stabilisation. The long duration of the habitats and the presumable demographic expansion due to the greater availability of resources brought about by the progressive agricultural work carried out on ever growing portions of the territory, must have led to the colonisation of areas that were earlier considered to be marginal (c.f. the case of Sotciastel in upper Val Badia).

The structure of the animal populations cannot be considered to be accidental, as it responds in terms of suitability to the characteristics of the territory (nature) and the precise economic vocation that each community elaborated within the framework of their survival strategies (culture). This subject is fully covered elsewhere in this work (RIEDEL & TECCHIATI, 1997 and this work).

The spread of the plough and metal instruments for tree cutting and tillage, together with slope terracing in the Bronze Age, led to the acquirement of large tracts of agricultural land. With regards the settlements we only have the data from Sotciastel, already summarised above, which can in some measure be considered paradigmatic of the Altoatesina situation, even though the relatively high altitude (1400 m above sea level) may have in some way affected the number of wild or cultivated plants. The greater availability of food favoured by advances in agriculture must have resulted in a notable increase in the population which is also reflected in the foundation of villages, like Sotciastel, in the more interior areas.

Numerous sporadic finds, mainly concentrated on high peaks, in the vicinity of passes or in lakes, ponds, marshlands and rivers, further document a widespread presence of man in the Bronze Age at altitudes that are apparently unrelated to the usual human settlements, for reasons that we can consider ergological and or religious. The combination of the two aspects must be seen in the *Brandopferplatz*²⁷ at the end of the Bronze Age at Seeberg in the Sarentine Alps, where together with layers of calcined bones and tens of broken containers, fragments of fusion slag were found that are identical to other finds in the very close foundry site of the same age (see NIEDERWANGER & TECCHIATI, 2000 with previous bibliography)²⁸.

With regards to mining activities, which especially in the Late Bronze Age in Alto Adige must have been very intense, as they were in Trentino, the material data available are mainly the products of foundry work (slag) directly connected to the activity of reduction of the mineral (especially chalcopyrite) to semi-processed copper and tools, such as saddle shaped mineral grinders, strikers and small grinders which normally used for the preparatory breaking of the mineral before it is washed and concentrated (roasted). If these latter are normally found outside settled areas or just outside the mines²⁹ or in any case in the vicinity of the first point of mineral transformation which, as we know,

may or may not have been close to the mine and depended on the availability of wood for burning. Slag, especially the thin and flat type, is found in a multiplicity of sites that are functionally distinct. While it is not lacking in mining areas, it is also found, at least in one case, in association with religious activity remains, such as at Lago Nero in the Sarentine Alps (Seeberg) and above all, quite frequently, in habitat contexts. The occurrence of foundry slag connected to the primary transformation of minerals is not surprising in ergological areas, where they are essential indicators for the identification of the functional nature of the site, nor in the place of worship at Seeberg, which is only a few minutes walking distance from the contemporary foundry area at Knappenbach-Rio dei Canopi. However more difficult to explain is its presence in habitats, especially where one considers that its recurrence in villages establishes its roots in the "prehistory" of mining activities (compare the presence of foundry slag at Velturmo in US 32a, or in the "habitat" layers of Riparo del Santuario at Lasino, TECCHIATI, 1990/91). The always small amount of this slag would seem to exclude that it refers to work carried out in ovens inside the habitats. This presence presupposes at least a minimum amount of contact with groups of miners or a segment of the community that lived there but were involved in mining activities. Whatever the case the intrinsic significance of this presence is difficult to explain. From a chronological viewpoint, the appearance of this slag coincides with the affirmation of the Luco Culture and, downwards, does not seem to go beyond the limits of the Final Bronze Age. Just how much influence the management of mining activities by several communities, especially those concentrated on the plateau of Renon and middle of Valle d'Isarco, had on forms of centralization of power and wealth can only be imagined. From this point of view the self-representation of Luco communities through the phenomenology of religion and funeral rites is much less suitable for the description of any historical processes of strong internal hierarchization founded on "wealth"³⁰.

Leaving aside "indirect" evidence of foundry activities more closely connected to mineral transformation processes, worthy of note are the foundry installations (furnace batteries) at Fennhals-Favogna that are widely known in literature (HAUSER & NOTHDURFTER, 1986). It should not arouse wonderment that also in this case the ovens are situated in an area that has no mineral resources, but one thing that is of great interest is their possible chronology. The associated pottery without doubt precedes the formative phase of the Luco Culture and probably dates to the (late) middle Bronze Age, even though there is an absence of pottery indicators that could allow one to declare it with any certainty.

It is possible that metallurgical production (moulds for axes) was perhaps exclusive only to some settle-

ments within the framework of a settlement structure on a parenteral and functional basis (c.f. the Bressanone basin (see the mould at Albanbühel, DAL RI & RIZZI, 1991/92) or the area of Brunico-San Lorenzo)³¹. However the case of Sotciastel would seem to orient its interpretation in the opposite direction. It is possible that the impression of rarity of the evidence of metallurgical production is the result of the scarcity of systematic investigation, on the other hand one should reflect upon the different significance, and the different “political” weight in respect to the reference settlement system, which could have had a site solely dedicated to the fabrication of metal objects and a site in which productive activities were carried out by itinerant blacksmiths³².

Flint and polished stone deserve a separate discussion. Polished stone artefacts, mainly small axes, but also polishers used in *ceramurgia* seem to have been created using locally mined rock (c.f. for example, the serpentine at Valle Aurina). These document the occurrence of the interruption of those relationships with the western Alpine area that during the course of the Neolithic also brought to Alto Adige stone artefacts of exotic extraction. In the case of flint the traces of in place working, which presupposes the importation of semi-finished pieces (nodules and cores) from other areas (Trentino, Monte Baldo, Monti Lessini), still perceptible in the Late Copper Age (Piglonekopf, Veltuno-Tanzgasse), became already in the Early Bronze Age, very weak and faded (Noessing) and very soon the problem is posed of probable phenomena of the circulation of only finished artefacts (essentially reaping hook elements and arrowheads) that in the Middle Bronze Age (Sotciastel) can be considered to be certain. The rapid decline in the use of flint, which was exceptional if one compares it to the nearby Trentino, is a complex phenomenon in which the growing importance of metal and the fact that it was easier to find could have played a decisive role, such as in the interruption or at least the slackening of trade with the mining areas (especially Monti Lessini) for historical reasons that merit being investigated on a wider geographic scale (AAVV, 1997). In other publications I have referred the causes of this phenomenon to a simple principle of “Selbstversorgung”³³ or to the self sufficiency of local communities that also led to the increase in value of artisan divisions that are not well known to us (bone-horn, wood, etc.), although it must be projected onto an economic and intersocial relationship background that do not obviously end in a single habitat or in the choices made for survival by each single community.

Pottery and weaving must have characterized the domestic activities of each habitat, even if the standardization of Luco pottery and the high technical and formal quality suggests, in my opinion, the existence of workshops responsible for the spread and, in a certain

sense, the imposition of models that could spread over a wide ranging area (see STAUFFER). The generalized importance of sheep raising, even in areas that were not particularly suitable, probably marks phenomenon of the fleece for the making of woollen cloth. Spools with often decorated expanded heads, that appear for the first time associated with Luco pottery, are also connected to domestic spinning activities.

A division of craftsmanship that was on the rise in the second half of the 2nd millennium is that regarding vitreous materials. From the oldest and most sporadic evidence of Sotciastel to the more frequent occurrence in the burial-religious site of Salorno-Cava Girardi (DAL RI & RIZZI, 1987/88)³⁴ the significance of the artefacts in vitreous material, in the form of pendants for necklaces, is associated, on one side, to religion, and on the other to manifestations of status. This affirmation is even truer if one considers that, at Salorno, vitreous materials are associated in the same deposit to refined pottery products, thin gold threads, amber and fine bronze jewellery products. The fact that local production cannot for the moment be proven underlines even more the significance attributed here to vitreous products³⁵. Other artisan divisions, like for example stone working (for grinding, clubs, weights etc.), that of bone and especially deer horn await better study, especially with regards reciprocal necessary relations.

2.4. *Burial grounds and places of worship*

Funerary documentation is very scarce throughout the Bronze Age. The oldest evidence of this type is a fragment of a cranium that I recognized amongst faunistic remains collected in the sixties in the “castelliere” Noessing. The level it came from was dated to the Early Bronze Age³⁶. The find probably formed part of the secondary burial or perhaps better still that of the phenomenon of the manipulation of skeletal remains, in which the selection of craniums (“cranium culture”) and long bones are the aspects that have been best documented. The find at Noessing forms a pair with that, a little more recent, dated to the Middle Bronze Age, found in the habitat levels of Albanbuehel³⁷. No tomb or burial ground in a real sense is known of for the Early and Middle Bronze Age, while one site, Welsberg-Monguelfo in Val Pusteria (LUNZ, 1977), belongs to the Late-Middle Bronze Age.

One may hypothesize that also the burial of cremated remains in a truncated conical urn from Sigmundskron-Castel Firmiamo in the Bolzano basin, recently published by Lunz (2001c) can be placed in that chronological zone which, between (the advanced) Middle Bronze Age and Final Bronze Age, saw the appearance of cremation rites also in other areas of North Italy. If the form of the recipient is absolutely generic and of

little use in defining the chronology, the mixture and treatment of the surface do not in anyway lead to the products typical of the Luco Culture. An unequivocal dating of this burial in a phase before the affirmation of the Luco Culture, and anyway in the Bronze Age, would not take into account that phenomena of this type are traditional in the prehistory of the upper Adige basin, as demonstrated by the already mentioned religious site at Velturmo and the small Late Neolithic burial ground at Barbiano-fondo Gostner³⁸.

With regards the funeral customs of the people of the Luco Culture, until recently the only information available was that relative to the Kortsch-Corces burial ground (DAL RI & TECCHIATI, 1995), which today is joined by the data, currently in the course of being published, from a grave that was excavated in 1983 at Barbiano in lower Val d'Isarco³⁹. Almost definitely connected to a place of worship centred on funeral practices, is also the already mentioned site at Salorno – Dos de la Forca, for which, however, funerary type evidence (cremated bones that are not only human) have not yet been subject to a detailed study.

At Barbiano the deposit in which the human remains were found is a carbon layer noted on one of the sections of an excavation. This level could have originally been the filling of a shallow grave, the shape of which was approximately circular, and the height of which could mean that it might have been of the "tumulus shape" type. The human skeletal remains, studied by Silvia Renhart, refer to a cremated male adult, aged between 31 and 50 years. The heat of the fire must have reached 550 degrees Celsius. Mixed with the human remains were the cremated remains of unidentifiable animals, which were perhaps burnt together with the body of the dead man in the guise of funeral offers.

The archaeobotanical analysis carried out by E. Castiglioni on a few burnt remains (charcoal and seeds/fruit) evidenced the presence of log fragments (the presence of thin branches was excluded) of species suitable for combustion and the maintenance of heat in a funeral pyre: larch, hazel, alder, oak. Also present were *Pomoideae* (apple/pear/hawthorn) and red and white pine. Amongst the fruit, which like the animal skeletal remains, must have been already on the fire, there were small spelt, spelt, not better identified wheat, and cultivated flax – never before documented in funerary contexts of this age, at least not in North Italy, and roses. These two latter possibly have a symbolic and medicinal significance. The material culture includes pottery remains that are characteristic of Phase A of the Luco Culture, a fragment of a small tube and a fragment of a wide ring, both made of bronze. Pottery remains from the same age contained in deposits that cover the grave leads one to believe that other remains from the end of the Bronze Age, which may also be part of a larger

funerary context, may be found above the burial site described here.

In a position that was functionally intermediate between a Brandopferplatz place of worship and a funeral site is the site at Salorno-Dos de la Forca.

This site is situated on the hydrographical left of the River Adige in the comune of Salorno⁴⁰, in a gravel quarry. It was found in 1986 at the foot of an alluvial cone that is up against the rocky walls of the mountain. It is about twenty metres from the Brennero State Road. During the course of the following year the Soprintendenza Provinciale di Beni Culturali di Bolzano ordered the archaeological excavation in an area partially damaged by mechanical diggers that had dug a large hole destined to become a rubbish dump. Of the four sections in view at the time of the intervention, the southern section, with regards that concerning the alluvial cone, contained the best conserved stratigraphic sequence.

In this sequence there were at least eight episodes of stratified deposits above the most recent anthropic layer (US 10), which document the progressive degradation of the slope after the abandonment of the site by man. The stratigraphic episodes are substantially similar and it is difficult to distinguish one from the other. These are sediments that were originally sparsely vegetated and originate from the flow of water, with the consequent transport of coarse gravelly material. Above the original sequence there was deposited not less than two metres of modern detritus connected to the quarry's industrial activities. In the stratigraphic sequence the highest anthropic layer (US 10), of which 150 m² was uncovered, differentiates from the gravel laying above due to the intense black colour of the earth, rich in carbons with a strong organic aspect. US 10, which contained pottery and metallic remains from the Final Bronze Age, presented a sub-level portion of mountain the slope of which went in a N, W and S direction. The level portion of US 10 was interpreted during the excavations as an artificial flat area, a kind of platform, covering US 11, anthropic very rich in pottery remains, minute burnt bone fragments, vitreous material beads, bronze and horn objects, interpretable as the products of the activity of a funerary pyre and, probably, of a connected place of worship. Also US 11, like US 10, seems to be situated on a sort of miniscule terrace on the slope. US 11 has a sub circular form: towards S and W the limits of US 11 were highlighted by the distinct colour difference in respect to US 12, which covers, light coloured non anthropic gravelly-muddy sediments.

In US 11 two concentrations of pottery fragments were excavated. These were up to 20 centimetres deep and pertained to many tens of vases broken on the surfaces named US 14 and US18. These concentrations presented themselves as a jumble of pottery fragments

that were almost in direct contact with each other. They were minutely broken and repeatedly trodden on. The breaks, prevalently ancient, had sharp edges. One interesting aspect, which is useful to define the significance of these heaps of pottery fragments, is the fact that at this point, in contrast with US 11, calcined bones are not found, or they are found in such small numbers that it would seem reasonable to suspect sporadic infiltration due to the localised erosion of US 11.

In summary, the area occupied by US 11 is a sub-circular area about 6 metres in diameter that has been cut into by mechanical diggers in the northeastern part. It is characterised by a large accumulation of ash and charcoal, pottery remains and various other finds that probably pertain to funeral goods and ritual practices connected to the existence of a funeral pyre (*ustrinum*), which in turn is indicated by the oxidation of the surface of the sterile layer on which US 11 is situated. To the southwest the area is bordered by a large square shaped boulder which has a deep and wide crack running longitudinally. The top surface slopes slightly. It is difficult to establish if the boulder pre-dates the establishment in the area of the *ustrinum* cult, or whether it was purposely placed there. However a religious function seems probable. The anthropicised deposits were characterised by finds of all types:

- POTTERY. Medium-small sized thin forms prevail in the documentation. This is a pottery assemblage characteristic of a place of worship, but it would appear that specialised pottery production did not exist, dedicated to funeral rituals (goods) or religious practices (libations, destruction of various objects) connected to them, as there were not a few cases of pottery fragments, however fine and valuable, showing signs of repair.
- TERRACOTTA. Numerous spools with a flat cylindrical section, straight walls, slightly concave or convex, with a small central hole.
- BRONZE. Springs or rolls of thin bronze ribbons or ingots. Buttons. Hairpins with vase shaped heads. Hairpins with small flattened spherical heads. Hairpins with an enlarged stem decorated in alternating bands with oblique carvings. Depressed arch fibulae. Needles.
- GOLD. Straws and thread. No finished objects.
- AMBER. Fragments of numerous beads.
- GLASSY MATERIAL. Spherical or cylindrical convex necklace beads, blue, light blue or with white inserts.
- DEER HORN. Numerous fragments of deer horn disks decorated with carved dice eyes.

Towards the end of the 2nd millennium B.C. ritual places characterised by the lighting of votive fires, the so called “*Brandopferplätze*” (AAVV, 1999), spread throughout the central Alpine area. Often accumulations of burnt bones, and entire layers of vases inten-

tionally broken during the libations are the archaeological aspects that are the most striking of these religious sites in which collective ceremonies of deep social significance must have taken place and may have involved many different communities (NIEDERWANGER & TECCHIATI, 2000). The “*Brandopferplätze*” were often situated on the tops of mountains which were evidently sacred to the people of the Bronze Age, such as the Sciliar. These sanctuaries accompanied the affirmation of the Luco Culture, beginning during the Late Bronze Age, although several phenomena described elsewhere (TECCHIATI, 2000) would seem to make it plausible that the origins are older, or at least there was a certain “traditional” predisposition to the destruction by fire of sacrificial offers. It is evident that the ritual of the *Brandopferplätze* is similar to the funeral custom of cremation, that characterised the Urn Field Age, but which locally, as seen above, it seems to belong to even older epochs.

Amongst the cults that characterised the Bronze Age (in particular at the start of the middle phase), the best documented is the immersion, perhaps as a votive offer, of objects, particularly metal weapons in the waters of rivers, lakes, ponds and springs. Swords, axes and spear points are the most emblematic of this ritual custom. The phenomenon manifested itself during the full Neolithic but it became particularly prominent in a good part of central-northern Europe during the second half of the 2nd millennium B.C. - and therefore the Late Bronze Age - which was when this form of ritual was at its height. The placing of objects in water, especially in *salutifere* springs, also took place during the Iron Age, with impressive continuity at least from the Final Bronze Age (c.f. Bolzano-S. Maurizio). Topographic analysis of the phenomenon shows a distribution of objects that is structurally different between the two provinces (mainly axes in Alto Adige and swords in Trentino) confirming that also at an ideological level there must have been, practically up to the event of the Luco Culture, substantial differences between the regions north and south of Salorno (DAL RI & TECCHIATI, in press). The decline of the water cult seems to coincide with the affirmation, from the Final Bronze Age, of the new cult centred on votive bonfires.

In the case of the so called *Passfunde* (= finds in the vicinity of passes), well documented in the region especially by spear points, axes and also swords, can be seen as being placed there for religious reasons connected to crossing through Alpine passes that were also used during the Bronze Age. An interesting case is represented by the finds at Penserjoch-Passo Pennes, between the Sarentine Alps and upper Val d’Isarco, which include two bronze axes, respectively from the Early and Late Bronze Age (LUNZ, 1973), which testifies to the continuity of use of the site and its probable religious character.

2.5. Conclusions and critical discussion

This work's approach, also during the meeting, was deliberately critical. If on one hand it was necessary to try to draw up a summary of the situation, however provisional, on the other it seemed right to draw due attention to the qualitative and quantitative limits of research into the Bronze Age and outline the current state of the art. The topics that gravitate around the specification of the chronological thresholds and distinctions in the phases of individual epochs that mark historical development between the III and II millennium B.C. are amongst the most important. Dealing with them obviously requires better clarification of the archaeological facies the aspect of which, in a frontier area, is by necessity the result of the re-elaboration of external stimulus that come from several directions. The abandonment of negative notions, such as that of "impoverishment", is certainly the result of a revised historical perspective, but also of the availability of a large amount of data that by several people have been used to exemplify intersocietal/intercultural dynamics that were extremely viable and which constitute the exact opposite of impoverishment or isolation (DAL RI, 1997; TECCHIATI, 1999A; STEINER & GAMPER, 2000). In light of these reflections, which refer to epochs older than the Bronze Age, it appears that the establishment of the Luco facies – which from an archaeological viewpoint seems to suddenly appear without warning in respect to the preceding tradition – cannot be understood unless one accepts the idea of an extremely long historical process during the course of which many influences slowly converge towards an apparently necessary *reductio ad unum*. However, this cultural landscape occurs in a physical landscape in which communities that were once parenteral in nature, disconnected and substantially autonomous, find, in new forms of territorial structuring according to precise settlement systems, a compulsory reason not only for reciprocal relations, but also and above all for self-representation and cultural identification. This can be seen in the tendency, in the main basins and often at the confluence of important waterways, of establishing polycentric settlements, probably but not necessarily with an invertebrate structure, to use Peroni's term. In these areas, in the throng of neighbouring sites and in the high density of settlement evidence it seems possible to see a systematic unit, founded on the use of the territory and its resources by communities bound together by a political and strategic obligation, perhaps also endowed with their own ergological characteristics. In my opinion one of the merits of recent research into the Bronze Age is to have understood the importance – that is the actual existence – of these settlement systems, not only for the management, structuring, control and exploitation of the area in an economic sense, but as the first embryonic form of the organisation of power. The existence, indeed

the birth of numerous sites on the valley floor without any form of defence at the beginning of Late Bronze Age, seems to indicate that the entire area was defended "upstream" by tried and tested settlement systems, within which settlements and cultivated lands could reside free of the worry of having to provide for fortifications, whether natural or artificial. This situation, which in the area of Luco affirmed itself just at the moment the Po Valley area saw the fall of the Terramara system (BERNABÒ BREA *et al.*, 1997), would not have had any chance of affirming itself if it had not been founded on that which is perhaps the most significant aspect that characterises the Bronze Age on one could say continental scale. This concerns the stabilisation of the settlement with habitats that appear permanently settled for very long periods of time, often up to the Iron Age and further. This phenomenon seems to regard almost exclusively hillock habitats, even if in several cases, like Vadena, the continuity of occupation of the feet of cones or areas close to the Atesina valley floor starts during the Final Bronze Age and continues until the first five centuries A.D.⁴¹.

The emphasis placed on settlement archaeology significantly moves research to topics of subsistence, to which archaeozoology and archaeobotany particularly contribute, but in a measure that is still insufficient for the standards required today to identify the functional character of sites⁴². In the same way the stress placed on the existence of settlement systems moves interest in the direction of learning more about the environment surrounding the settled areas where there must have been cultivated land, virgin areas, or fallow land that had been overgrown by spontaneous vegetation, ergological areas, paths or actual "roads", terracing, drainage work, embankments, canalisation and "off-site" structures that are still undiscovered and for which today there are no predictive type models. The topic of settlement systems introduces, at least as a hypothesis for work, the concept of an internal hierarchy within these systems. Speculation, which could be more or less well founded, may identify this and be able to describe it in its concrete historical application. However more difficult, especially due to the lack of data regarding funeral rites, is the identification of the structure inside the community, which we have no reason not believe was unequal and appreciably stratified.

In conclusion it is natural to think that the principal tasks that awaits modern research into the Bronze Age in Alto Adige are: the intensification of territorial and environmental type research connected to a series of work to protect archaeological deposits; the study and the integral publication of sites; the analysis of faunistic and botanic assemblages; the composition of summarising outlines in which the different spheres of ancient community activity are seen in the necessary reciprocal relations.

NOTES

1 – Edited by Franco Marzatico

2 – Edited by Umberto Tecchiati. In this contribution toponyms are given in German/Italian the first time they appear in the text and then only in Italian when they appear again. Alto Adige, as known, is the Italian version for Südtirol. In the case of the Ladino toponyms Sotciastel only the Ladino version is used, as it seems to me that the Italian “Sotto Castello” version is no less laughable than the horrible but established, Sudtirolo. In the map of site distribution the name of the locality is followed by the bilingual name of the comune. In the case of micro-toponymy I have decided to use the toponym best known in literature, that is, in most cases, the German name.

3 – There is a large amount literature about Tanzgasse. see, with preceding literature and much new data regarding stratigraphic series, material culture and anthropological and faunistic remains: Dal Ri *et al.*, in press.

4 – Radiometric dating underway.

5 – The samples sent for dating were atypical fragments of faunistic remains previously identified by A. Riedel and the author of this work. See RIEDEL & TECCHIATI, 1999. Radiometric dating financed by the Ufficio Beni Archeologici della Provincia Autonoma di Bolzano, and I would like to thank dott. Dal Ri. I thank Prof. Raffaele Carlo De Marinis, Chair of Palaeontology at the Università degli Studi di Milano, for his kind contribution for a better reading of the dating information presented here.

6 – Cf. Tecchiati (edited by) 1998b. I must again thank my friend Prof. R.C. De Marinis, for first alerting me to the error. The recalibration is taken from the study by ATTARDO, 1997/98, who I thank for the kind cooperation.

7 – Medieval, for example, according to LUNZ, 1992. The revision of the structural data and the contents of the archaeological levels connected to the perimeter wall, examined in my doctorate thesis, makes me believe that it is possible that the defensive wall was erected at Nössing probably at the beginning of the Middle Bronze Age.

8 – See note 5.

9 – Late Neolithic burial ground, dated to about the middle of the 4th millennium B.C. First mentioned in DAL RI *et al.*, 1997. Currently being studied by the same research group. The pseudo-straight cylinder was found as a contaminating object in the level that held the grave.

10 – The few bronze objects found in the habitat include bow shaped fibulae, see LEITNER, 1988.

11 – There were several typical metal products from Peschiera, such as the Peschiera-Bacino Marina type pinhead and the axes with median tabs and long thin blades, noted at Sotciastel by a fragmented sandstone mould.

12 – Habitats with these characteristics have often merited the definition “castelliere” (fortified village). This definition finds its origins and justification not only in local toponymy, but also in the evident analogies with Giulian, Istrian and Ligurian castellari. The term “castelliere” seems to me not

to be adequate for the local situation, because, in contrast to the other geographic areas mentioned, where the castellieri occupied a precise chronological phase (from the Middle Bronze Age to all of the Iron Age) and gave rise to a “castellieri culture” (restricted to Friuli Venezia Giulia and Istria), in Alto Adige as in Trentino and the areas surrounding the sites (villages) on hillocks (or rises) occupied a very wide chronological phase and are not characterised by their own cultural expressions.

13 – In any case the real importance of the populating of the valley floor, which must have existed, unless one believes in the overused hermeneutic model of marshy valley floor is destined to remain unknown due to the geomorphological characteristics of the valley floor itself, which are eroded and covered by alluvial sediments.

14 – The recently excavated Ganglegg di Schluderns/Sluderno can be added for which refer to STEINER & GAMPER, 2000.

15 – The site at Velturmo, better known for its important Copper Age structural evidence, has also provided the important remains of a large Late and Final Bronze Age habitat, which continued to develop during the Iron Age, Roman times and Early Middle Ages. Currently being studied by L. Dal Ri and U. Tecchiati. Archaeobotanic analysis of the whole period of occupation is presently being carried out by M. Cottini (Coop Arco, Como).

16 – Excavations by the Ufficio BBAA of the Soprintendenza ai BBCC of Bolzano – Alto Adige still underway

17 – The results of Innerebner’s Wallburgenstatistik were later collected and critically edited for publication by LUNZ (Innerebner 1974, 1975, 1976).

18 – The first identification of the problem was the poster by RIZZI & TECCHIATI, 1991/92 on Noessing B which was based on the first archaeological map of the Bressanone basin drawn up by Rizzi, later published in RIZZI, 1993.

19 – The analytic study of settlement systems in the basins of Brunico-San Lorenzo and Bressanone is the subject of degree thesis that is currently being written by I. Parnigotto at the University of Padova, Relatore Prof. A. De Guio.

20 – The sites are situated in the lower central areas or in the proximity of them, and on rises that border the basin.

21 – Other than several settlements the area also numbers two burial grounds, a religious site close to a *salutifera* source and various other manifestations of the “Brandopferplatz” type culture. See STEINER, 1998, 2001.

22 – The legends that have grown up locally around the existence of ancient city also go in this direction (see OBERRAUCH, 1968). This is obviously not definite proof of the existence of an ancient city, but perhaps proof of how the first archaeological discoveries in the area influenced the elaboration of fairy tales. The case of the ancient city of Olang/Valdaora in Val Pusteria is not very different.

23 – In this age short lived colonisation experiments took place at the upper margins of Monzoccolo as shown by the case of the habitat at Salonetto: see TECCHIATI, 1999b. Whether these experiments form part of a wider settlement

“project” that also comprises the valley floor is a matter of discussion.

24 – The canalisation of Settequerce Via Steuer (BOMBONATO *et al.*, 1997).

25 – Dated to this age is the establishment of the habitat at Bagni di Zolfo – Maso Unterhofer, currently being excavated by the Ufficio Beni Archeologici della Soprintendenza BBCC of Bolzano, and the burial grounds at San Maurizio – Maso Berger for which see STEINER, 2001.

26 – The oldest allotment at the Vadena settlement is in substance dated to extremely early aspects of the first Iron Age. Only a very small part of the preceding stratifications, dated to the Final Bronze Age, could be investigated due to the great depth in respect to the water bed.

27 – The Italian translation “roghi votivi” (votive fires) does not express the concept very well, implied in the German definition, of rituals centred on the offer of sacrifices characterised by the destruction of victims (animals) and various goods by fire.

28 – The same site was underwent archaeo-zoological and archaeo-botanical investigation, which are discussed below in the paragraph dedicated to the manifestation of religion.

29 – This is probably the case at Knappenbach, recently described by Niederwanger (NIEDERWANGER & TECCHIATI, 2000), a site from which there comes a rare fragment of wooden conduit probably connected to a washing system or the infrastructure of the site (e.g. for the water supply?) due to the permanence of the miners at the location.

30 – The documentary situation is redressed by the phenomenon of Gewässerflunde and Höhenfunde, for which see more in the paragraph dedicated to religious manifestations.

31 – In the case of San Lorenzo the moulds are all concentrated in the area of Sonnenburg-Castel Badia, in the orographical complex of which the hills are opposite one another, on one side and the other of the Rienza, known as Ternerbühel and Amtmannbühel, can be considered a “door” to the settlement system in the area. In this point the concentration of moulds could assume importance within the framework of a phenomenon of concentration of artisan activities “of status” in correspondence an obligatory point of access to the settlement system and water and road

network. For the San Lorenzo moulds see DAL RI & TECCHIATI, 1994a.

32 – With good reason RAGETH (1986), for example, has dedicated himself to these reflections.

33 – In accordance with the definition of RAGETH, 1986.

34 – The site is currently the subject of attention within the framework of a study project of Italian Protostorical glass, by Paolo Bellintani, Ufficio Beni Archeologici Provincia Autonoma di Trento.

35 – The problem in identifying the place of production, as known, is not limited only to the area that is the subject of this study, but extends to vast European areas where the only site at Frattesina di Fratta Polesine seems to have provided direct proof of the on site fabrication of vitreous material artefacts.

36 – See dating n. 1, Tab. 1. Anthropological determination by S. Renhart.

37 – In this case a mandibular ramus. Kindly communicated by J. Rizzi who found it amongst faunistic remains in the village. See J. Rizzi, 1996/1997.

38 – The site is in the course of being published by Dal Ri & Tecchiati. Anthropological study by S. Renhart, botany by E. Castiglioni. Radiometric dating to the first half of the 4th millennium B.C.

39 – Dal Ri & Tecchiati, with contributions by E. Castiglioni (botany) and S. Renhart (anthropology).

40 – The area has been known about since the last century, due to a large number of finds from different epochs. Recently traces of Mesolithic occupation have also been found in a layer against the vertical calcareous rock walls (Salorno – Cava Girardi “B”) about 50 metres behind, and east, of the site described here. See for the study of the Mesolithic site, BAZZANELLA & WIERER, 2001.

41 – Due to the quality of existing documentation, the phenomenon of the continuity of settlement occupation is difficult to quantify and visualise in detail for all known sites. This is because most of the sites have not been systematically excavated or never excavated. However, the phenomenon is sufficiently macroscopic to not require detailed statistics which, in any case, would only be possible in a limited number of cases.

42 – How many “central places” appear and develop in this condition is easy to imagine.

SUMMARY - In the Atesina area corresponding to today’s Trentino on the basis of evidence from La Vela at Trento and at Montesei di Serso in Valsugana, the identification of a “formative phase” of the Early Bronze Age was proposed in which elements from the eneolithic tradition were encountered, in particular bell shaped, Poladian type jugs and a metallurgical component with eastern origins to which were attributed to expressions of the cult of the dead (burial of infants in vases). The classical culture of the Polada is mainly represented in the pile dwelling at Molina di Ledro where there is a lack of reliable stratigraphical indications that can be used for the exact definition of the associations. The sequence recorded at the pile dwelling of Fiavé, however, provides an important term of reference for the scansion in phases of a wide span of time that extends from an advanced moment of the Early Bronze Age (Fiavé 3) to the Late Bronze Age (Fiavé 7). The necropolis of Stenico, which dates back to the end of the Middle Bronze Age, tells us about the burial customs that reflect those of the trans-Alpine burial mound culture. On the basis of the ceramic typology of the Late Bronze Age a new regional horizon is identifiable, followed, from the XII century B.C., by the affirmation of the Luco/Laugen culture phase A which, other than Alto Adige/South Tyrol, involved, as already known, the Bassa Engadina and Eastern Tyrol. The hoards of Mezzocorona

and Tragno-Crosano, together with a large number of sporadic objects and the huge number of foundry areas identified in Eastern Trentino (Valle di Cembra, Valle dei Mochen, Tesino, the Lavarone area, Luserna and Vezzena), demonstrate the great importance of the role played by the metallurgical industry at the end of the Bronze Age. The intensity of the exploitation of regional copper deposits and the almost proto-industrial level of the work are indicated by large slag deposits, sometimes over 2 metres, and by nine foundry ovens in a battery found at 1445 m a.s.l. at Passo del Redebus where the slag weighs between 800-1000 tons. Other than foundry sites the visiting of mountainous areas in this phase is indicated by religious places with votive bonfires (Brandopferplätze). The advanced phase of the Final Bronze Age, which sees the continuation of the development of the Luco/Laugen culture, is mainly documented by metal objects.

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Fig. 1 – Late Eneolithic/Early Bronze Age (formative phase).

Materials from the Late Eneolithic/Early Bronze Age (“formative” phase): 1 Flint dagger blade. 2 Copper awl. 3 Terracotta casting moulds for eye axes. 4-11 Remains of a jug from Montesei di Serse near Pergine Valsuganna. 12-16 Pottery fragments from Fiavé zone 1 (Fiavé 2°).

Materials from the Early Bronze Age – Polada Culture: 17-19 Pottery. 20 *Dentalium* shells. 21 Small stick type pendants or Montgomery type buttons. 22 Bear cranium. 23 Bronze spiral from the female’s tomb at La Vela di Trento (initial phase). 24-27 Pottery. 28 Atrophic deer teeth. 29 Bear cranium from the burial grounds at Romagnano. 30-31 Bronze axes from Serravalle di Ala. 32-33 Pottery. 34-36 Bronze hairpins*. 37-38 Dagger blades. 38-41 Bronze axe from Molina di Ledro.

1-11 PERINI 1972; 12-16 PERINI 1994; 17-23 FASANI 1988; 24-29 PERINI 1975; TECCHIATI 1991; 32-41 RAGETH.

ENEOLITICO RECENTE/
- BRONZO ANTICO -
FASE FORMATIVA

BRONZO ANTICO - CULTURA POLADA -

FASE INIZIALE

MONTESEI DI SERSO	FIAVÉ 2	VELA VALBUSA	ROMAGNANO	MOLINA DI LEDRO
<p>1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11</p>	<p>12, 13, 14, 15, 16</p>	<p>17, 18, 19, 20, 21, 22, 23</p>	<p>24, 25, 26, 27, 28, 29</p>	<p>30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41</p>

Fig. 2 - Early Bronze Age (final phase: Fivavé 3°) and Middle Bronze Age (Fivavé 4°).

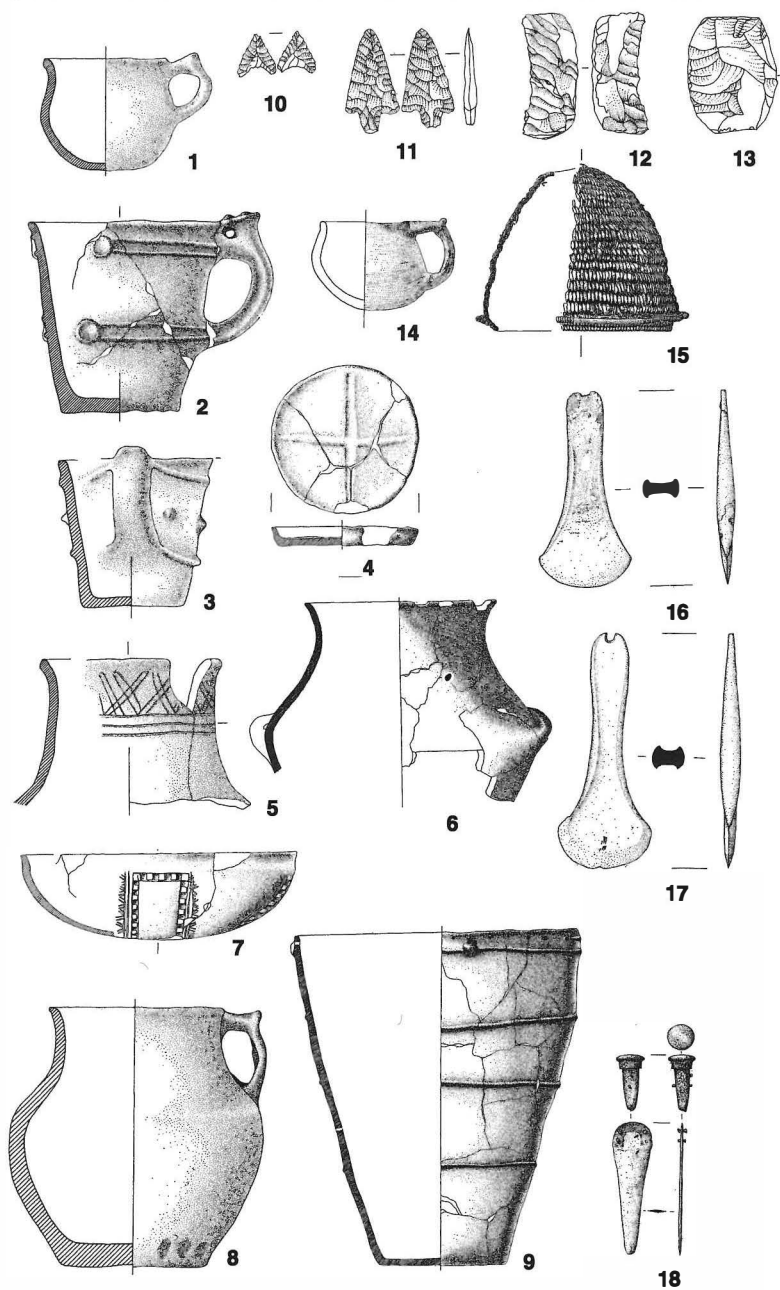
Materials from the end of the Early Bronze Age: 1-9 Pottery. 10-13 Lithic industry. 14 Wood. 15 Grass and wood. 16-17 Bronze axes. 18 Bronze dagger blade and horn haft from Fivavé. 19-20 Bronze hairpins. 21 Bronze dagger. 22 Bronze axe from Molina di Ledro. 23-24 Ingots *a graffa* from Valle di Non.

Materials from the beginning of the Middle Bronze Age: 25-32 Pottery. 33-35 Lithic industry. 36-37 Bronze hairpins. 38 Horn comb. 39 Wooden cup. 40 Wooden plate. 41 Wooden ladle from the layers at the beginning of the Middle Bronze Age at Fivavé (Fivavé 4°). 42 Bronze tiara from Molina di Ledro. 43 Bronze hairpin from Calliano. 44 Bronze sword from Dercolo. 45 Bronze sword from Strigno.

1-18, 25-41 PERINI 1987, 1994; 19-22, 42 RAGETH 1974; 44-45 BIANCO PERONI 1970

BRONZO ANTICO - FASE FINALE

FIAVÉ 3°



BRONZO MEDIO - FASE INIZIALE

FIAVÉ 4°

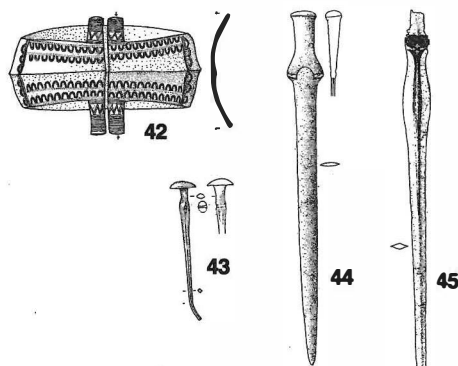
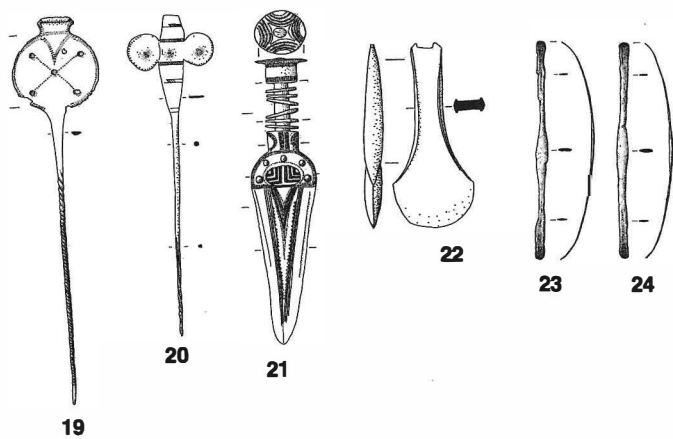
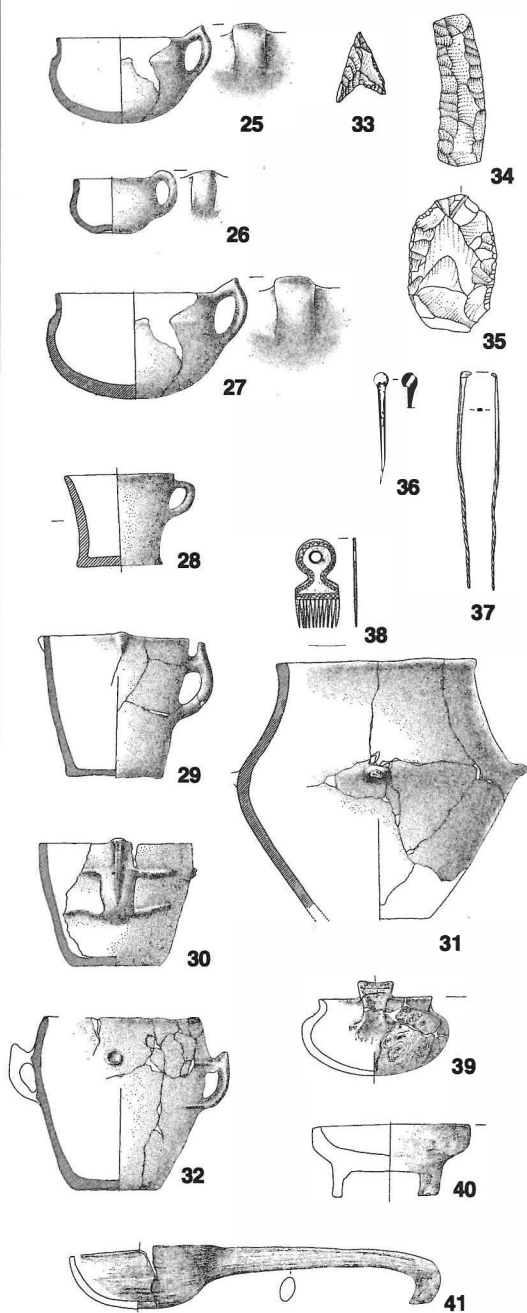


Fig. 3 – Middle Bronze Age (Fiavé 5°) and Middle Bronze Age (advanced phase Fiavé 6°).

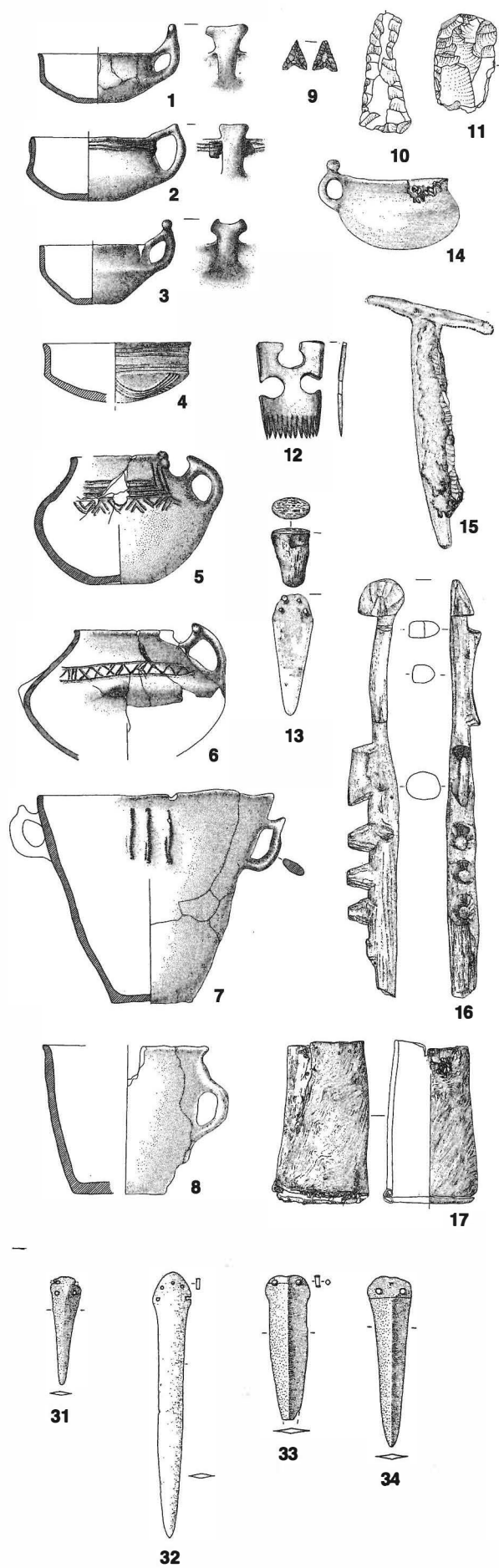
Materials from the Middle Bronze Age: 1-8 Pottery. 9-11 Lithic industry. 12 Horn comb. 13 Bronze dagger blade with horn haft. 14 Wooden cup. 15 Wooden and flint saw. 16 Wooden yoke. 17 Wooden container from the upper levels of zone 2 at Fiavé – Fiavé 5°.

Materials from the end phase of the Middle Bronze Age: 18 Bronze pendant. 19 Bronze dagger blade. 20 Bronze pendant. 21 Bronze axe. 22 Wood and flint reaping hook. 23-30 Pottery from zone 1 at Fiavé – Fiavé 6°. 31-41 Swords and daggers from the central and end phases of the Middle Bronze Age: 31 Bronze dagger blade from Molina di Ledro. 32 Bronze sword from Molina di Ledro. 33 Bronze dagger blade from Bondo. 34 Bronze dagger blade from Vervò. 35 Bronze sword from Valle di Non. 36 Bronze sword from Rovereto. 37 Bronze dagger blade from Torbole. 38 Bronze dagger blade from Cunevo. 39 Bronze dagger blade from Dambel. 40 Bronze dagger blade from Torbole. 41 Bronze dagger blade from Lenzumo.

1-30 PERINI 1987, 1994; 31-41 BIANCO PERONI 1970, 1994.

BRONZO MEDIO

FIAVÉ 5°



BRONZO MEDIO - FINALE

FIAVÉ 6°

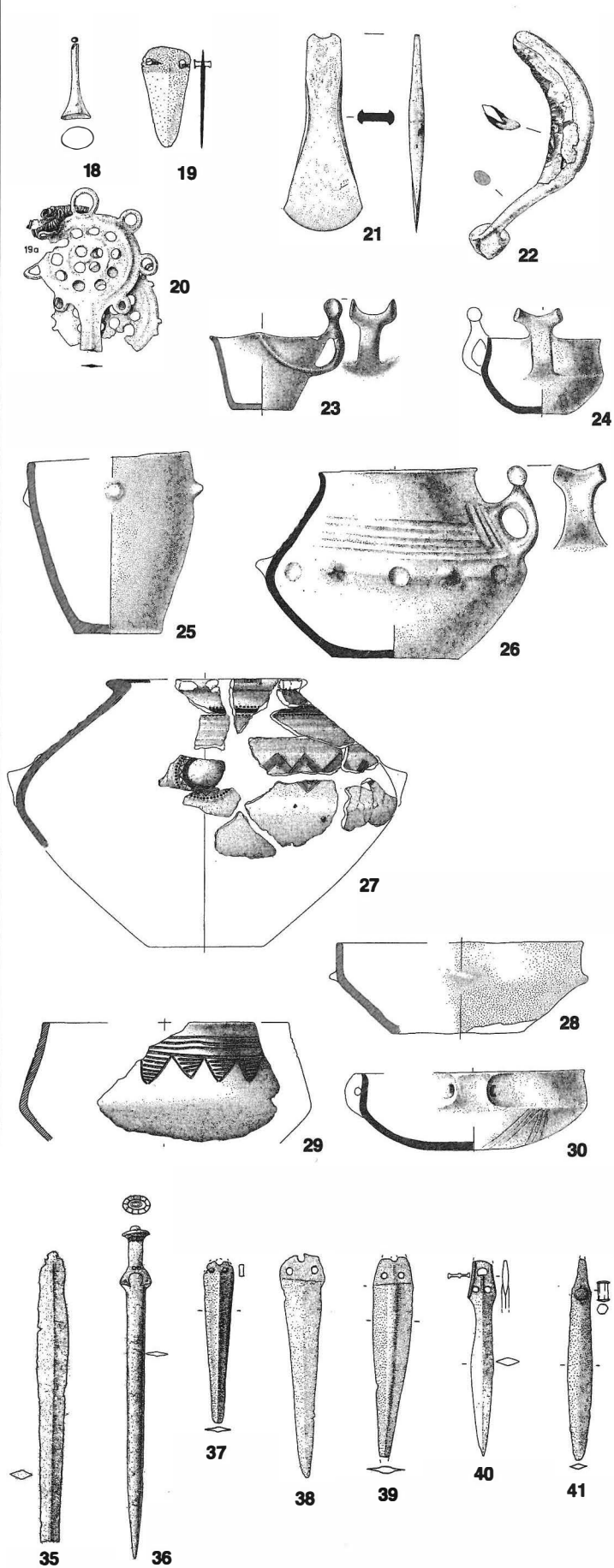


Fig. 4 – Late Bronze Age. 1-4 Doss Gustinaci Fiavé. 5-6 Roadbed at Fiavé (Fiavé 7°). 7-10 Nomi Cef, 11 Mechel, 12 Montesei di Serso near Pergine Valsugana, 13 Bedelar-Campivo Palù del Fersina, 14 Acqua Fredda Passo del Redebus, 15-17 Romagnano Loc, 18-19 Doss Castel di Fai della Paganella, 20 Axe from Civezzano, 21 Dagger from Civezzano, 22 Dagger Tenno, 23 Axe from Roncone, 24 Dagger from Monte Albano di Mori, 25 Dagger from Calavino, 26 Knife from Monte Albano di Mori, 27 Spear point from Rocchetta loc. Ischia, 28 Hairpin from S.Lorenzo di Cavedine, 29 Hairpin from Valle di Non, 30 Hairpin from Albiano, 31-32 Levico, 33 Mezzocorona - hoard, 34 From riverbed at Sarca presso Arco, 35 From riverbed Rio Meledrio presso Dimaro, 36 Around Brentonico, 37 Località Cornesei near Lago di Ledro. 26 BIANCO PERONI 1994; 27, 30-32 CARANCINI 1975, 34-37 BIANCO PERONI 1970.

BRONZO RECENTE

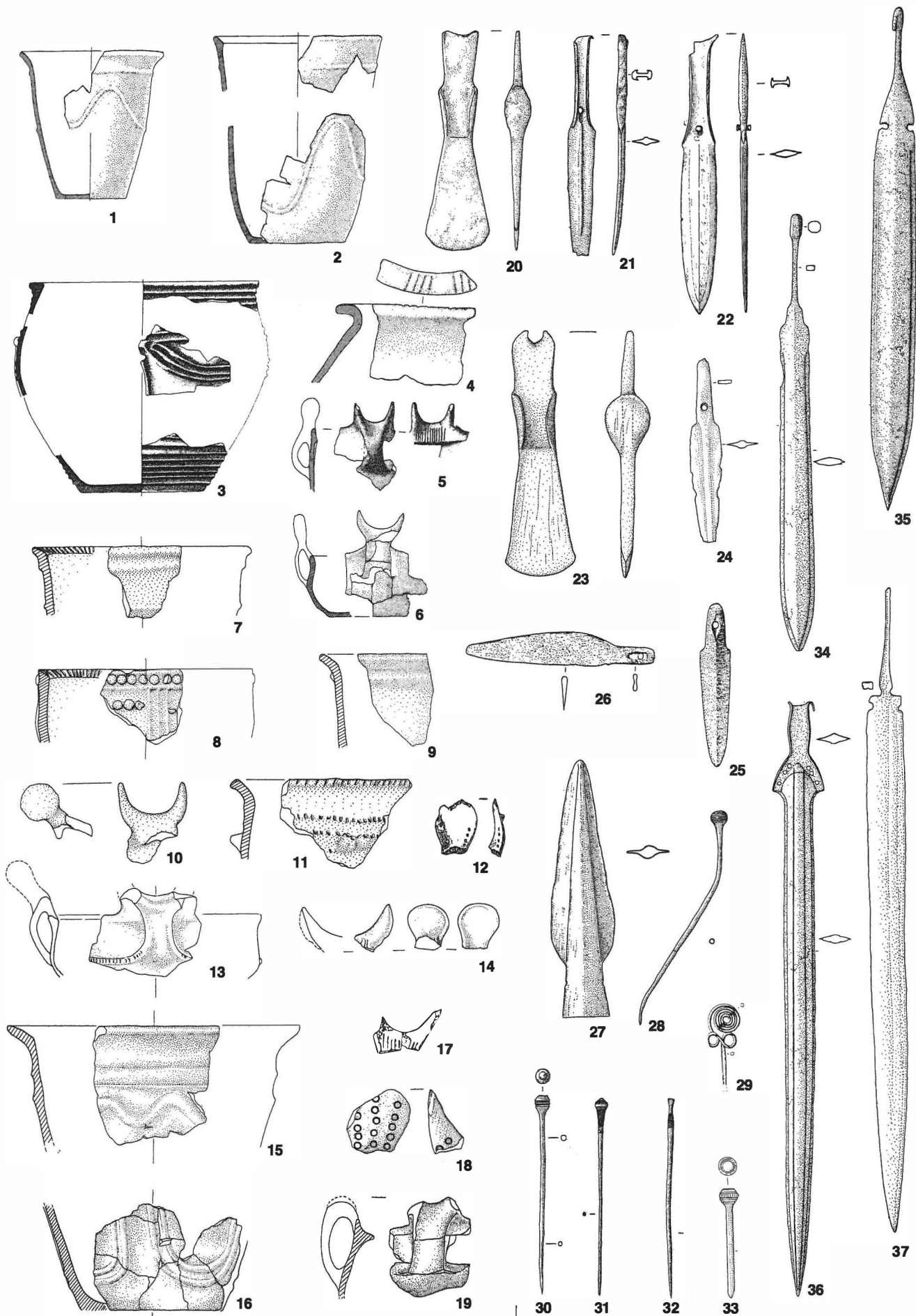


Fig. 5 – Final Bronze Age (Luco/Laugen A Culture). Pottery from the Luco/Laugen A Culture at the beginning of the Final Bronze Age: 1-12 Ciaslir del monte Ozol, 13 S. Agata Trento, 14-22 La Groa di Sopramonte.
1-12 PERINI 1970, 1979 nn. 14-22.

BRONZO FINALE - CULTURA LUCO/LAUGEN A

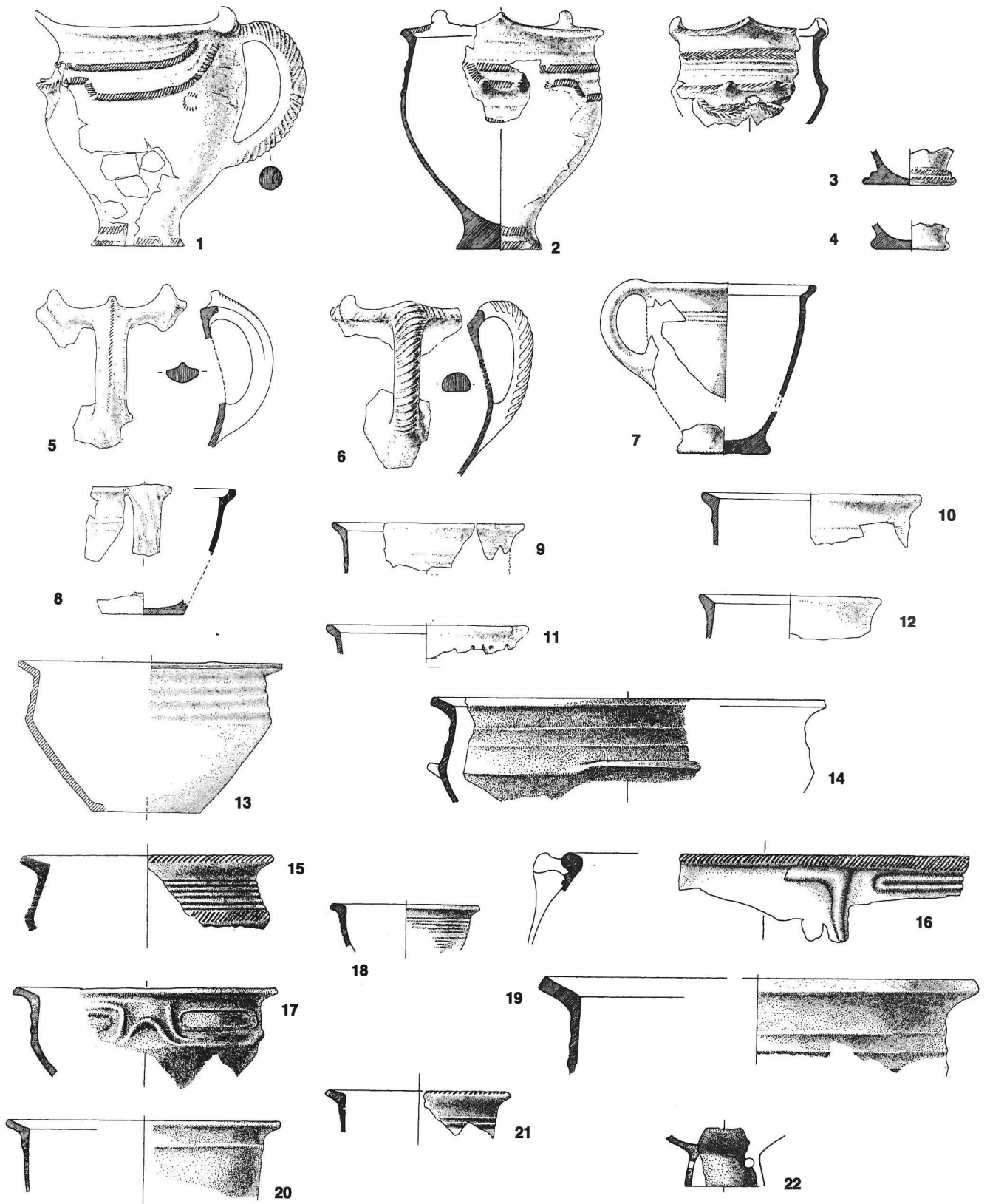
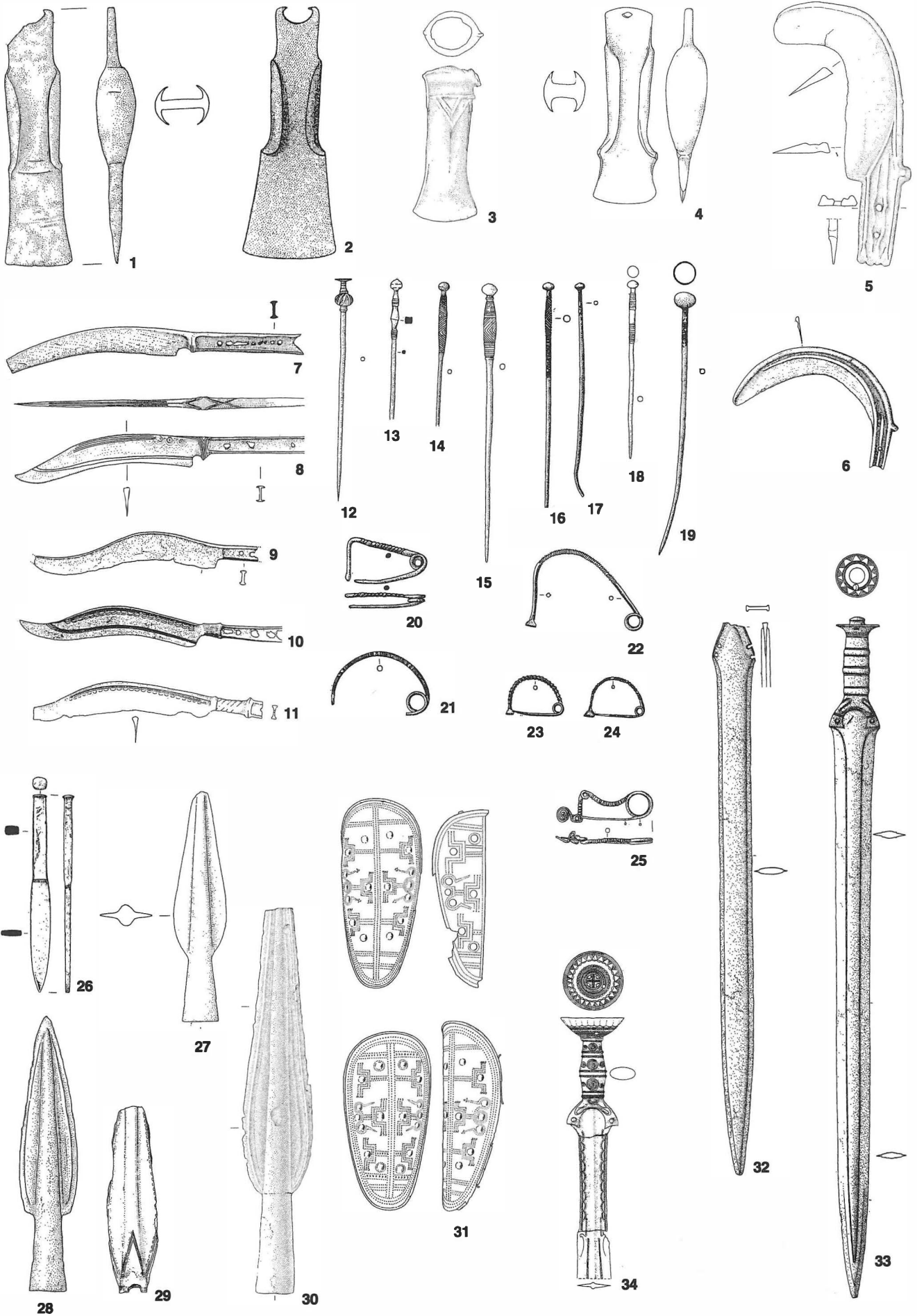
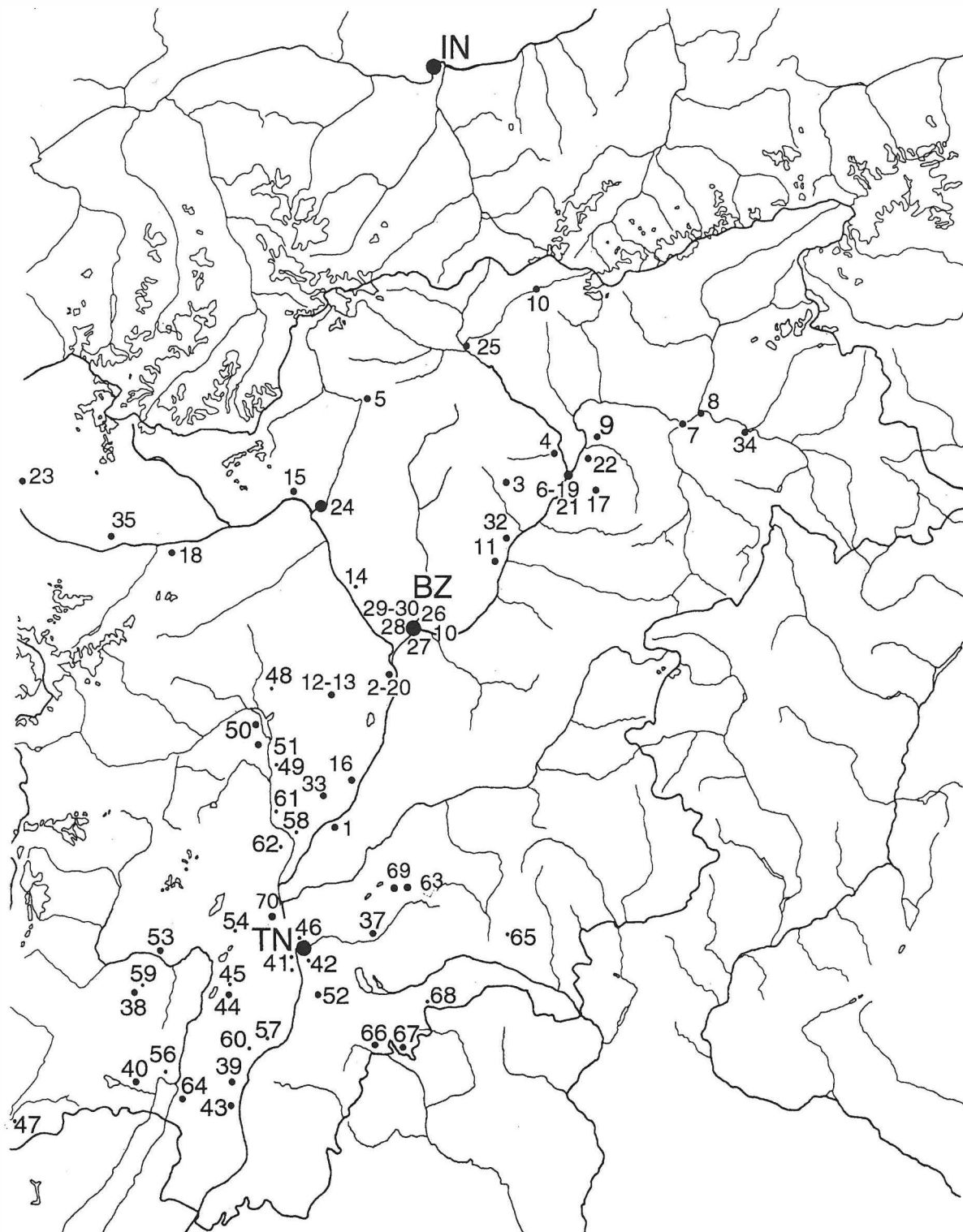


Fig. 6 – Final Bronze Age.

Metallic Materials: 1 Axes from Ziano, 2 Tenna, 3 Doss Trento, 4 Mezzolombardo Calcare, 5 Bill hook from Ala Castel S.Giorgio, 6 Reaping hook from Monte Bondone, 7 Knives from Torbole, 8 Cles, 9 Castel Beseno, 10 S.Pietro di Borgo Valsugana, 11 Villazzano-Trento, 12 Hairpins from Romagnano, 13 S.Giacomo di Riva, 14 Villazzano, 15 Povo, 16-17 Stenico, 18 S.Martino-Trento, 19 S.Lorenzo Cavedine, 20 Campi Neri di Cles, 21-25 Stenico, 26 Chisel Segonzano, 27, 30 Spear point from Mezzolombardo, 28 Romeno, 29 Doss Trento, 31 Shin guards from Masetti di Pergine Valsugana, 32 Sword from Rovereto, 33 Villa Agnedo, 34 Lago Pudro near Pergine Valsugana.
2 LUNZ 1974; 7-11 BIANCO PERONI 1976; 16-17, 21-24 PERINI 1983; n. 31 SCHAUER 1972; 32-34 BIANCO PERONI 1970.

BRONZO FINALE





Geographic location of the sites

- | | | | |
|--|--------------------------------------|---|---------------------------------------|
| 1. Salorno, Salurn | 17. Bressanone, St. Andrea | 35. Corzes, Kortsch | 53. Stenico |
| 2. Vadena, Pfatten | 18. Laces, Latsch | 36. Barbiano, Barbian | 54. Groa di Sopramonte |
| 3. Velturmo, Feldthurns | 19. Bressanone, Brixen | 37. Montesei di Serso (Pergine Valsugana) | 55. Doss Grum, Cadine |
| 4. Vama, Nössing | 20. Vadena, Pfatten | 38. Fiavé | 56. S. Bartolomeo di Ceole |
| 5. S. Leonardo, Sotèiastel | 21. Bressanone, Brixen | 39. Isera | 57. Dosso di Alto Rovereto |
| 6. Bressanone, Brixen | 22. Elvas | 40. Molina di Ledro | 58. Dosso di S. Michele a Mezzocorona |
| 7. San Lorenzo di Sebato, St. Lorenzen | 23. Malles, Mals | 41. Romagnano | 59. Dos Gustinaci di Fiavé |
| 8. Brunico, Brunneck | 24. Merano, Meran | 42. Solteri | 60. Nomi Cef |
| 9. Laugen, Lugo | 25. Vipiteno, Sterzing | 43. Colombo di Mori | 61. Borgonuovo di Mezzocorona |
| 10. San Giacomo | 26. Bolzano, Bozen | 44. Lasino | 62. Nogarole di Mezzolombardo |
| 11. Barbiano, Barbian | 27. Bolzano, Bozen – Castel Firmiano | 45. Poieti di Vezzano | 63. Campivo/Pletzen |
| 12. Appiano, Eppan | 28. Bolzano, Bozen | 46. Riparo Gaban (Trento) | 64. Tragno-Crosano |
| 13. Appiano, Eppan | 29. San Maurizio, Moritzing | 47. Malga Vacil (Storo) | 65. Tesino |
| 14. Settequerce, Siebeneich | 30. Bagni di Zolfo, Schwefelbad | 48. S. Biagio | 66. Lavarone |
| 15. Naturno, Naturns | 31. Castel Badia, Sonnenburg | 49. Dos de la Cros (Valle di Non) | 67. Luserna |
| 16. Magre', Magreid | 32. Villandro, Villanders | 50. Cles | 68. Vezzena |
| | 33. Favogna, Fennberg | 51. Tuenno | 69. Passo del Redebus |
| | 34. Monguelfo, Welsberg | 52. Dossi di Vigolo Vattaro | 70. Vela Valbusa |