Notes on Recent Large-Scale Urban Maps in Japan

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Abstract

A variety of Japanese urban maps and atlases illustrate some interesting characteristics deep-rooted in the soil of Japan. The latest years of the Tokugawa feudal period saw a great many urban picture maps designed as guide maps for Edo's population of well over one million and many other travellers. The then artistic but inaccurate maps had to be revised in the modern age after the Meiji Restoration of 1868. Western techniques were widely introduced, and during the course of modern history, sizable amendments were made so as to depict things Japanese well on maps.

Today, the Geographical Survey Institute (GSI) is functioning as by far the most influential agent for making scientific, systematic and accurate basic maps in cooperation with local governments, other central government agencies, and private companies. GSI now publishes a 1:10,000 topographical map series for major urban areas. Local governments print 1:2,500 or 1:1,000 national large-scale maps primarily designed for urbanized areas under the guidance of GSI. For urban built-up areas, cadastral mapping at larger scales is very slowly being made due to the geographical complexity of urban areas. To meet demands for much more detailed, updated town information, several private companies publish urban maps and atlases at 1:1,000–1:2,000 including house atlases which cover all Japanese cities. These are of great practical use. Shopping and leisure town guide maps are also popular among young people. Historical urban atlases for such a city as Tokyo seem to attract specialists and the older generations, as well as culture-oriented younger people and foreigners, as a reminiscence of the past, which is not easily visible in this largest urban agglomeration in the world.

Key words: *Geographical Survey Institute, national basic maps, sewerage maps, town maps, urban atlases, Japanese cities.*

Large-scale urban maps are in extremely abundant supply in Japan. A large number of private companies publish all different types of large-scale urban maps and atlases including so-called town maps, often thematic, which supplement growing demands. Many of these, however, use both “basic maps (*kihonzu*)” at 1:50,000/25,000/10,000 and “national large-scale (national basic) maps (*kokudo-kihonzu*)” at 1:5,000/2,500/1,000/500 as base maps. In this report, the present situation of government-produced large-scale urban maps, together with some of the privately produced ones, is mostly dealt with. By large-scale it is meant a scale of 1:10,000 or larger in Japan.

I. BASIC MAPS AND NATIONAL LARGE-SCALE MAPS

1. Scales

Maps produced by the Geographical Survey Institute (*Kokudo Chiri-in*, GSI) of the Ministry of Construction

1:10,000 topographical maps

..... major cities only (Fig.1)

1:5,000 national large-scale maps

..... mountains/rural

1:2,500 national large-scale maps

..... urban

Maps produced by local governments (cities, towns, villages)

1:2,500 national large-scale maps

..... most common (Fig. 2)

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Fig. 1 1:10,000 Topographical Map (5 colors: Kyoto)

1:10,000 TOPOGRAPHICAL MAPS — MAP SYMBOLS

1 road wider than 3.0m	57 chimney
2 road 1.5 – 3.0m	58 electric wave tower
3 road narrower than 1.5m	59 crane
4 national hwy./number	60 mine gallery/cave entrance
5 toll road	61 stone steps
6 toll road entrance/gate	62 cemetery
7 garden path, sidewalk, overpass	63 index contour (10m/20m)
8 road under construction	64 intermediate contour (2m/4m)
9 elevated road	65 auxiliary contour (1m/2m)
10 earth-piled road, road cutting	66 hollow (large)
11 road tunnel (large/small)	67 hollow (small)
12 divided road, roadside trees	68 cliff (soil)
13 railroad, station	69 cliff (rock)
14 railroad sidings	70 gully
15 underground railroad/sta., entrance	71 rocks (large)
16 ropeway etc./station	72 rocks (small)
17 railroad under constr./abolished	73 breakwater (large)
18 elevated railroad	74 breakwater (small)
19 railroad earthpiled/cutting	75 weir/dam
20 railroad tunnel (large/small)	76 flow pressure controller
21 dike, supporting walls (large/small)	77 sluice gate
22 power cable/tower	78 marsh
23 pipeline (ground level/elevated)	79 waterfall (large)
24 prefectural (<i>ken</i>) boundary	80 waterfall (small)
25 county, city, special ward boundary	81 water flow direction
26 ward (<i>ku</i>), town, village boundary	82 sand and gravel
27 ward subdivision, <i>o-aza</i> boundary	83 ferry
28 <i>chome</i> , <i>aza</i> boundary	84 paddy field (<i>ta</i> , incl. lotus f.)
29 land use boundary	85 upland field (<i>hatake</i>)
30 local gov't office	86 mulberry field
31 police	87 tea field
32 post office	88 orchard
33 telecommunication office	89 tree field
34 fire station	90 lawn
35 other gov't office	91 coniferous forest
36 school	92 deciduous forest
37 kindergarten, nursery	93 bamboo
38 library	94 palm
39 public hall, meeting hall	95 bamboo grass
40 hospital, clinic	96 wasteland, weeds
41 bank	97 garden tree/bush
42 department store, supermarket	98 ordinary house/bldg.
43 hotel	99 public bldg.
44 factory	100 structure without walls
45 warehouse	101 bldg. 3 stories or more
46 Shinto shrine	102 bldg. in shopping areas
47 Buddhist temple	103 tank
48 Christian church	104 park/green area
49 historic site, natural monument	105 forest, woodland
50 power plant, transmission station	106 triangulation point (GSI)
51 tall tower	107 triangulation point (public)
52 lighthouse, beacon	108 bench mark (GSI)
53 Shinto shrine gate (<i>torii</i>)	109 bench mark (public)
54 monument	110 elevation with stone marker
55 statue	111 elevation without stone marker
56 grave monument	

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1:2,500

Fig. 2 1:2,500 National Large-Scale Map (monochrome: Odawara)

1:2,500 NATIONAL LARGE-SCALE MAPS — MAPS SYMBOLS

1	建 物	△ 37.2	三 角 点 ⁴	1 house, bldg., structure
2	堅ろう建物	□ 12.04	水 準 点	2 concrete/brick bldg. 1 or 2 stories
3	無 壁 舎	○ 14.8	多角点及び標石のある図根点	3 stories or more
		・ 25.6	標石のない	3 structure without walls
		・ 18.7	標 高 点	4 triangulation point
			図化機測定による標高点	5 bench mark
9 戸	神 社	..	門	6 traverse point/stone marker
戸	寺 院		屋 門	7 elevation without stone marker
十	キリスト教会	→	鳥 居	8 elev. measured by stereoplotter
文	学 校	△	高 塔	9 Shinto shrine
病 院	〽	電 波 塔	10 Buddhist temple
×	警察官駐在所	□	油井・ガス井	11 Christian church
×	警察官派出所	◇	とうろう	12 school
丫	消 防 署	⊥	墓 碑	13 hospital
⊕	郵 便 局	⊥	記 念 碑	14 police
○	電報電話局	⊥	立 像	15 fire station
☆	工 場	⊥	独 立 樹	16 post office
☆	変 電 所	Q	起 重 機	17 telecommunication office
⊖	倉 庫	⊥	煙 突	18 factory
火	火 薬 庫	⊥	水 位 観 測 所	19 electric transmission station
△	揚排水ポンプ場	⊥	タ ン ク	20 warehouse
○	役場の支所	⊥	燈 台	21 powder magazine
○	出張所等	⊥	燈 標	22 pumping station
○	官 公 署	⊥	路 傍 祠	23 local gov't branch office
△	裁 判 所	⊥	トネル・坑口	24 gov't station/office
△	検 察 庁	⊥	洞 口	25 courthouse
◇	税 務 署	⊥	噴火口・噴気口	26 procurator's office
木	営 林 署	⊥	温 泉 ・ 鉱 泉	27 tax office
⊕	公会堂・公民館	⊥	材 料 置 場	28 forestry office
⊖	銀 行	⊥	石 段	29 public hall, meeting house
⊕	職業安定所	⊥	へ い	30 bank
⊖	保 健 所	⊥	か き 60	31 employment security office
⊕	協 同 組 合	⊥		32 health center
34 ⊕	幼稚園・保育園	⊥		33 cooperative

- 61 real-width road
- 62 garden path/road
- 63 light-vehicle road
- 64 foot path
- 65 road under construction
- 66 sidewalk/divided road
- 67 overpass/snow-shelter road
- 68 roadside trees
- 69 road cutting/piled-up-road
- 70 dike
- 71 ordinary railroad
- 72 special railroad
- 73 cable car/ropeway
- 74 platform/railroad overpass
- 75 elevated railroad/road
- 76 turntable/snow shelter
- 77 small platform/safety platform
- 78 electric power cable
- 79 area boundary
- 80 vegetation boundary
- 81 field boundary
- 82 prefecture (*ken*) boundary
- 83 sub-prefecture (*shicho*) boundary
- 84 county/city/special ward boundary
- 85 town/village/ward boundary
- 86 paddy field
- 87 upland field
- 88 sugarcane field
- 89 mulberry field
- 90 tea field
- 91 orchard
- 92 other tree/bush field
- 93 lawn
- 94 deciduous forest
- 95 coniferous forest
- 96 bamboo forest
- 97 garden
- 98 wasteland, weeds
- 99 *pinus montana*
- 100 bamboo grass
- 101 palm forest
- 102 salt field (*enden*)
- 103 marsh

1:1,000 national large-scale maps

..... second most common

1:500 national large-scale maps

Cadastral maps produced by local governments
in line with the National Land Agency plans

1:1,000/5,000 cadastral maps

..... rural (mostly 1:1,000)

1:250/500 cadastral maps

..... urban/rural (mostly 1:500) (Fig. 3)

GSI has been producing both 1:50,000 and 1:25,000 topographical maps for entire Japan, but the large-scale 1:10,000 topographical maps have only covered major cities including suburbs.

The current 1:10,000 Series has covered much of the Tokyo-Yokohama and Kobe-Osaka-Kyoto metropolitan areas. It is intended to be made for all metropolitan areas and prefectural capitals. Production of this series is largely based on national large-scale maps at larger scales so as to save costly expenditures. More or less traditional cadastral maps originating about 400 years ago, known as the *Taiko-kenchi* survey maps produced at the time of TOYOTOMI Hideyoshi or the Taiko, exist, with later revisions, for most of the inhabited areas of Japan, but accuracy is often the problem. In many cases, areas shown on these traditional cadastral maps are 10% or

- 104 artificial cover (large/small)
- 105 pipeline (ground level/elevated)
- 106 rocks
- 107 waterfall
- 108 weir/dam
- 109 sluice gate
- 110 water channel
- 111 wooden pier/floating pier
- 112 breakwater
- 113 bank height
- 114 pedestrian bridge
- 115 wooden bridge
- 116 permanent bridge
- 117 pile, post, stake
- 118 stones
- 119 water flow direction
- 120 ferry
- 121 influent/intermittent river
- 122 sand and gravel
- 123 narrow brook
- 124 rocky coast
- 125 rocks/reef
- 126 coral reef
- 127 erosion control dam
- 128 pond
- 129 rocky cliff
- 130 scattered rocks
- 131 large rocks
- 132 gully
- 133 index contour (principal c.)
- 134 intermediate contour
- 135 hollow
- 136 cliff (soil)
- 137 auxiliary contour
- 138 special auxiliary contour
- 139 local relief
- 140 o-aza (village subdivision) boundary

大 字 界 — — — 140

so less than their actual value. Thus, when a house lot is purchased or a house is constructed, the lot often needs to be measured by licenced surveyors to make an accurate property boundary map. To solve this trouble-making issue, local governments are making very accurate cadastral maps under the overall direction of the National Land Agency, but coverage is yet 1/3 of the rural and suburban areas. Inner cities generally do not have accurate ones in the strict sense, since surveys are often confronted with irregularly patterned, vaguely recognized property boundaries of such high-density built-up areas.

2. Purposes

The major purposes of making large-scale maps by the government organizations are for

planning and cadaster. Engineering purposes are normally limited to waterworks so far as government large-scale urban mapping is concerned. Private companies such as gas and/or electric companies make their own large-scale maps for their own use.

3. Contents

Contents vary from scale to scale, and also by theme of the maps. In the case of 1:2,500 national large-scale maps (the most commonly produced large-scale maps), well over 100 symbols are represented, as the legend above shows (Fig. 2). The 1:10,000 topographical maps contain more than 100 different symbols, too (Fig. 1). Although national large-scale maps at 1:2,500 illustrate all different kinds of geo-information,

Fig. 3 1:500 Cadastral Map (monochrome: Yokohama) (reduced to 80%)

as the legend shows, altimetric or three-dimensional data for manmade structures are quite limited to two categories of building height (1~2 stories and 3 or more stories). Prevalence of low buildings in historical, traditional Japanese cities and towns might have influenced this relative negligence of building height. Some of the privately produced detailed town maps show number of stories for taller buildings, however.

4. Sheet Designation

Japan is divided into 19 coordinates (I~XIX). Each coordinate consists of grid meshes labeled with alphabet series. A grid mesh with 30×40 km is thus labeled as IX-MC for example. This mesh

is further divided into 100 subdivisions (3×4 km), each corresponding to a 1:5,000 national large-scale maps and each with a serial number (00~99). 1:2,500 national large-scale maps are obtained by dividing 1:5,000 maps into 4 equal sections (1~4). Thus,

IX-MC 74-4 (for example)

is obtained. Formats are based on grids, not graticules.

5. Data Acquisition and Accuracy

1:2,500 photogrammetric survey
1:1,000 photogrammetric survey
1:500 terrestrial and
photogrammetric surveys

Table 1 Accuracy standards for topographic surveys

		scale	
		$\geq 1:500$	$\geq 1:1,000$
planimetric location		$\leq \pm 0.5\text{mm}$	$\leq \pm 0.7\text{mm}$
altimetric	elevation	$\leq \pm \Delta h/4$	$\leq \pm \Delta h/3$
	contour	$\leq \Delta h/2$	
			distance on map
			Δh : intermediate contour interval
			Δh : intermediate contour interval
scale		intermediate contour interval (standards)	
1:10,000		10m	
1:5,000		5m	
1:2,500		2m	
1:1,000		1m	
1:500		1m	
1:250		1m	

Table 2 Accuracy at index points

accuracy		
scale	planimetric location*	elevation*
1:500	$\leq \pm 0.1\text{m}$	$\leq \pm 0.1\text{m}$
1:1,000	$\leq \pm 0.1\text{m}$	$\leq \pm 0.1\text{m}$
1:2,500	$\leq \pm 0.2\text{m}$	$\leq \pm 0.2\text{m}$
1:5,000	$\leq \pm 0.2\text{m}$	$\leq \pm 0.2\text{m}$
1:10,000	$\leq \pm 0.5\text{m}$	$\leq \pm 0.3\text{m}$

*standard deviation

Table 3 Photographing scale (standards)

plotting scale	photographing scale	multiplying ratio
1:500	1:3,000~1:4,000	1:6~1:8
1:1,000	1:6,000~1:8,000	1:6~1:8
1:2,500	1:10,000~1:12,500	1:4~1:5
1:5,000	1:20,000~1:25,000	1:4~1:5
1:10,000	1:30,000	1:3

Automation in data acquisition is not well developed yet. Stereoplotting is done by hand, but some experiments are being done for digital representation.

6. Map Design

Although 1:10,000 topographical maps for major urban areas use five colors (black, salmon pink, green, purplish dark gray, blue), all national large-scale maps at larger scales are produced monochromatically. Generalization of the distribution of houses/buildings is minimum at scales of larger than 1:10,000, enabling horizontal house shape to be represented almost as they are. Since 1:10,000 topographical maps for urban areas are basically photographic reductions of the photogrammetrically produced larger-scale maps (national large-scale maps), here also horizontal house shape is quite realistically shown. Generalization of road widths is applied for very narrow roads which abound all over. At 1:5,000, roads with a width of 2m or wider are of real widths, and at 1:2,500, 1m or wider represent real widths. Even on 1:10,000 topographical maps, pedestrian sidewalks and overpasses are normally shown, but many of the simple sidewalks such as guard-rail separation for pedestrians at a side or both sides fail to be represented. Design of government-produced maps is often criticized for not being artistic. Even the five-colored 1:10,000 topographical maps do not seem to deserve to be a decoration in a room, perhaps because of their faintness in print and also of too complicated texture and contents. Nevertheless, this series of urban maps attracts much attention from specialists thanks to its accuracy and abundant detailed geo-information, both of which are to be realized at the relative sacrifice of artistic design.

7. Map Production, Reproduction, and Revision

For 1:10,000 topographical maps, scribing is used, but for 1:5,000/2,500/1,000, ink drawing is the common practice. Phototype setting is widely used for letters and some symbols. The most common materials for fair drawing are plastic. CAD (computer-aided design) has just started. National large-scale maps are produced for all parts of Japan, but in case demands do not exceed 200, maps are not printed; only blue-

prints are supplied for minor demands. Revision intervals are as follows:

1:10,000	5-year interval
1:5,000	no plan
1:2,500	5-year interval

II. SEWERAGE MAPS

Fig. 4 is a case for Odawara City in the southwest of Tokyo, illustrating the difficulty of installing adequate sewer systems for such an irregularly patterned built-up area as this. This is a kind of base map for various purposes concerning sewage systems here, and so it does not show all aspects concerned. Workmen use this kind of map when they construct or repair, together with others such as vertical distribution maps.

The scale here is 1:500, but this is a simple enlargement from 1:600. The contour interval is 1m in general, but auxiliary contours are also set for 0.5m where necessary. Elevations of the major streets are surveyed very precisely, normally in cm, but BM shows as small as mm (e.g., 10.361). Since all houses/structures seem to have different plans from each other, the construction of sewer systems is a time and money-consuming job. Many houses are located behind the houses directly facing the streets, but even these need to be supplied with sewers irrespective of locations. A small T letter on the map indicates "toilets", and these have to be connected with the sewers. There are many wells (encircled check-board) located in backyards, but most of them are no longer in use. House lot and/or property boundary lines are not clearly shown on the map. Lots and/or property separating walls or fences as visible structures are shown here, but these do not necessarily coincide with real lot and/or property boundaries. Garden trees and bushes may be represented.

III. PRIVATELY PRODUCED TOWN GUIDE MAPS AND ATLASES

Several private companies publish very detailed town guide/inventory maps and atlases at 1:1,000 to 1:2,000 for all cities of Japan and for

Fig. 4 1:500 Base Map for Sewerage (monochrome: Odawara)

Fig. 5 1:1,500 Town Guide Map (monochrome: Tokyo)

a great many towns and villages. These maps normally include real-width roads except for very narrow ones, houses (with surnames, often with full names, of resident representatives, names of establishments such as stores/companies/institutions), place-names, address numbers, etc. Since most of the streets in Japanese cities and towns do not have names and irregularly arranged street patterns are very complicated, this kind of town information maps and atlases are very widely used (Fig. 5).

Applicability of this kind of extremely detailed maps covering all cities is great. Many stores, banks, local governments, information bureaus and researchers can make full use of these maps. Geographical field work can easily become very efficient, with the aid of this geoinformation. Present-day urbanization here in Japan takes both horizontal and vertical expansion at a very rapid rate. Revision is made at the least interval and new additions are traced by enormous manual efforts and photo interpretation. These are commercially produced. A consequence is incompleteness in the inventory. Sometimes, they lack information inside office buildings or apartment blocks. Underground shopping malls may not be illustrated precisely.

The general lack of street names in Japan's cities and towns necessitates this kind of detailed inventory-type maps for general use. These are available at many book stores. Minor subdivisions within a city or ward often distribute similar guide maps to all residents. They may be used as shopping guides, too. The system of address numbers or house numbers in Japan seems to accelerate the need of such detailed, individual-based town maps.

Instead of street names and numbers, Japanese cities and towns use block systems. Built-up areas of metropolises are divided into wards (*ku*), which consist, in turn, of *machi*. *Machi* are made up of a few *chome*, numbered from 1 to 3 or 4. A *chome* is subdivided into many numbered blocks, each of which is further subdivided into last-order numbers which normally designate individual lots.

Thus: Tokyo-to, Nerima-ku, Fujimidai,
東京都 練馬区 富士見台

1-chome 17-ban 15-go

1丁目 17番 15号

Japanese town guide maps tend to show very narrow streets in real widths. There are two major reasons for this fact: 1) widths of the streets are not standardized in many cases, and 2) as street names do not exist, it is not necessary to print lines wide enough apart to take a street name. This is also true with national large-scale urban maps, which need to describe block names rather than street names. A result is the more or less faint (narrow) lines showing streets on Japanese maps.

Commercial town maps include some of the shopping areas, amusement zones, recreational areas, fashion towns, busy railroad stations, or the like, in very detailed, updated form. Such maps or magazines tend to focus on places and areas where young people gather. Large stations provide free computer-processed town guides including maps.

Efforts have been made to compile urban atlases for Japanese cities. Aside from planning atlases by governments, most of urban atlases are directly related to urban developments. Thanks to the existence of a large number of town maps produced during the Tokugawa feudal period, many historical urban atlases and also other urban atlases utilize these historical documents, mostly in the form of facsimile. A few reconstructed or newly designed historical urban maps have also been printed so that the scientific appraisal of the past could be made. Different from the Tokugawa period when practically all maps showed artistically deformed or intentionally distorted forms, as early maps elsewhere often illustrated, many of the new maps printed after the Meiji Restoration of 1868 tended to be scientifically accurate. Successive developments of cartographic works in Japan now enable many publishers to compile annotated atlases showing urban developments of great cities, old castle towns, newly planned cities in Hokkaido, etc. Compilation of old commercial maps and town maps is being done at places as a reminiscence of childhood or good old days.

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This short paper was read before the annual meeting of the International Cartographic Association's Commission on Urban Cartography (the then Chairman: Yasuo MASAI) held at Rotterdam, the Netherlands in 1987. Gratitude is extended to the local organizer, Mr. Jan

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References

- ASAKURA, Haruhiko, edit. (1985-87): *Edo-Joka Hensen Ezu-shu (Picture Maps Showing Historical Changes of Edo Castle-town)*. Hara Shobo, Tokyo. (J)
- KANAKUBO, T., SAITO, S. and Y. EGAWA (1985): 1/10,000 Map Series in Japan. *G.S.I. Bulletin*, **29-2**, 46-57. (E)
- Kashiwa Shobo, edit. (1983): *Meiji-Taisho-Showa Tokyo 1:10,000 Chikeizu Shusei (Collection of 1:10,000 Topographical Maps for Tokyo in the Meiji-Taisho-Showa Periods—1883-1937)*, Kashiwa Shobo. (J)
- (1984): *Taisho-Showa Tokyo Shuhen 1:10,000 Chikeizu Shusei (Collection of 1:10,000 Topographical Maps for around Tokyo in the Taisho-Showa Periods—1917-37)*. (J)
- (1986): *Meiji-Taisho Nihon Toshi-zhizu Shusei (Collection of Japan's Urban Maps in the Meiji-Taisho Periods—1881-1926)*. (J)
- (1986): *Showa-zenki Nihon Toshi-chizu Shusei (Collection of Japan's Urban Maps in the Early Showa Period—1928-43)* (J)
- Koku Jutaku-chizucho (Aerial House Atlases)* (updated). Kokyo-shisetsu Chizu Koku Co. Ltd., Tokyo, Osaka and Nagoya. (J)
- MASAI, Yasuo (1975): 1:20,000 Urban Land Use Map of Edo. *Chizu (Map)*, **13-1**, 9-16 (with a bilingual map, first edition 1973) (JE)
- (1984): Some New Developments of Urban Cartography in Japan. *Tsukuba Studies in Human Geography*, **VIII**, 265-272. (E)
- MASAI, Y. and H. PAPE, edit. (1982): *Urban Cartography 1982*. Commission on Urban Cartography, International Cartographic Association (ICA). (E)
- (1984): *Urban Cartography 1983*. Commission on Urban Cartography, ICA. (E)
- (1985): *Urban Cartography No. 3*. Commission on Urban Cartography, ICA. (E)
- (1986): *Urban Cartography No. 4*. Commission on Urban Cartography, ICA. (E)
- MASAI, Y. et al., edit. (1986): *Atlas Tokyo* [bilingual, Japanese and English, annotated]. Heibonsha, Tokyo. (J&E).
- Ministry of Construction (1985): *The Standard Specifications for Surveys for Public Projects*. (E).
- NAKAMURA, Shizuo (1974): *Odawara: Japanese Castle and Post-town*. Nakamura Map Inst. (J&E)
- (1984): *Hakane Rekishi-chizu (Historical Map of Hakone)*, Nakamura Map Inst. (J).
- PARRY, R. B. and C. R., PERKINS, edit. (1987): *World Mapping Today*. Butterworth and Co., London.
- Photogrammetric Survey Technical Society (1979): *Toshi Kukan Kozo Kihonzu Sakusei-shuho Chosa (Survey of Techniques for Urban Spatial Structure Basic Maps)*. Tokyo. (J)
- Sapporo Geography Circle (1986): *Watching Sapporo* (annotated atlas). Hokkai Times, Sapporo. (J).
- Zenrin no Jutaku-chizu (Zenrin's House Atlases)* (updated). Zenrin Co. Ltd., Kita-Kyushu, Tokyo and Osaka. (J).

最近の日本の大縮尺都市地図

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日本の都市地図・アトラスは、日本という風土の中で特徴ある発達を示してきた。江戸時代に大きく発達した絵図の都市地図は、特に百万都市江戸において都市案内図として役立った。明治以後の近代化の過程で、欧米の先進技術が導入され、地図作成法も大きく変化した、さまざまな面で日本の対応が見られたことも事実である。

今日、国土地理院が大縮尺都市地図のシステム化で果している役割は非常に大きい。また、各省庁、地方自治体、民間企業でも、国土地理院の指導の下に、または密接な協力関係において、詳細な大縮尺地図を作成している。国土地理院は現在、1:10,000 地形図シリーズを刊行中であり、これは全国の主要都市へ適応されることになっている。地方自治体等でも、国土地理院の設定したガイドラインの下に、1:5,000 から 1:2,500 程度の大

縮尺地形図を作成している。市街地でも地籍図の作成が少しずつ進められているが、正確な地籍図を全面的に完成させるには、従来からの足かせが余りにも大きい。

きわめて詳細なタウンマップの重要性は特に主題図において高い。民間企業による1:1,000あるいは1:2,000程度の住宅地図類が全国的規模で出版されているが、この利用度は高い。主として若者向けの買物・レジャー関連の大縮尺タウンマップが多数出されている。歴史的都市アトラスの作成も、東京を中心に盛んとなっているが、大縮尺のものの出版も進み、専門家や中高年を対象として販路がふえている。この種の地図・アトラスは、次第に若者や外国人の関心を呼んでいるが、これには世界最大都市としての東京の過去に対する関心の高まりが反映していよう。

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