ANAグループ機内誌
Inflight Magazine of ANA Group
February 2013 No.524

翼の王国

2

今月の旅先
カリフォルニア／島根／福島

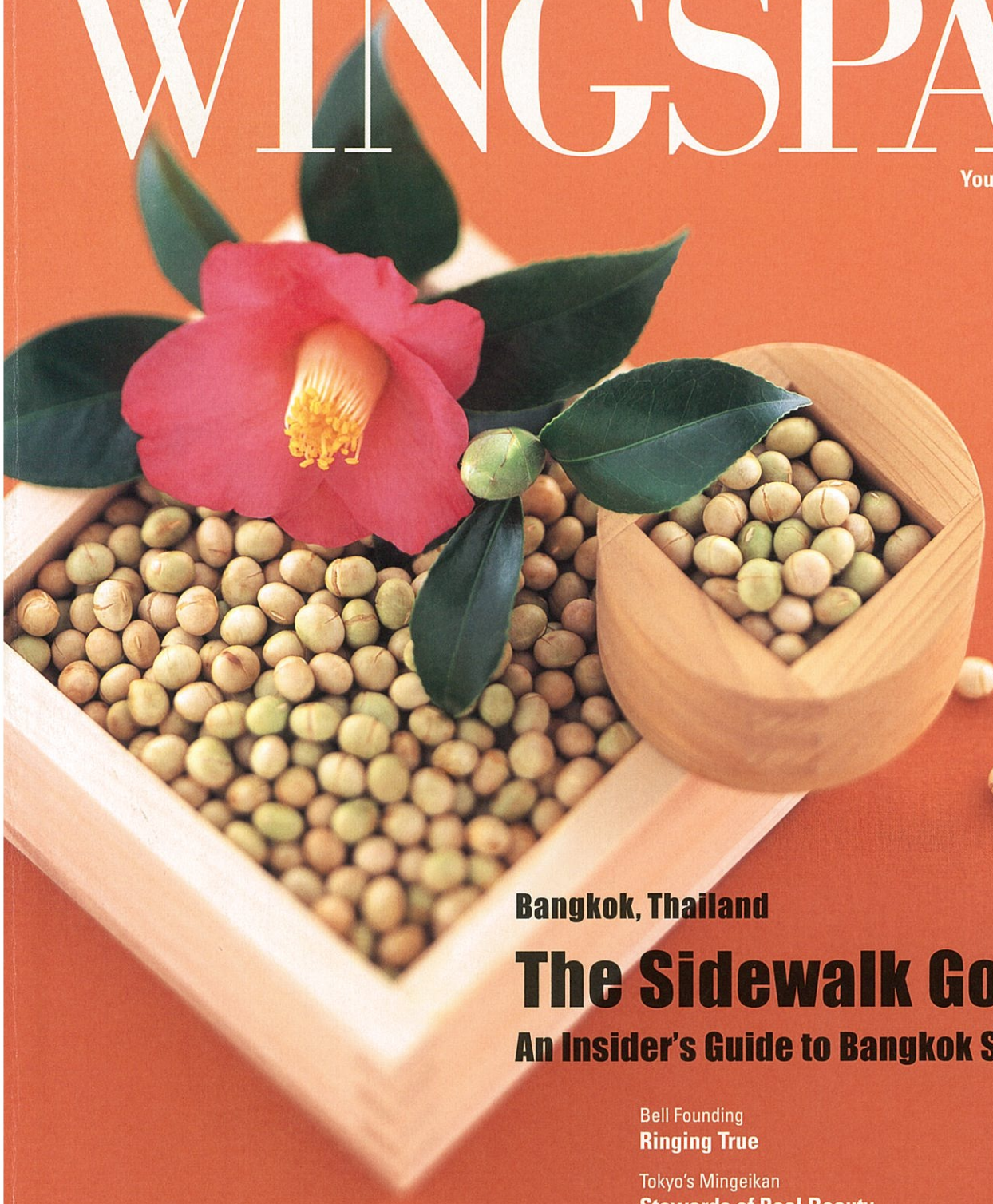
機内サービスのご案内／航路図
ご自由にお持ち帰りください

ANA | A STAR ALLIANCE MEMBER

THE INFLIGHT MAGAZINE OF ANA GROUP · FEBRUARY 2013

WINGSPAN

Your Complimentary Copy
免费赠阅



Bangkok, Thailand

The Sidewalk Gourmet

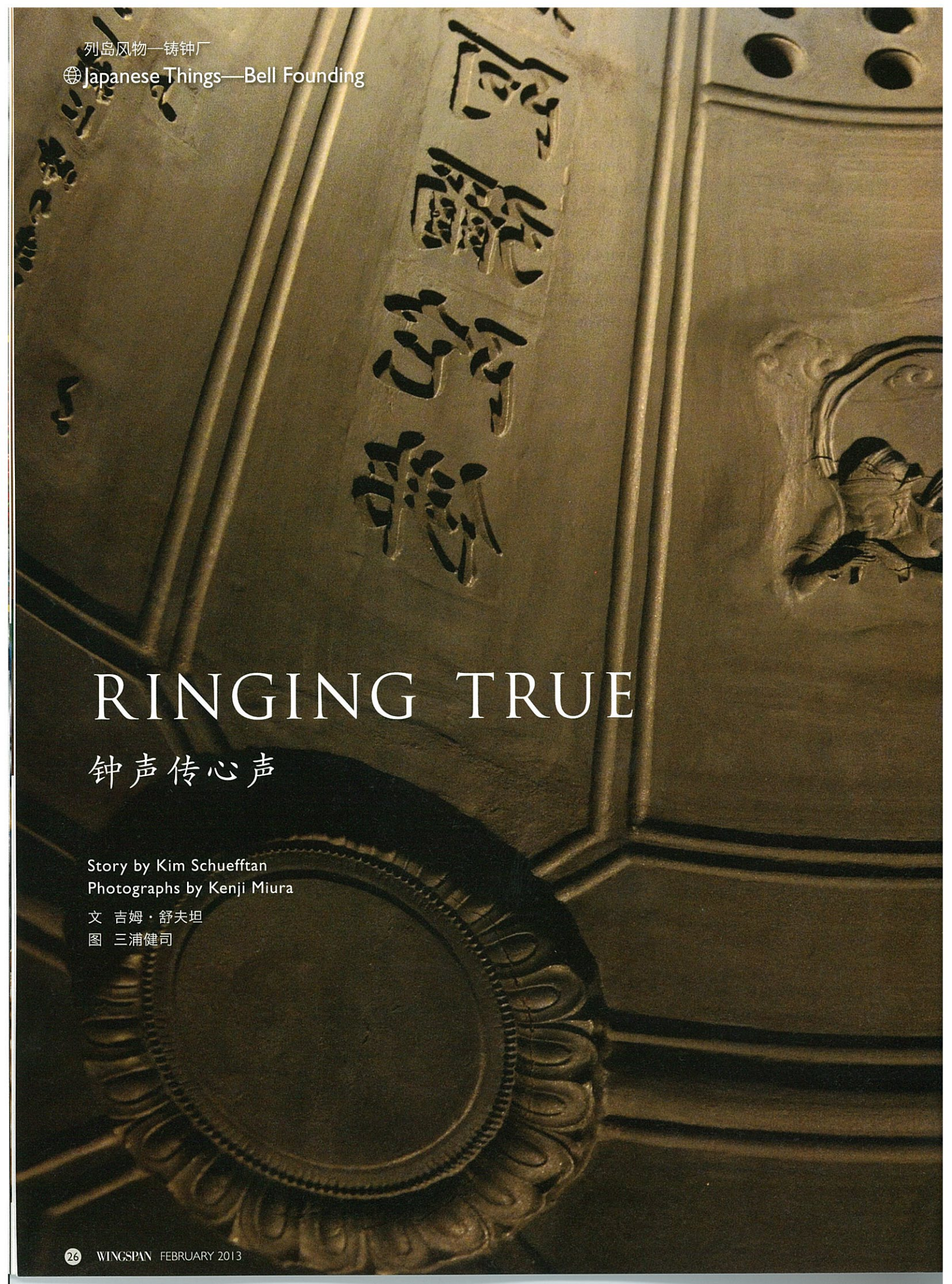
An Insider's Guide to Bangkok Street Dining

Bell Founding
Ringing True

Tokyo's Mingeikan
Stewards of Real Beauty

列岛风物—富山
钟声传心声

岛国风情—东京民艺馆
古朴家居・艺术宝藏



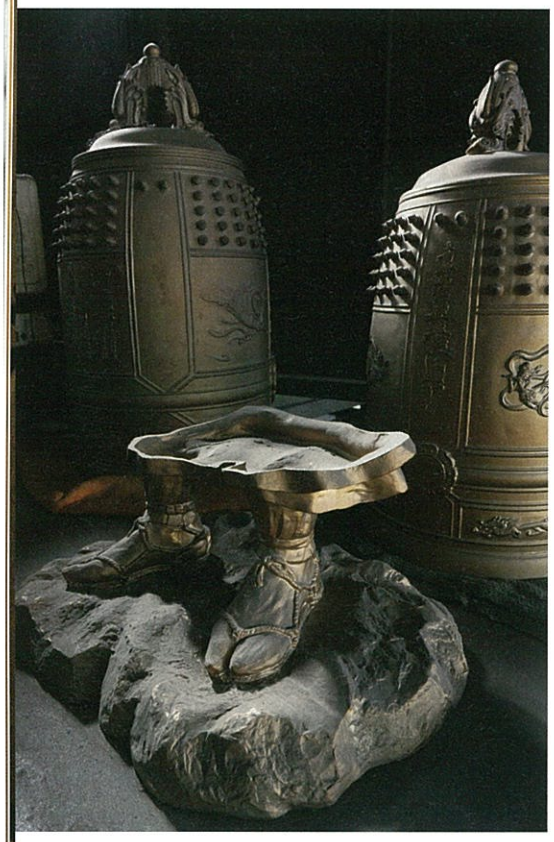
RINGING TRUE

钟声传心声

Story by Kim Schuefftan
Photographs by Kenji Miura
文 吉姆·舒夫坦
图 三浦健司

A mountaintop Zen temple near my home has a huge bell, which anyone can ring. That bell's grand and pure sound, echoing and reverberating in mountain folds and valleys, is elemental and unforgettable—it is at once thrilling and calming. Bells probably were invented spontaneously everywhere, rather than originating in one place, and their energy, attraction, and spiritual power are also recognized universally. In Japan, at midnight on New Year's Eve, the 108 tolls of temple bells signify earthly desires to be overcome, a custom known as *joya no kane*, and the ceremonies of various places are broadcast nationwide on television. Temple bells (*bonsho*) range from big to immense and are housed in a special enclosure in temple precincts, where they are rung by the hit of a thick pole or small log.

山顶上的禅寺在静谧中伫立，仿佛走入大自然质朴的永恒。坐落在我家附近的这座宝刹，寺中有一口巨大的撞钟，不管是谁到此参观，都可亲手用钟声献上祈祷。钟声回响，绕梁不绝，钟声清朗，声传百里。在谷中，在山间，钟声在人生旅途的时时刻刻，在难以忘怀的分分秒秒回响，发人深省，令人沉静。钟这种神奇的器物大约并不是突然出现在某个地点，而是在世界各地的文化中不期而遇地诞生。它的至高法力、摄人魅力和心灵能量普遍为世人所崇敬。在日本，每逢除夕夜，在时间跨过零点前，寺庙的撞钟会连敲 108 下，以表达世人欲脱却苦厄的愿望，这一名为“除夜钟”的风俗在各地举行，并通过电视向全国转播。寺庙的撞钟称梵钟，大都身形庞大，安置在寺内一处特殊的围栏建筑中。撞钟的工具没有定式，既可用粗长的木柱，也可用短小的木槌。



Primal Power

Japanese bonsho themselves are fascinating and marvelous objects. They capture the majesty of Buddhist practice and ritual, and when rung, take on a primal power and mystique. Photographer Kenji Miura and I traveled to Toyama Prefecture, an area long associated with bronze casting, including bonsho, to get insight into the techniques and traditions, the skills and complexities of giving birth to a temple bell.

Oigo Seisakusho is a company located in a small and quite green industrial park in the Takaoka area of Toyama Prefecture. Thirteenth-generation company president Shuhei Oigo was on a business trip, so we met Managing Director Hideharu Motoi. The company makes a wide range of bronze objects, including statues, but temple bells are the foundation of its craft.

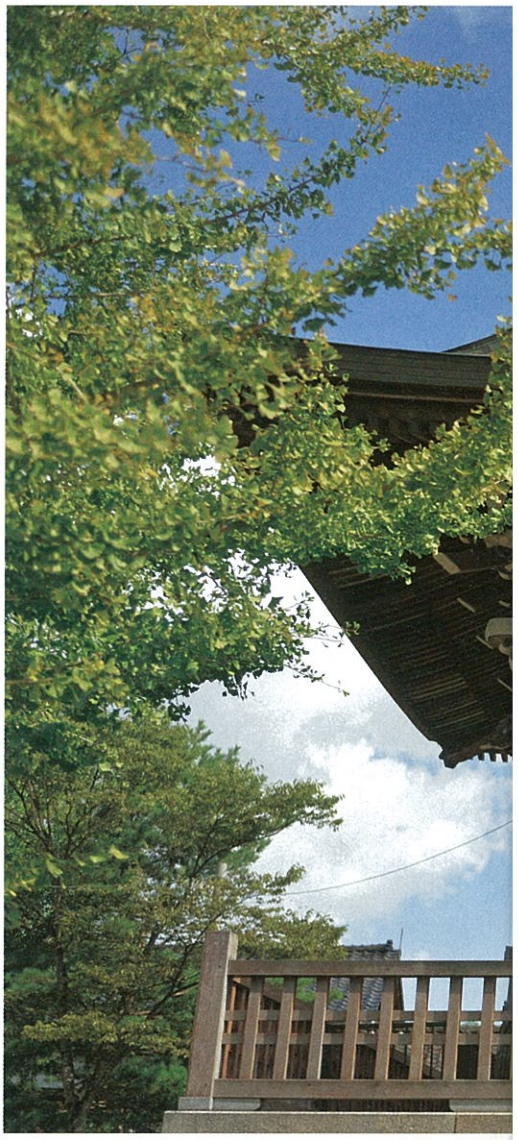
Motoi explained, "We have only been a company since the late 19th century." Before that, there was, and still is, a lineage of bronze casting craftsmen using the name Jiemon. Oigo is basically a manufacturing company, employing specialist artisans. "The bells and objects we cast are identified by the names of designers, which may include 'Living National Treasure' for people like Masahiko Katori, who designed the Hiroshima Peace Bell."

Pursuit of Quality

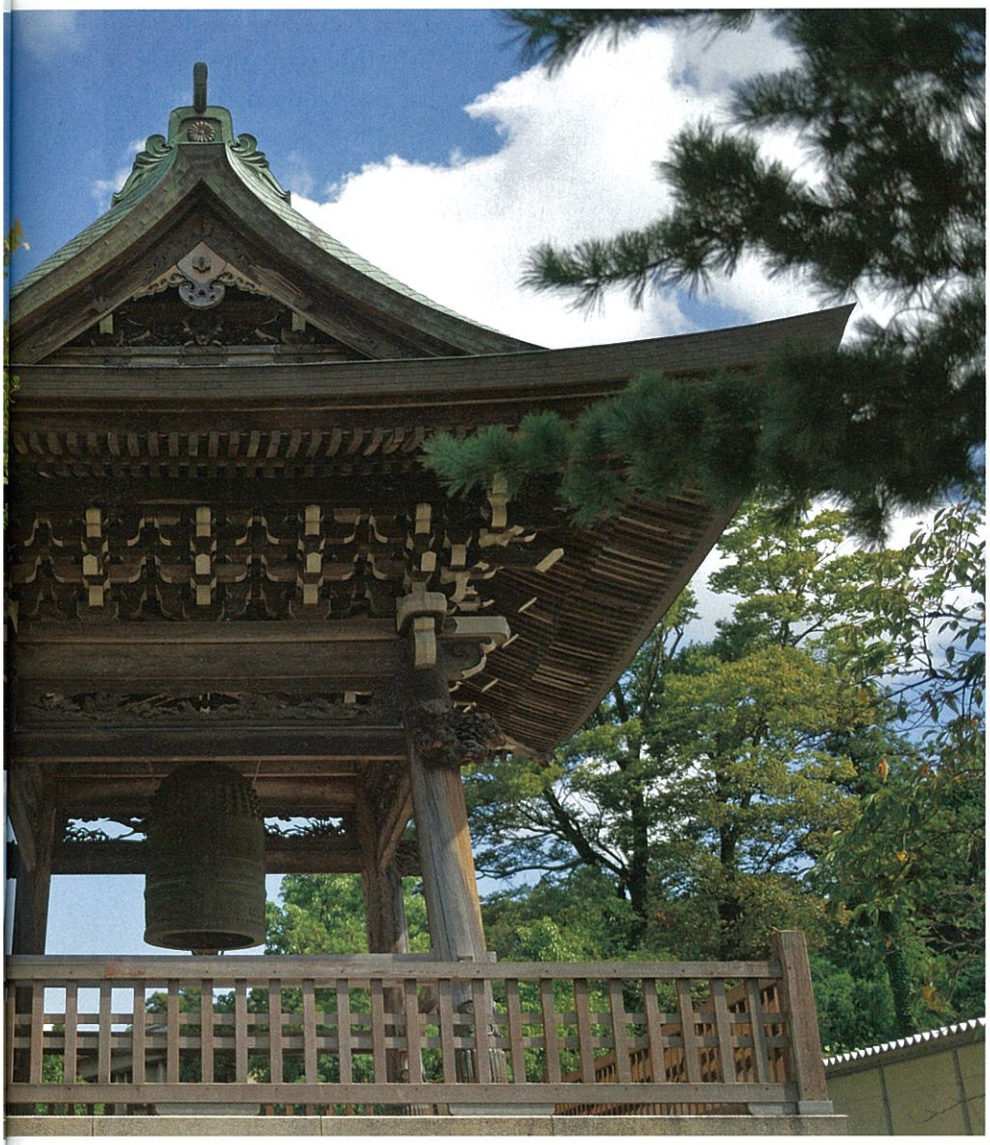
The most probable explanation of why Toyama Prefecture is a center of bronze casting today is that the Maeda lords of the Kaga domain during the Edo period (1603–1868) recruited and vigorously supported crafts and craft industries as a means of strengthening the economy of their domain. The domain's famous ceramics, textiles, lacquer ware, and gold leaf—the artistic crafts—were made in Kanazawa; everyday objects, like cooking pots, were made in outlying districts. Bronze casting is a regional industry at that level.

"There are some 400 companies here today involved in the various aspects of bronze casting. Some are specialists in coloring the metal, some in polishing and finishing. Takaoka is the only place in Japan where all aspects of bronze work are done," observed Motoi, "and there are many bronze alloys; the bell bronze we cast here is an alloy of copper and tin, with a small amount of zinc. Tin is what makes the quality of sound. Japanese bells have a long, steady toll, without beats or overtones. Other metals, such as silver and lead, alloy well with copper but do not produce a fine toll."

There are no copper mines in the



Interior wall of a temple bell's outer mold (overleaf). A well-made mold will produce detailed relief figures and inscriptions, for which careful finishing is essential. Other fine craftsmanship can be seen in the magnificent bell at Zuisen-ji and in dragon-shaped suspension braces.



铸造寺庙铜钟时使用的外模内壁（标题图）；只有精致的模子才能造出细密的浮雕图案和刻字，因此铸钟时最后的收尾工序非常重要。在瑞泉寺的大钟以及龙形支架上，都可以观察到高超的工艺细节。

根源之力

日本的梵钟本身就魅力四射，拥有一种让人惊异的美。梵钟蕴藏着佛教修行及仪式的恢宏庄严，当钟声响起，它就会唤醒一种根源的力量，让神秘的氛围降临四周。富山县一直与铸铜术有着极深的渊源，梵钟制作也包括在内，我同摄影师三浦健司一道来此，就是为了一窥梵种铸造的工艺传统、个中技艺及复杂过程。

老子制作所位于小而幽静的绿色产业园区，该园区就坐落在富山县的高冈地区。由于第 13 代公司总裁老子秀平因公出差，接待我们的是元井秀治董事。该公司从事包括铜像在内的各种铜件生产，而铸造铜钟堪称其发家之源、立身之本。

元井告诉我们：“我们在 19 世纪后期才组建为公司。”在那以前——如今亦是如此，一些铸铜工匠世家以“次右卫门”之名活跃在当地。老子制作所基本上属于制造公司，雇用一批有特殊技艺的匠人。“我们铸造的铜钟等物品都冠以设计师之名来加以区分，这些设计师中包括日本的‘人间国宝’（无形遗产传承大师），比如香取正彦先生，他是著名的广岛和平钟的设计者。”

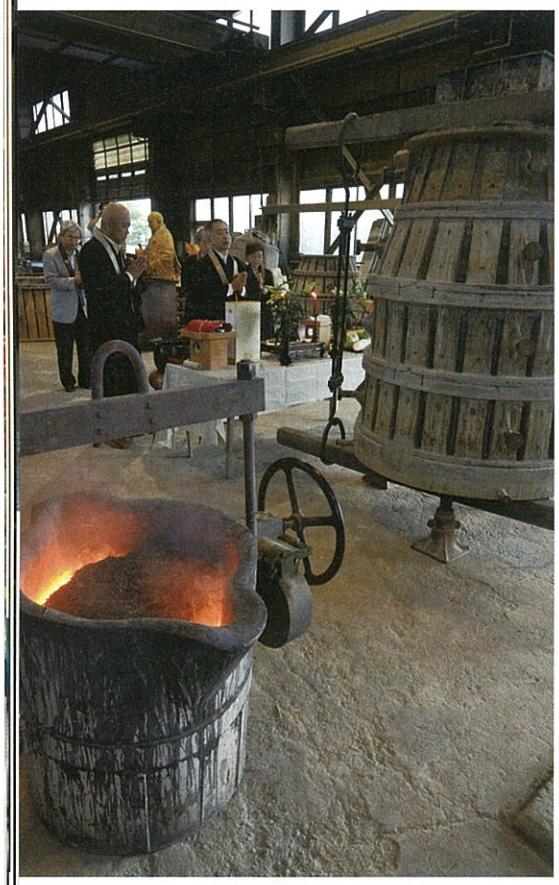
品质追求

为什么富山县能够成为今日铸铜业的中心？最可能的原因就是在江户时代（1603-1868），加贺藩的前田家集结并积极支持工匠，让手工业成为了强化领地经济的一种手段。当时在领地里，盛名远播的陶器、面料、漆器和金箔等极具艺术性的工艺品来自金泽；而煮菜锅等日常用品则产自其周边区域，铸铜就是在这个层面上成为地区核心产业的。

“这里现在有大约 400 家作坊共同组成铸铜业大家庭。它们各司其职，有些专于为金属着色，有些长于打磨和抛光步骤。高冈是日本全国唯一承包铸铜业全部工序的地区”，元井解说道：“多种铜合金在这里生产，比如做钟的材料就是一种铜锡合金，还带有少量的锌。锡的成份决定了钟声的品质，日本的钟声绵长悠远，不含节奏和泛音，如果用像银铅等金属，虽然也可以和铜结合得很好，却演绎不出好的声音。”

本地没有铜矿，所有的铜都经由海路运来，再转入河道，才得以运抵冶金场。“这里原本出产优质砂砾，可以做精密的铸模，

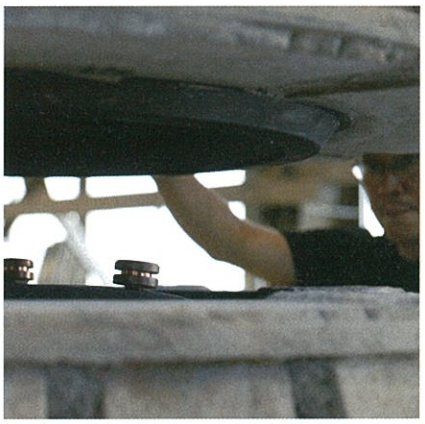
region; copper was shipped in by sea and transported by river to the smelters. "What this area did have was excellent sand for making molds, but today even the sand comes from other areas. But much of the materials we use—metal and sand—can be recycled," said Motoi.



Simple and Complex

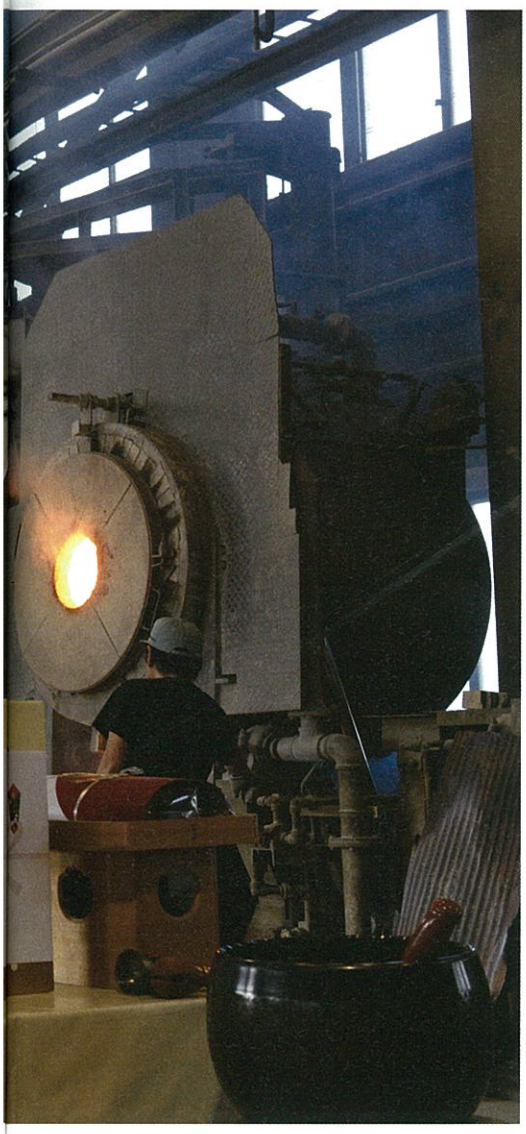
For casting bells and bronze statues, the basic steps are the same. There are two molds, an outer and a core, and the molten bronze flows into the space between the two. For bonsho:

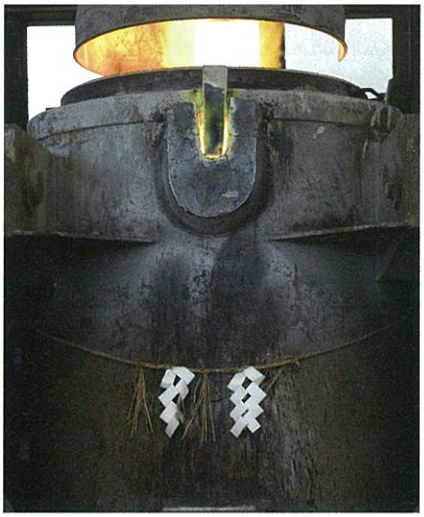
1. Size, shape or outline, and decoration are drawn in actual size, not to scale.
2. The outer mold—heavily reinforced and encased in a metal carapace—is made. This defines the bell's outline and has all the relief and other decorative detailing in its walls.
3. The core is constructed. This is a conical lump of fire-hardened sand and clay that defines the thickness and inner contour of the bell. A rough form is constructed on vertical armature, and a template of the desired size and contour is revolved around the core.
4. The outer mold is lowered over the core mold. It must be perfectly balanced and aligned before sealing.
5. The crucible with the molten bronze has been glowing bright orange during this preparation. It is brought over by gantry crane, and the molten metal poured at just the right speed into the opening at the top of the bell mold. The cast bell is now allowed to cool.
6. The carapace-like mold is disassembled, and the core removed.
7. The bell is given a prolonged finishing, which includes coloring, burnishing, and repair of any small



Glowing crucible of molten bronze and the drama of consecration and casting are exciting, while casting bronze statuary in a horizontal mold (opposite) seems quiet. Bell mold is vertical, within a forge adorned with Shinto zigzag paper festoons, and is nearly as tall as its makers.

坩埚中熔化的铜灼热通红，在经过庄严的拜祭仪式后，浇入模子，整个过程看得人兴奋而惊异。把铜注入水平模子（本页图）的过程看似非常平静，钟模是垂直的，铸炉外面挂着神道教的“纸垂”辟邪，钟高几乎与铸工的身高齐平。





现在连砂子都是从其他地方运来的。不过有一点值得强调——我们用的大部分材料，不管是金属还是砂子，都可以回收利用。”元井的话中带着一种对环境的责任感。

繁简合一

不管是铸造铜钟或是铜像，基本步骤都是一样的。需要两口模子，外模和内胆，铜液就浇入两模之间的空隙。以梵钟为例：

1，大小、形状（轮廓）、装饰都要以实际尺寸绘制，不可缩小。

2，外模要加固并以金属壳包裹。它不但决定了钟的轮廓，还为钟身增添各种美丽花纹和装饰要素。

3，制作内胆。这是一个用淬过火的砂子和粘土做成的圆锥形物体，它决定了钟的厚度和内部走向。先在垂直的支架上做出大致的形状，然后再按所需尺寸轮廓将特制的模板裹在内胆外面。

4，外模要套在内胆之上，这一过程需要极其精细的平衡手法，要排得完全整齐才能封起固定。

5，坩埚里滚烫的铜液已经准备就绪，亮橙色的光芒不时晃眼。坩埚用绞车运送，铜液浇入模子顶端的开口处。接下来就等金属冷却，大钟成形。

6，解体壳状外模，并移除内胆。

7，铸钟最后的收尾工作需要一段比较长的时间。着色、抛光、修补铸造时发生的小缺陷，都要在最后完成。

我们的拜访持续了一下午，只可惜没有一整月的时间，从早到晚，周一至周五坐镇工场，好让我们抓住机会，详细记录每一个步骤、每一道辅助程序、每一个技术细节，以体会铸铜工艺的博大精深。

沟通至上

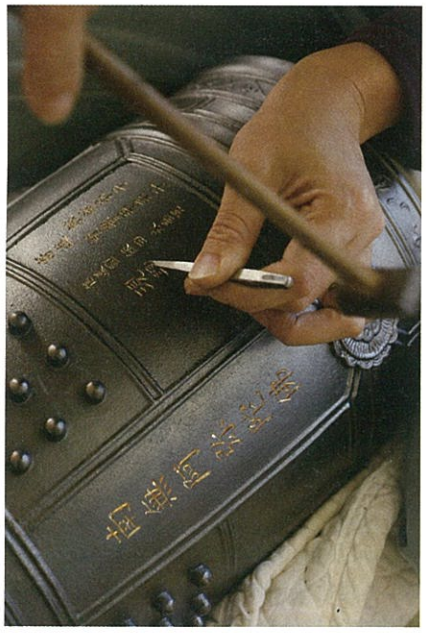
铸铜工艺每一个工序都如此引人入胜，而在我眼中工匠的劳作同样让人难忘。在日本，就像世界上其他地区一样，传统工艺的作业现场都会使用一套语言之外的

交流方法，系统周全、统率有致。人人都各司其职，默默工作，技术娴熟，手法沉着。

元井指出日本的梵钟具有独特的声响。“其他亚洲国家的钟厚度均一，因此奏出来的音色和我们的铜钟大不相同。日本的钟声在历史磨砺中，特别是经过江户时代，变得越趋低沉。京都妙心寺的钟是日本最古老的铜钟（公元 698 年），被评为日本的国宝，其钟声要比现代的钟高亢很多。一个钟的声音是否足够低沉，底韵浑厚，在钟声停息后仍能做到振动不绝，关键要看钟壁的厚度如何拿捏。”

在英语中，关于钟的名词并不丰富，只有一个词“bell”指代从叮当小仙女（Tinkerbell）一直到沙俄时代巨大撞钟的林林总总之事。相比之下象声词则要稍微丰富一些，有叮咚、嗡、隆隆、梆梆、当当等词表达各种不同的钟声和铃声。当寺庙悠扬的钟声响起，世间众生都在侧耳倾听梵音回荡、用心感受人事无常。

当————————



Lowering the outer mold carapace over the core mold takes concentration, as does engraving an inscription by hand on the surface of a small bell. Even the interior of a disassembled bell mold can have a unique aesthetic appeal.

将外模往下套在内胆上需要极其细心的操作，手工雕刻小钟的表面纹样也是一项非常考验耐心的活。分解后的钟模内部依然可以看到种种美的痕迹。

flaws that may have happened during the casting.

Our visit was only for one afternoon, but it became clear that if we were there an entire month, from morning to night, every working day, we would have had a much better chance of capturing and documenting the numerous steps, sub-steps, sub-sub-steps, skills, and intricacies of the casting process.

Communication

The full array of casting techniques is impressive, but what I found equally impressive was how the craftspeople worked. In Japan as elsewhere, particularly in traditional work, one encounters an intense nonverbal communication in the workplace. People move around and accomplish much without chatter, with calm and competence.

Motoi indicated also that Japanese bonsho have a special sound. "The bells of other Asian countries have a uniform thickness and thus a different toll than the ones we make. The tone of Japanese bells has become deeper over time, particularly during the Edo period. The bell of Kyoto's Myoshin-ji, Japan's oldest (ca. 698) and distinguished as a National Treasure, has a much higher tone than modern bells. The determining factor to give the toll a deep, rich bass, to make its vibration felt after the sound has ceased, is how the bell wall is tapered."

The English language is not terribly rich when it comes to nouns related to bells. There is only the one word—"bell"—that has to suffice for everything from Tinkerbell to the enormous tollers of czarist Russia. Sound words are a little richer—tinkle, jingle, chime, peal, clang, bang, bong, toll, tintinnabulation. A temple bell tolls; one hears then feels it down through the bones:

BoooonnnnnnnGGGGGGG ...